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Investigating the Impact of User Experience in Turkey's Online Bookstore: Application of Flow Theory

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Doctoral Dissertation

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ABSTRACT

In the 1990s, Amazon, Alibaba and eBay, pioneers in digital retailing, integrated technological innovations into their online shopping applications, to increase customers' satisfaction. These companies have paved the way for the sector's development.

Today, online shopping is more user-friendly than ever before. Innovations in electronic commerce -easy navigation, fast webpage loading times, quick product searches, accurate product recommendations, detailed information on product features, accurate visual design and shop atmosphere, and an easy checkout process- are site-specific developments that prioritize a pleasant shopping experience and create competitive advantage to businesses. Digitalization and e-commerce trends have brought significant changes to the retail industry both in developed and developing countries. As consumers increasingly turn to online platforms for their shopping needs, it is crucial for e-commerce businesses to adapt and provide an exceptional online shopping experience. This is particularly true for online book retailers, which cater to book enthusiasts seeking convenience and a wide selection of titles.

The empirical research is set in Turkey because it has a significant market for e-commerce (Akar, 2021; Kaya et al. 2019). This dissertation investigates the relationship between trust, satisfaction, and intention to repurchase in the digital retail sector, specifically in book shopping. This is done by conducting a survey with customers who made book purchases from the online store www.idefix.com, one of the largest e-commerce websites in Turkey. For this purpose, a questionnaire survey was administered to 649 active users of www.idefix.com. The flow theory (Csikszentmihalyi, 1975, 1990) was applied to identify the drivers of online shopping satisfaction and repurchase intention. The data was analyzed using partial least squares structural equation modeling (PLS-SEM), and the Statistical Package for the Social Sciences (SPSS) was utilized for statistical analysis.

Results indicate that the affective and cognitive experiential state have a direct positive effect on online shopping satisfaction and repurchase intention. Findings contribute to the ongoing discussion about consumers' experiences in e-commerce and their impact on the retail sector. The results of the study can provide website managers with a tool to evaluate customers' shopping experiences more accurately on the site and contribute to a better understanding of the relationship

between the dimensions of website performance mentioned in the literature. The study also explores theoretical implications.

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List of Abbreviations

% : Percent

AES: Affective Experiential State

AVE: Average Variance Extracted

CES: Cognitive Experiential State

CMB: Common Method Bias

CMV: Common Method Variance

CR: Composite Reliability

CV: Composite Validity

df : Degrees of Freedom

ECM: Expectation Confirmation Model

ECT: Expectation Confirmation Theory

F : F statistic

HTMT: Heterotrait-Monotrait Ratio

n : Frequency

ORI: Online Repurchase Intention

OSS: Online Shopping Satisfaction

p : Significance Value

PLS: Partial Least Squares

r : Correlation Coefficient

R^2 : Coefficient of Determination

SD : Standard Deviation

SE : Standard Error

SEM: Standard Error of the Mean

SPSS : Statistical Package for Social Sciences

t : t statistic

TL : Turkish Lira

TUBSIAD: Turkish Informatics Industry Association

TURKSTAT: Turkish Statistical Institute

UX: User Experience

VIF: Variance Inflation Factors

$\bar{X}$: Arithmetic Mean

α : Alpha Coefficient

β : Standardized Regression Constant

CHAPTER I – INTRODUCTION AND RESEARCH BACKGROUND

1.1. Introduction

In the realm of e-commerce, digitalization has played a pivotal role in making information, knowledge, and a wide range of services readily available on a global scale and it has created several opportunities for businesses to overcome cost, and time limits, to develop new products and services, to explore new markets, to improve or change their trading model in competitive environment (Eppright & Hawkins, 2009; Gupta, Iyer & Weisskirch, 2010; Ekanem & Abiade, 2018). When doing business on the internet, factors such as region and culture, web content accessibility, ease of use, secure identity verification, payment, fraud detection, performance, trust, stability, technology, and convenience are vital for the satisfaction and interest of both businesses and consumers (Rahman, 2018).

Since the early 2000s, with the introduction of web 2.0, consumers both in the online and the offline retail sector have become more knowledgeable, product-conscious, and demanding. The high impact of consumers' comments and/or complaints about companies and products on social media sites not only poses a threat to companies but also creates opportunities for them to get ahead of their competitors (Abdüsselam et al., 2016).

The use of computers along with internet technology has brought about significant changes in many areas of our lives, such as banking, reading newspapers, listening to the radio, and watching television. The Internet and the digitalization of services have induced some rapid changes in consumers' purchasing attitude and behavior (Gáti & Simay, 2019). Today, digital retailing performs beyond the progress shown in the traditional retailing sector and online consumers, whose demands and purchase habits have changed, represent a key market for businesses (Abdüsselam et al., 2016).

Undoubtedly, one of the most significant developments in the retail sector has been the increase of technology based on artificial intelligence and, as a consequence, the improvement of user experience. Parallel to these developments, the fact that online users and buyers can access a wide range of information, share and use it for their personal purposes, and can compare different

products in terms of price and features, has paved the way for the rapid growth of digital retailing (Hamit, 2012).

One of the reasons that have accelerated consumers' preference of online shopping is the increased number of working families. With limited amount of time available for shopping e-commerce is a convenient solutions for those with high income and spending opportunities. Another reason is that online shopping enables the sellers to establish a direct connection with buyers and reduce distribution costs, making it possible to sell products at lower prices. These time and price advantages offered by online retailers are the most fundamental motivators for online customers (Eren et al., 2012).

Additionally, the role of mobile devices in predicting user behavioral intent in digital retail has been shown in various studies conducted by researchers (Natarajan, Balasubramanian, & Kasilingam, 2017). For these reasons, companies that listen to their customers, follow technical and market changes, and invest in higher performing products have the opportunity to survive in their markets and to create a competitive advantage. For this reason, it is necessary for organizations to know their customers' needs, expectations, and behaviors in order to maintain continuity. When the requirements needed for technological development and change are examined in the literature, it is seen that they are variables that have previously been measured with limited effects.

In parallel with the development of digital technologies, mobile devices have a role in predicting user behavioral intent in digital retail as shown by various studies (Natarajan, Balasubramanian, & Kasilingam, 2017). Online shopping, with its evolving user experience structure, allows users to experience the shopping experience much faster, easier, and more useful than the traditional shopping experience, despite some disadvantages such as not being able to touch the product and not being able to have it immediately (Lavuri et al., 2022).

Today, with digitization, it is possible to follow the user more precisely with more accurate information and measure their behaviors (Rose et al., 2011). Businesses that provide the richest information about the product the consumer is looking for in the fastest way possible and achieve a satisfactory level in the online customer experience compared to their competitors will gain a significant advantage (Ahmad et al., 2022).

The purpose of this study is to examine the necessary elements for identifying the factors that determine online purchasing behavior and to examine the necessary elements for determining the factors that influence online purchasing behavior and to identify ways to test the scientific validity of the conceptual model that is created.

Past studies have shown that there is a relationship and impact between trust, satisfaction, and intention to repurchase (Fang et al., 2014; Liang et al., 2018; Nguyen et al., 2021). In this dissertation the aim is to investigate the relationship between satisfaction and repurchase in the digital retail sector, especially in book shopping. Quantitative method was employed to explore the experience of customers who made book purchases from www.idefix.com brand . The scientific contribution obtained through the testing of the conceptual model is a better understanding of digital flow-experiences and the relationship between the dimensions of website performance that are mentioned in the literature. The managerial contribution of this research is the identification of flow-moments which allows website managers to evaluate customers' shopping experiences more accurately on the site and to create competitive advantage.

1.2. Research Background

The rise of online shopping has transformed the way consumers purchase products and services, and Turkey's market is no exception. As the use of online shopping continues to grow, it is increasingly important to understand the factors that contribute to a positive online shopping experience and encourage repeat purchase behavior (Kim & Forsythe, 2008). One important concept that has been studied in the context of online shopping is flow theory, which suggests that a balance of skill and challenge can lead to a highly engaging and enjoyable experience (Csikszentmihalyi, 1990). This theory has been applied to various fields, including e-commerce, and has shown promising results in understanding consumer behavior (Huang & Hsu, 2009).

In the Online Customer Experience model, there are four direct antecedents of the optimal Online Flow state defined by Novak et al. (2000): Telepresence, Challenge Level, Skill, and Interactive Pace. It is assumed that the four antecedent variables shape the Cognitive Experiential State, based on theoretical support from studies on the Online experience by Novak et al. (2000, 2003) and Hoffman and Novak (2009). Rose et al. base the concept of Flow on a cognitive state in which an individual is completely absorbed in an activity and is not open to time or other external factors (Csikszentmihalyi, 1975).

To achieve this aim, we will draw on previous research on flow theory (Csikszentmihalyi, 1990), online customer experience (Rose et al., 2012), satisfaction (Oliver, 1980), and repurchase intention (Shin & Kim, 2008). In particular, we will focus on the antecedents and consequences of flow (Chen & Hsu, 2018), as well as the role of affective and cognitive states in shaping consumer behavior (Babin et al., 1995). By analyzing these factors, we aim to provide insights that can inform the development of effective marketing strategies for Turkey's Online Bookstore and other online book retailers.

1.3. Statement of the Research Problem

Turkey has a significant market for e-commerce. Regionally speaking, in a country where the percentage of consumers buying products and services online was only 18.4% in 2015, four years later, it arrived to 34.1% (Çebi Karaaslan, 2022). In 2019, the internet usage level was 75.3% (Turkish Statistical Institute [TurkStat], 2018) and thanks to the rapid development of online shopping and applications, the e-commerce sites in Turkey registered approximately 44 million visits per year. In 2020, this figure was 52 million (İçözü, 2020). This recent digitalization and the consequent growth of digital literacy have shaped the traditional retail sector in Turkey and altered the shopping habits of the Turkish population. According to (Turkish Informatics Industry Association [Tubsiad], 2022), between 2020 and 2021, the e-commerce market size has increased by 39%. One of the reasons might be that in those years people were in lockdown due to the imposed Covid-19 restrictions and shopped online rather than in traditional retail shops, the main uncertainty that remains is the inability to fully understand the factors that determine the purchasing behaviors of online customers, which leads to reducing marketing decisions to mostly incentive policies aimed at acquiring new customers and retaining existing ones (İçözü, 2020). However, despite the growing body of research on flow theory and online shopping, there is a lack of studies that investigate these concepts in the context of Turkey's online book market.

While customers have the chance to express their demands face-to-face in physical stores, reaching the relevant request form and describing the problem in online stores takes much longer and the response time for the problem can also take much longer (Kotler & Keller, 2012). Technical and digital marketing investments made in-store in online stores are of great significance for businesses. These investments can lead to customers leaving the store and heading to rival stores if they are directed towards design rather than resolving a problem experienced by the customer in the experience area as a result of wrong decisions.

Thus, it is important to explore what the elements that influence consumers' experiences when making a purchase decision in online stores. This is an important issue because online it is more uncertain to know what customers' needs and desires.

Specifically, this research investigates the relationships between skill, challenge, cognitive experiential state, online shopping satisfaction, and online book purchasing intentions in the context of online shopping. The research question as is follows:

1. **What is the mediating role of the affective experiential state (AES) in the relationship between flow experience (CES), online shopping satisfaction (OSS) and online repurchase intention (ORI)?**

2. **How do skills and challenges impact the affective and cognitive components of consumer experiences?**

3. **How the flow experience and experiential states drive consumers` repurchasing intention?**

As said before, the study examines the conditions of flow experience (skill and challenge), online customer experience (OCE), and its affective and cognitive states in relation to online book shopping satisfaction and repurchase intentions in the context of online book shopping. Hopefully, it can contribute to theory development in consumer behavior and e-commerce and to provide managerial implications to online stores.

Specifically, the thesis explores the antecedents and consequences of using Turkey's Online Bookstore and identify the key factors that encourage repeat purchase behavior. Drawing on social psychology and the theory of flow (Csikszentmihályi, 1975) we are going to study how the conditions of flow experience, such as skill and challenge, and online customer experience affect the affective and cognitive states of consumers when shopping for books online. By doing so, we hope to develop a modified model based on Rose et al.'s (2012) model to explain the relationship between flow experience and repeat purchase behavior in the context of Turkey's Online Bookstore.

Csikszentmihályi (1975) defines flow as an optimal and pleasurable state that occurs when individuals are fully concentrated on an activity that requires effort, and they become so immersed that they lose track of time. In this study, we adopt Hoffman and Novak's (2009:24) approach,

which views flow as an experiential activity, to examine the factors that influence online shopping satisfaction and repurchase intention. Csikszentmihályi (1990) suggests that flow arises from a congruence between one's skills and the challenges presented by the task at hand.

Flow is understood as an optimal, pleasurable state occurring when people are concentrated on a certain activity that requires some effort and while they are immersed in that activity, they lose track of time (Csikszentmihályi, 1975). Further, in this study we employ the concept of flow as an 'experiential activity' by following Hoffman and Novak's (2009:24) approach who explored different methods to assess flow in online environments. Flow, as shown by Csikszentmihályi (1990) is a congruence between skills and challenges, and we believe that it deserves academic attention to investigate whether consumers' skills and the challenges presented by the website influence online shopping satisfaction and repurchase intention directly or through mediators.

1.4. Significance of the Study

This doctoral dissertation analyses a highly relevant and timely issue. Given that the trend towards digitization and mobility has significantly influenced consumer behavior it is paramount to better understand the context of online shopping and online buyers' experiences. According to a report by eMarketer, global e-commerce sales are expected to reach $6.5 trillion by 2023, representing a 36% increase from 2020 (eMarketer, 2021). This increase in online shopping highlights the need for a deeper understanding of how consumers behave in the digital environment. In light of the increasing trend towards digitization and mobility, there is a pressing need to examine how these changes affect consumer behavior in the context of online shopping. Despite previous studies exploring the relationship between online shopping and the Flow Theory, there remains a significant research gap, exploring a new dimension of consumer behavior in the context of online shopping, specifically in relation to the impact of user experience and flow theory. Despite previous studies examining the relationship between online shopping and flow theory, there is still a need to investigate this relationship further in the context of the increasing trend towards digitization in this area. Thus, this study aims to address this gap by investigating a new dimension of consumer behavior in the context of online shopping. This will help businesses and marketers

better understand their target audience and design effective online shopping experiences that cater to their needs and preferences.

By exploring this previously unexamined dimension of consumer behavior, this study is expected to make a valuable contribution to the existing literature. Additionally, as an interdisciplinary topic, the research findings have the potential to provide common data and contribute to different fields. Specifically, by uncovering the relationship between the flow experience on online shopping and other variables in the study, investigating the online purchase experience relate to this website is beneficial to regional studies in two ways: (1) it allows for an exploration of the online shopping behavior of consumers in Turkey, providing insights into how digital technologies are being adopted. In a recent study, Sungur and Zaraci (2018) ranked the 81 Turkish provinces based on their level of innovativeness, entrepreneurship and human capital and showed that Istanbul was the most developed and innovative province in the country. (2) It sheds light on how e-commerce platforms can contribute to e-commerce retailers to enhance their online shopping experiences and improve customer satisfaction and repurchase intentions digital transformation in various regions of Turkey. This can be valuable information for businesses seeking to promote digitalization and economic growth nationwide. The relationship between digitalization of businesses such as e-commerce, social innovation and digital transformation has been studied by Nagy and Veresné Somosi (2022). By analyzing the International Digital Economy and Society performance scores, the scholars in regional studies found that Turkey -along with Brazil and Poland- was among the least digitally developed countries.

Therefore, the significance of this study lies in its potential to provide insights that could help inform business strategies and enhance the overall consumer experience in online shopping and it will help to advance our knowledge of the factors that influence online consumer behavior in the rapidly growing e-commerce industry.

1.5. Structure of the Study

The study is structured into six chapters, each contributing to a comprehensive exploration of the research topic.

Chapter I, titled "Introduction and Research Background," sets the stage by introducing the study and providing the necessary background information. It outlines the research problem, research aim, and research objectives, while emphasizing the significance of the study. The structure of the entire research is also outlined in this chapter.

Chapter II, known as the "Literature Review," delves into the existing body of knowledge. It starts with an introduction and proceeds to examine various concepts and theories such as Cognitive Experiential Status (CES) and Flow Theory. The chapter explores Flow Theory in online environments and online shopping, as well as the marketing outcomes and meaning creation associated with Flow Experience. It also covers Affective Experiential State (AES), online customer experience variables and behaviors, user experience stages, and Expectation Confirmation Theory (ECT).

Chapter III, known as the "Research Design and Methodology," details the research approach and methodology. It discusses the research paradigm, research design, research strategy, research method, time horizon, population, sampling, procedures, questionnaire, and instrument development. The chapter also covers the use of PLS Path Modeling as a statistical technique.

Chapter IV, titled "Theoretical and Conceptual Framework: Hypothesis Development," establishes the theoretical underpinnings of the study. It provides a theoretical background and presents the theoretical model, laying the foundation for hypothesis development.

Chapter V, titled "Data Analysis," focuses on the analysis of the collected data. It begins with an introduction and includes preliminary data analysis techniques such as outlier measurement, normality assessment, multicollinearity analysis, and addressing common method bias. The chapter further explores the demographic profile of respondents and examines the outer model measurement, reliability assessment, validity assessment, and conducts structural model analysis and hypothesis testing.

Chapter VI, the "Conclusion and Limitations" chapter, provides an overview of the research findings and draws conclusions based on the research aims. It discusses the practical and theoretical implications of the study while acknowledging its limitations. Additionally, it suggests directions for future research.

Together, these chapters form a cohesive structure that ensures a systematic and comprehensive exploration of the research topic, from the introduction and literature review to the theoretical framework, research design and methodology, data analysis, and concluding remarks.

CAHPTER II – LITERATURE REVIEW

2.1. Introduction

Understanding how experiences in online shopping influence consumer behavior can be seen in the growth of research in this area. For example, a study by Kim and Lennon (2013) found that experiential factors such as enjoyment, novelty, and escapism significantly influence online shopping behavior. Another study by Wang & Yu (2017) found that user experience significantly affects online purchase intentions. Additionally, a study by Chen and Dubinsky (2003) found that the overall online shopping experience significantly influences customer satisfaction and loyalty. These studies suggest that the concept of experience is relevant for understanding online shopping behavior and underscores the need for further research in this area. The focus of this literature review is to examine the theoretical framework employing flow theory. **Flow Theory** (Csikszentmihalyi, 1975, 1990), on the other hand, describes the psychological state that occurs when a person is fully immersed in an activity, feeling a sense of control, enjoyment, and intrinsic motivation. These concepts have been applied to various fields, including online shopping, to understand how individuals engage and respond to digital experiences (Fang et al., 2014; Liang et al., 2018). And research methods used to investigate two related constructs: Cognitive Experiential Status (CES) and Affective Experiential State (AES), Online Customer Experience Component Variables, and User Experience (UX) and its Stages.

Cognitive Experiential Status (CES), a construct that describes an individual's cognitive experience, refers to the degree to which a person is engaged and absorbed in an activity, while AES reflects the emotional state of an individual in a particular context.

Here, we discuss various theories and concepts related to the online shopping experience, with a focus on flow theory and its different aspects. We explore the cognitive and affective states of consumers during online shopping and how they relate to flow theory. Also, we examine the marketing outcomes of flow experience, creating meaning with flow experience, and data collection methods used in flow measurement. Additionally, we cover the online customer experience component variables and revealed behaviors, as well as user experience and its stages, discuss the expectation confirmation theory and its relevance to online shopping. This literature

aims to provide a comprehensive understanding of the online shopping experience and its various components.

In order to measure CES and AES, various data collection methods have been used, including self-reports, physiological measures, and behavioral observation. Additionally, researchers have identified several online customer experience component variables that contribute to the quality of online experiences, such as usability, trust, and enjoyment. Understanding these variables can help online retailers create more effective user interfaces and enhance the overall online shopping experience.

Lastly, this review also examines User Experience and its Stages, which describe the different stages a user goes through when interacting with a product or service, including initial attraction, engagement, and loyalty. By understanding these stages, businesses can better design and optimize their products and services to meet the needs and expectations of their target audience.

Overall, this literature review aims to provide a comprehensive understanding of the theoretical frameworks and research methods used to investigate the concepts of CES, AES, Flow Theory, Online Customer Experience Component Variables, User Experience and its Stages, Expectation Confirmation Theory, and their implications for online shopping.

2.2. Cognitive Experiential Status (CES) (FLOW)

Experience model is important for businesses and marketers who aim to create a positive user experience for their customers. In the current digital age, where online shopping and consumption have become a norm, understanding the factors that influence online customer experience has become crucial for the success of businesses. A positive online customer experience can lead to increased customer satisfaction, loyalty, and ultimately higher revenue for businesses. The Optimal Online Flow state in Online Customer Experience model (Novak, Hoffman & Yung, 2000) has four direct antecedents: Enjoyment, Challenge Level, Skill, and Interactivity. The four antecedent variables are assumed to shape the Cognitive Experiential State based on theoretical support from Novak et al. (2000), Novak et al. (2003), and Hoffman & Novak's (2009) studies on Online experience.

Enjoyment refers to the level of pleasure and satisfaction that users experience while interacting with a website or digital product. Challenge level refers to the level of difficulty and complexity of the task or activity, which should match the user's skill level. Skill refers to the user's level of competence and ability to perform the task or activity, while Interactivity refers to the degree of two-way communication between the user and the website or digital product.

Rose et al. (2012) base the concept of flow on a cognitive state in which an individual is fully engaged in an activity and is mentally immersed, to the extent that they are not aware of time or other things around them (Csikszentmihaly, 1975). Flow is a specific cognitive state applied to online activities (Huang, 2006; Mathwick & Rigdon, 2004). Online flow is defined as "a cognitive state experienced during online browsing" (Novak, Hoffman, & Yung, 2000, p. 24). According to Csikszentmihaly, it is a motivational structure that affects the experience (Rose, Clark, Samouel & Hair, 2012; Huang, 2006).

The flow state makes an activity interesting, satisfying, and immersive by leading to high levels of enjoyment, participation, and concentration (Huang, 2006). The result of the Optimal Flow state is a positive, subjective experience (Hoffman & Novak, 2009).

Cognitive Experience in Online Shopping refers to conscious information processing that leads to problem-solving or learning and is "related to thinking or conscious mental processes" (Gentile, Spiller & Noci, 2007; Rose, Clark, Samouel & Hair, 2012). The Cognitive Experiential State has its roots in the online 'flow' concept, which is the psychological state and motivational structure that affects the online shopping experience by cognitive processing (Huang, 2006). Its characteristics are challenge, arousal, attention, and enjoyment. These also lead to a decrease in awareness and intensity, and internal and subjective entertainment (Hoffman & Novak, 1996).

2.3. Flow Theory

Social psychologist, Mihaly Csikszentmihalyi (1975), was the first to introduce flow theory to science, describing flow as a state where individuals behave as if nothing else matters and defining it as a holistic feeling experienced when fully engaged. Later, Csikszentmihalyi (1990) updated his definition, characterizing flow as a mental state of complete immersion, focus, and attachment to an activity. Flow is also frequently referred to as the theory of optimal experiences. Throughout the rest of this thesis, this theory will be referred to as flow theory. Due to the difficulty and breadth

of its definition, flow has been measured by various authors using different dimensions and models.

Researchers (Chen et al., 2000; Jiang & Benbasat, 2004; Quinn, 2005) have defined flow in different ways by combining Csikszentmihalyi's flow dimensions that are appropriate for their own studies while disregarding others. This has had a negative effect on understanding what flow exactly is and has caused confusion in the literature. Table 1 presents the major definitions of flow in the literature.

Csikszentmihalyi (1975) describes the concept of "flow" as a state of complete engagement where individuals experience a holistic feeling of being fully absorbed in an activity. Chen, Wigand, and Nilan (2000) expand on this concept by defining an optimal and highly enjoyable experience as a state where an individual exhibits complete interest, concentration, happiness, internal interest, and loses track of time during attachment to an activity. Jiang and Benbasat (2004) define emotional state as the feeling individuals experience while engaging in specific activities. Furthermore, Quinn (2005) defines flow as a combination of action and awareness. These academic comments provide additional support for the importance of understanding the Optimal Online Flow state in Online Customer Experience model, which seeks to identify the factors that influence the formation of the Cognitive Experiential State of users. By creating an online customer experience that generates positive emotional states and fosters a state of flow, businesses and marketers can improve customer satisfaction and loyalty, leading to long-term success. Various definitions of flow experience sowed in below Table 1

TABLE 1: VARIOUS DEFINITIONS OF FLOW EXPERIENCE

Csikszentmihalyi (1975, p. 36)	Describes the holistic feelings individuals experience while in a state of complete engagement.
Chen, Wigand, and Nilan (2000, p. 586)	Define optimal and highly enjoyable experience as a state where an individual exhibits complete interest, concentration, happiness, internal interest, and loses track of time during attachment to an activity.
Jiang and Benbasat (2004, p. 117)	Define emotional state as the feeling individuals experience while engaging in specific activities.
Quinn (2005, p. 614)	Defines flow as the combination of action and awareness

Source: *Edited by the Author*

Csikszentmihalyi (1990, p.49) reported that flow consists of eight components and mentioned that at least one of these components is present during the flow experience of an individual. These components are clear goals, immediate feedback, loss of self, concentration, transformation of time, control, balance between challenge and skill, and autotelic experience (Table 2).

TABLE 2: COMPONENTS OF FLOW

Components of Flow	Explanation
Clear Goals and Immediate Feedback	*In experiences that lead to flow, goals are clearly defined from the outset, and individuals regulate their behavior by receiving immediate feedback (p. 54).*
Concentration	*Participants focus their attention entirely on the task at hand and have no unrelated thoughts in their minds (p. 58).*
Loss of Self-Consciousness	*Individuals lose their sense of self and become integrated with their surroundings (p. 62).*
Sense of Control	*Participants are aware that they can minimize the risks associated with the activity, and they do not experience a sense of losing control (pp. 59-61).*
Combination of Action and Awareness	*Participants become one with the experience, ignoring external pressure and judgment, thinking of nothing else, and the activity becomes almost automatic (p. 53).*
Time Perception	*Participants lose themselves in what they are doing and are unaware of how time passes (p. 66).*
Balance Between Challenge and Skill	*Participants naturally match the difficulties of their actions to their skills, so the actions they perform do not feel too easy or too difficult (p. 49).*
Autotelic Experience	*Participants work solely for their own satisfaction and do not serve another purpose in the process (p. 67).*

Source: *Csikszentmihalyi, 1990, s.49-6)*

Nakamura and Csikszentmihalyi (2014), who have dedicated many years to the concept of flow, have taken the balance of difficulty and skill level, clear goals, and rapid feedback as prerequisites for the occurrence of flow in their latest work, and have organized the dimensions of flow as follows (Nakamura and Csikszentmihalyi, 2014, p. 240):

- Intense and focused concentration
- The combination of action and awareness
- Self-awareness loss (the person loses awareness of themselves as a social actor)
- The feeling of being able to control one's actions
- The feeling that time passes faster than normal during the activity
- The experience during the activity gives a great sense of internal enjoyment (the end goal becomes just an excuse for the process).

2.3.1. Flow Theory in Online Environments and First Models

In his first model presented in 1975 (Three-Channel Flow Model), Csikszentmihalyi stated that flow occurs when the individual's skill level is in balance with the challenge of the task. When the level of skill exceeds the challenge (i.e., the task can be completed with little effort), boredom is experienced, whereas when the skill level is lower than the challenge (i.e., the task cannot be completed), a state of anxiety is experienced. Csikszentmihalyi's three-channel flow model is depicted in Figure 1.

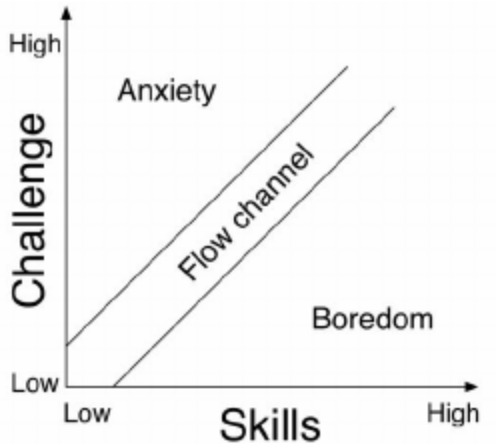


FIGURE 1: THREE-CHANNEL MODEL OF FLOW

Source: *Csikszentmihalyi, 1975, p. 51*

In 1988, Csikszentmihalyi added a new variable called "Apathy" to the model and proposed that the flow state can only be experienced when the challenge and skill are balanced above a certain level. They created a four-channel flow model seen in Figure 2. They noted that the fourth channel is the emotional state of apathy that occurs when the individual's skill and the challenge of the task are low.

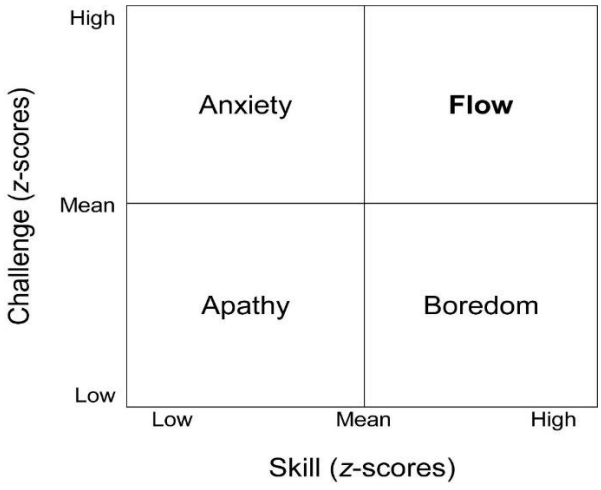


FIGURE 2: FOUR-CHANNEL MODEL OF FLOW

Source: Csikszentmihalyi, 1988

The figure depicted above demonstrates the concept of flow state by utilizing two axes: skills and challenges. When the level of challenge exceeds the level of skills, individuals may become anxious due to their inability to handle the task. Conversely, if the level of challenge is lower than the level of skills required to complete a task, the individual may experience boredom. When both the level of skills and the level of challenge are extremely low, the person may feel apathetic. Flow state is achieved when a task is challenging enough to engage the person's skills, resulting in an optimal experience where both skills and challenges are high. It is crucial to maintain a balance between skills and challenges to achieve flow state.

Carli, Fave, and Massimi (1988), on the other hand, reached an 8-channel flow model by adding the variables of relaxation, control, anxiety, and apathy to Csikszentmihalyi's flow model in 1988. This was formed as a result of skill and challenge levels in three tiers. According to the 8-channel model seen in Figure 3, the emotional states that an individual will experience depending on the level of challenge and perceived skill level vary, but as with the 4-channel flow model, high levels of challenge and skill are required for flow state.

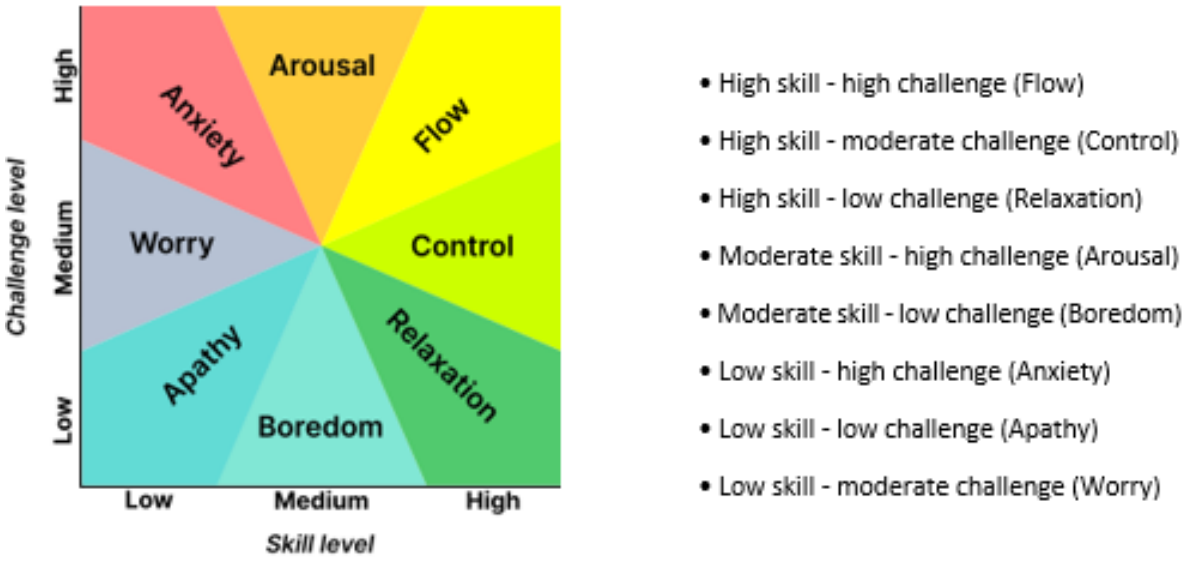


FIGURE 3: EIGHT-CHANNEL MODEL OF FLOW

Source: *Carli et al., 1988*

Since Csikszentmihalyi observed flow in activities such as music-making, rock climbing, dancing, sailing, chess, surgery, and other areas in 1975, the theory has been used in various fields by different researchers. In the late 1980s, researchers used flow theory to explain the use of information technologies (Webster, 1989; Webster et al., 1993; Agarwal and Karahanna, 2000). In subsequent years, research on flow has become even more specialized, with studies on online flow (Hoffman and Novak, 1996; Chen et al., 1999). Flow theory has been applied in marketing research to areas such as online shopping, web-based marketing applications, e-learning, online gaming, sports and leisure marketing, experiential marketing, and strategic areas such as innovation and invention (Barış, 2014, p. 256).

In the following sections, flow theory-focused research will be detailed from general to specific areas, including:

1) flow theory in computer-mediated environments,

2) flow theory in online environments, and

3) flow theory in online shopping, with models from literature being discussed.

Before examining online environments, many researchers have studied flow in human-computer interaction and computer-mediated communication (Webster, 1989; Ghani et al., 1991; Webster et al., 1993; Ghani and Deshpande, 1994; Ghani, 1995). Webster et al. (1993) observed that the flow experience in human-computer interaction is significantly related to learning, entertainment-seeking, and exploratory behaviors in computer use. These findings are similar to those of Ghani and Deshpande (1994), who showed that flow characterized by happiness and concentration is closely related to computer use and exploratory behavior, and to those of Ghani (1995), who showed that flow characterized by happiness and concentration is related to process focus, learning, and creativity.

Ghani and Deshpande (1994) have explained the flow in human-computer interaction with a model. In their model, seen in Figure 4, flow is measured with happiness and concentration structures. Flow is formed by perceived control and challenges in their model, and it ends with exploratory use and usage level.

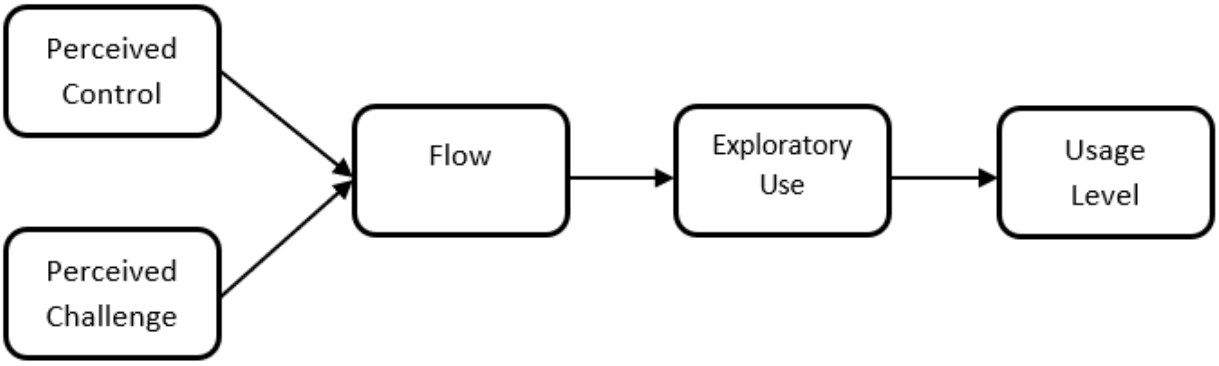


FIGURE 4: FLOW MODEL IN HUMAN-COMPUTER INTERACTION

Source: Ghani and Deshpande, 1994, p.38

In his subsequent study following Ghani and Deshpande (1994), Ghani (1995) states in his model that flow consists of perceived control, challenge-skill balance, and enjoyability, similar to the previous model but with the addition of the latter construct (Figure 5). Flow, happiness, and concentration were measured in the model, resulting in process focus, learning, and creativity.

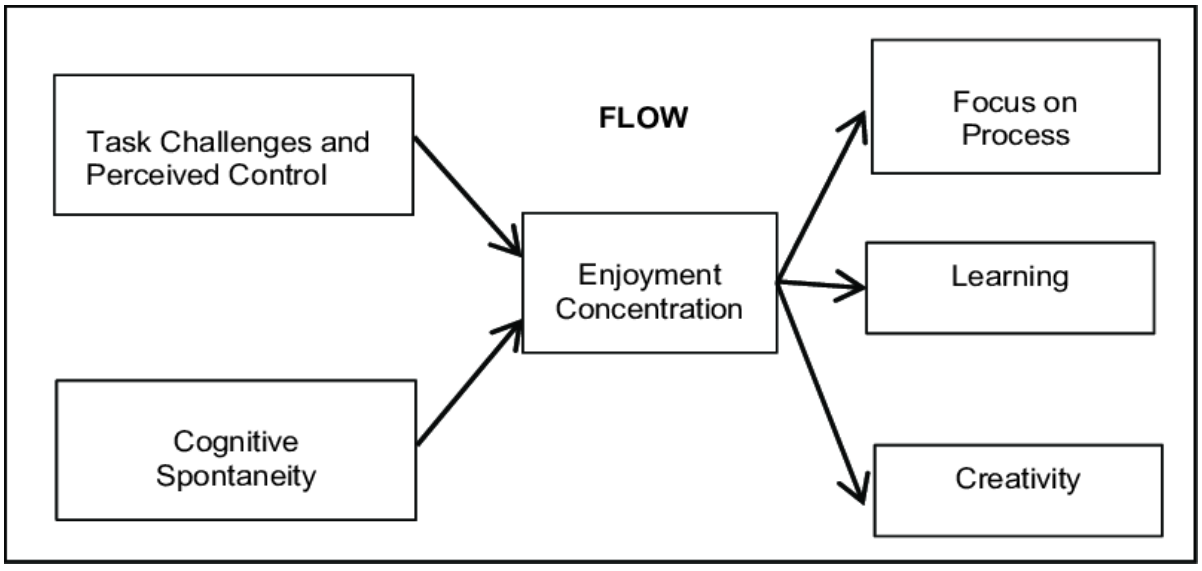


FIGURE 5: DEVELOPED FLOW MODEL IN HUMAN-COMPUTER INTERACTION

Source: Ghani, 1995, p.296

• *Hoffman and Novak (1996, 2000) Online Flow Models*

Hoffman and Novak (1996) developed a theoretical model for flow in web hypermedia environments. Drawing on Csikszentmihalyi's work, they identified challenge-skill balance, focused attention, virtual presence based on Steuer's (1991) work, interactivity, and vividness as the antecedents of flow. They also proposed the process characteristic and interest variables as the precursor structure for the flow model in this study. Increased learning, perceived control, exploratory mindset, and positive experience were considered as the outcomes of flow (Figure 6).

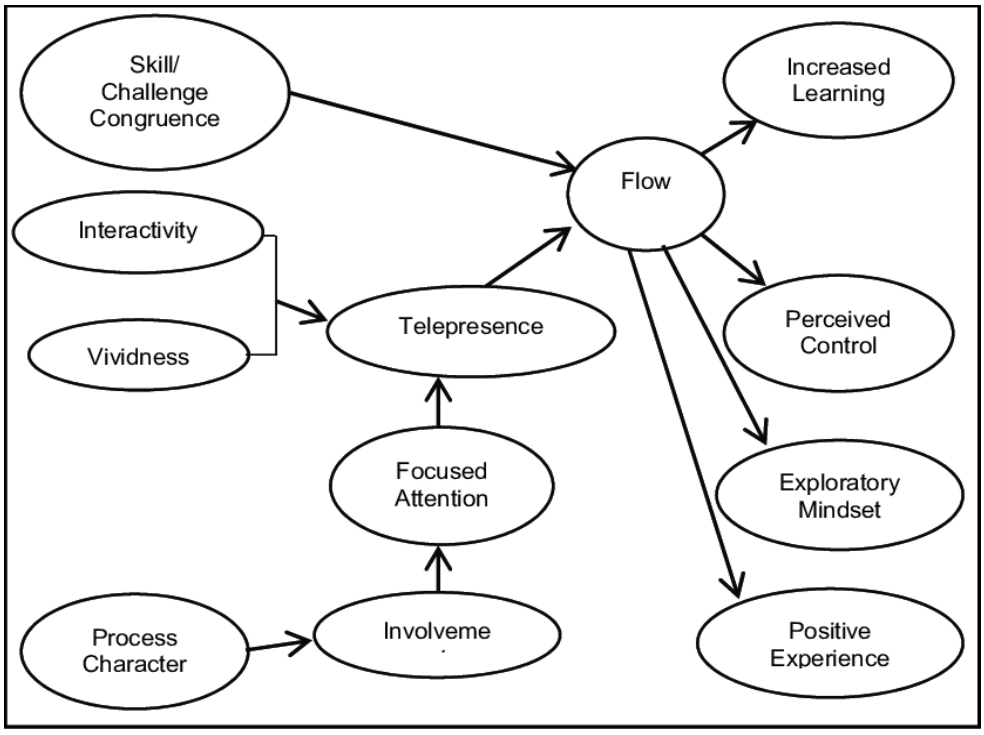


FIGURE 6: HOFFMAN AND NOVAK`S ONLINE FLOW MODEL
Source: Hoffman and Novak, 1996

In the year 2000, Novak et al. revised their 1996 model (Figure 6). In this model, the perceived control variable was moved from the outcomes to the antecedents, and arousal was added as an antecedent. In summary, the primary antecedents of flow in the revised model were identified as skill/control, challenge/arousal, and focused attention. The revised model is shown in Figure 7.

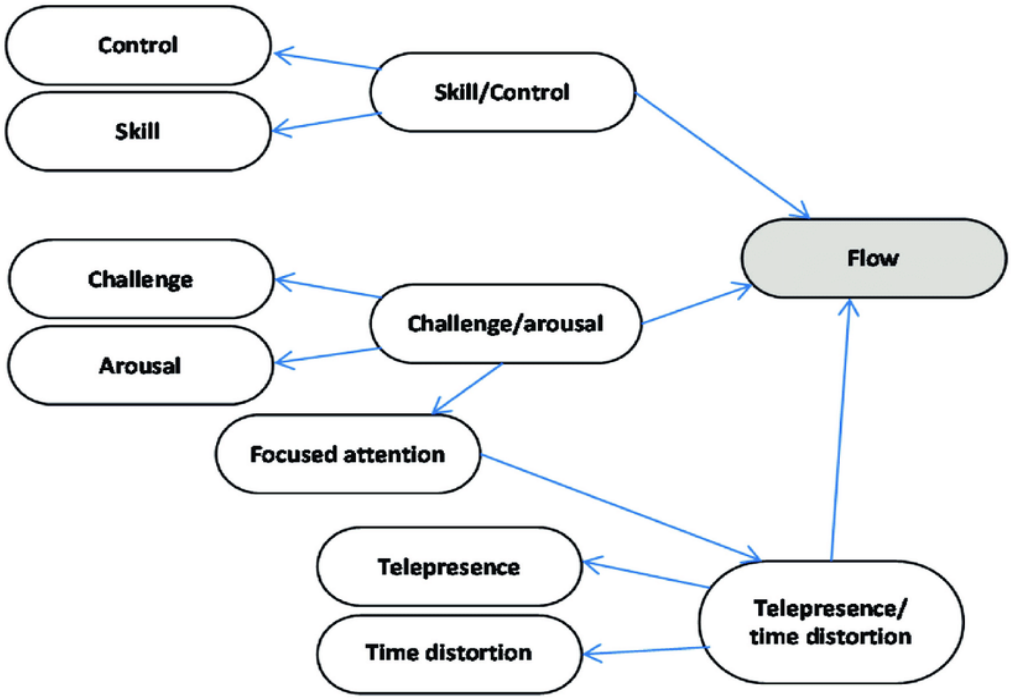


FIGURE 7: NOVAK `S ONLINE FLOW MODEL

Source: Novak et al., 2000, p.34

• *Human-Vehicle-Task Flow Model (PAT Model)*

Finneran and Zhang (2003) focused on the antecedents of flow in their model, and divided them into components of person, artifact, and task (PAT), examining the relationships between these components (Figure 8). They considered the person component as consisting of unchanging personality traits and dynamic personality traits that vary depending on the situation. Some individuals find it easier to experience flow due to their personality traits. Finneran and Zhang provided an example of the distinction between artifact and task by using email application. They stated that an email application (artifact) could create flow by itself, while writing or reading an email (task) could also create flow. They also emphasized that the interactions and harmonies between these three components are important in creating flow.

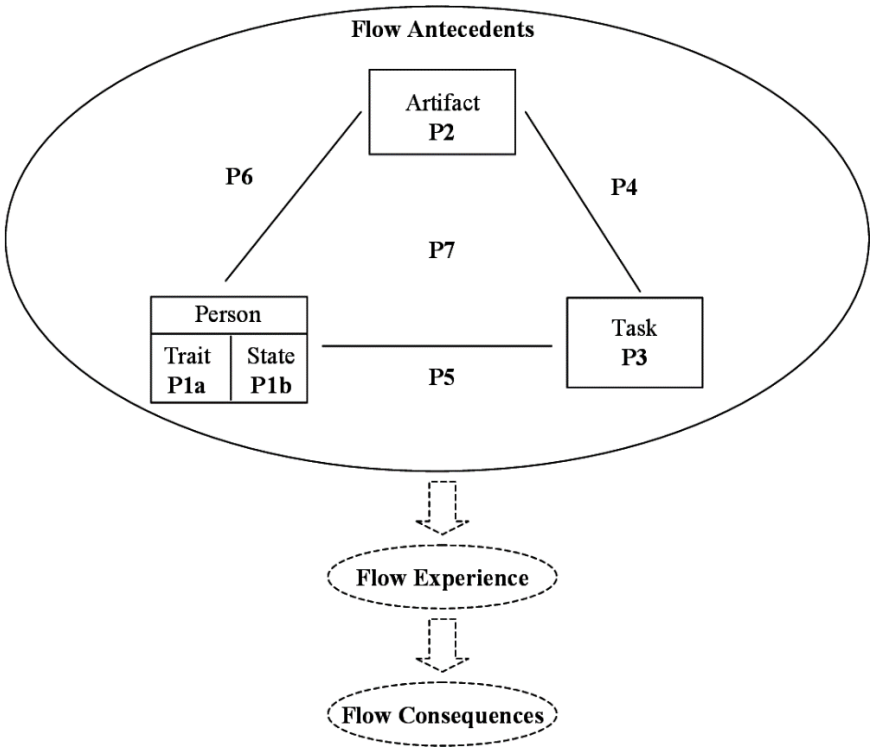


FIGURE 8: HUMAN-VEHICLE-TASK FLOW MODEL (PAT MODEL)

Source: Finneran and Zhang, 2003, p.6

• *Hoffman And Novak (2009) Integrated Flow Model*

In their study, Hoffman and Novak (2009) developed an integrated flow model by combining their previously developed models in 1996 (Hoffman and Novak) and 2000 (Novak et al.) as well as models by ten different researchers (Agarwal and Karahanna, 2000; Korzaan, 2003; Chou and Ting, 2003; Hsu et al., 2013; Huang, 2003; Luna et al., 2003; Skadberg and Kimmel, 2004; Huang, 2006, Sanchez-Franco, 2006; Choi et al., 2007) for creating a comprehensive integrated flow model in online environments, as seen in Figure 9.

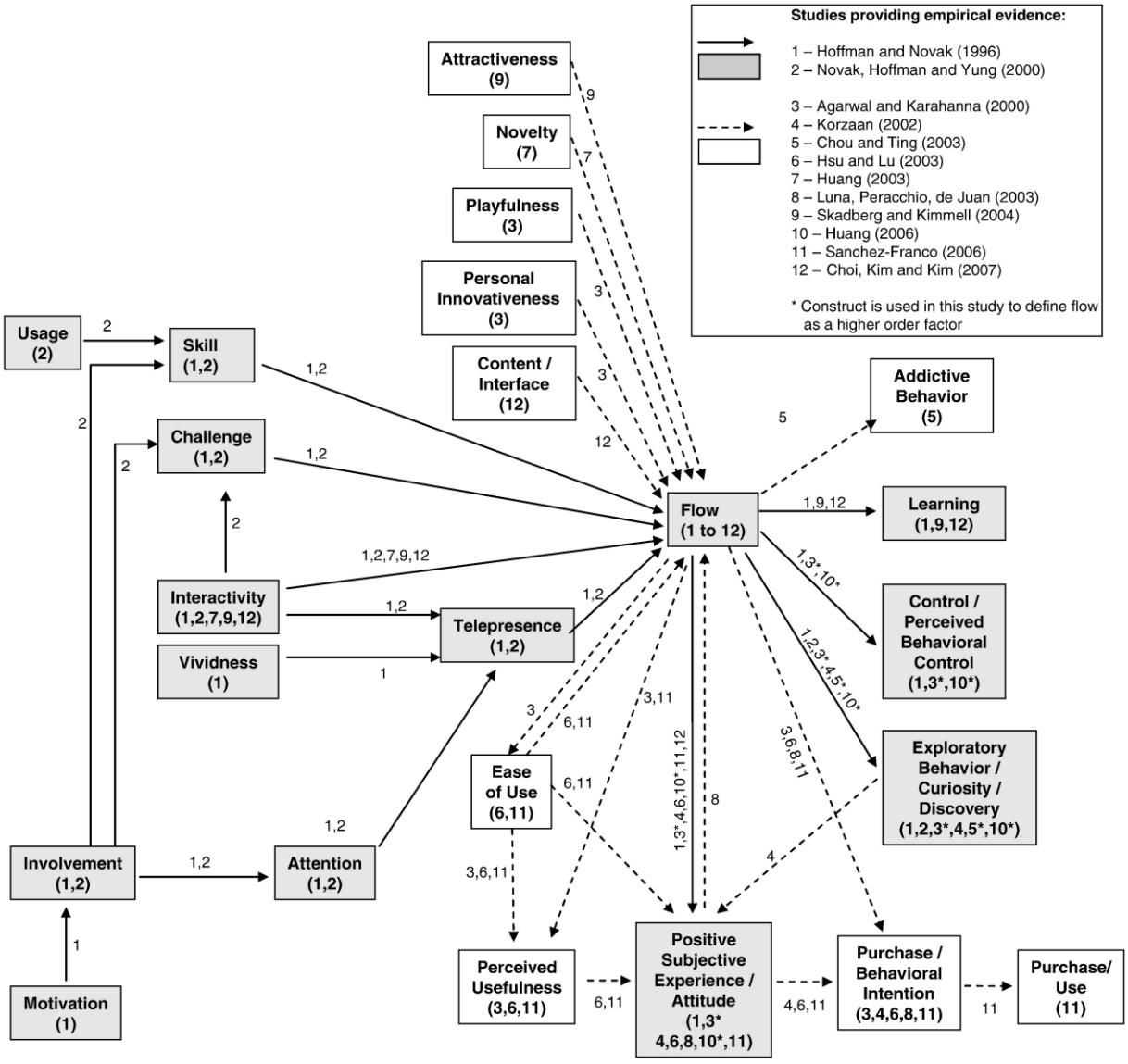


FIGURE 9: INTEGRATED FLOW MODEL

Source: Hoffman and Novak, 2009, p. 25

2.3.2. Flow Theory in Online Shopping

The study of flow in online shopping has been pioneered by Hoffman and Novak (1996). Flow is a powerful and intriguing concept in commercial terms (Hoffman and Novak, 1996) and is also important in understanding the nature of consumer experience (Siekpe, 2005).

Experts have suggested that the success of online marketers is related to their ability to provide consumers with a flow experience (Obadă, 2013) and that the development of online shopping can be achieved by increasing interest and excitement (Park, 2013). According to Bridges and Florsheim (2008), online consumers who experience flow make more purchases and return to the site to experience the same flow again. Schibrowsky et al. (2007) have suggested that flow theory will be an important research area for individuals and organizations in online marketing research in their study compiling internet marketing research and determining future directions. Koufaris (2002) proposed an integrated theoretical framework that considers the online consumer as both a shopper and a computer user. In his study, he combined flow theory and the technology acceptance model to demonstrate how the pleasure of shopping and perceived usefulness strongly influence the revisit to the website, as well as how perceived web skills and positive barriers reveal a positive relationship with online consumer shopping pleasure and concentration. Siekpe (2005) compared challenge, concentration, curiosity, and control factors as to whether they should be considered as the precursors to flow or the dimensions that create flow and concluded that they should be treated as dimensions of flow.

Despite the widespread use and validity of flow theory in online consumer behavior research, Finneran and Zhang (2005) and Siekpe (2005) have argued that there are significant differences among flow models in terms of the components, antecedents, and consequences of flow. Hoffman and Novak (2009), citing their seminal work which has received extensive citations, approximately three hundered, over the course of 13 years, note that the concept of flow is still not well-defined and that some issues require resolution. Similarly, Choi et al. (2007) have noted that the flow structure is broad and ill-defined, resulting in diverse operationalization, testing, and application, while Guo and Poole (2009) have pointed out that many flow models focused on interactive information technologies are incomplete.

Another ambiguity was acknowledged by Huang (2003) when examining the concept of flow in the context of web marketing. Some studies were conducted using indicators of interest, excitement, and enjoyment to measure flow (Ghani and Deshpande, 1994), the same indicators are found in popular interest scales (Higie and Feick, 1989; Mcquarrie and Munson, 1992). Huang claimed that the concept of flow was often confused with 'interest', a popular term in marketing studies. Clearly, the two concepts are not synonyms. Huang (2006) proposed a three-sided framework, as shown in Figure 10, to disambiguate flow and distinguish it from situational and enduring interest.

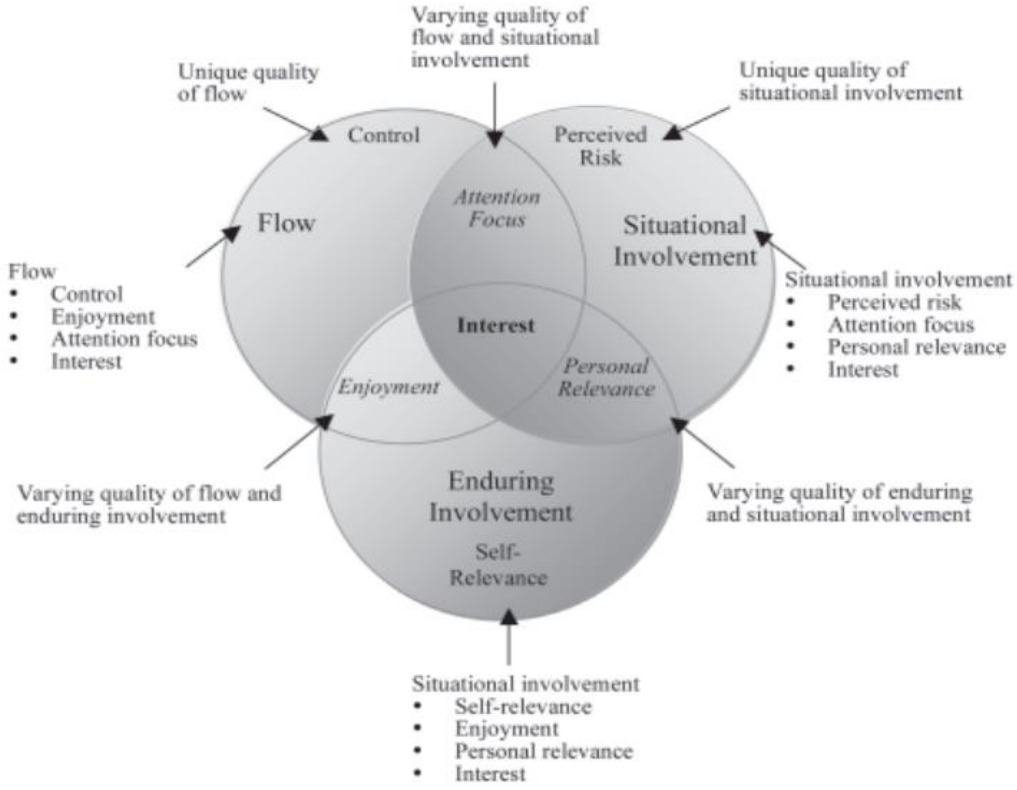


FIGURE 10: THEORETICAL THREE-DIMENSIONAL RELATIONSHIP AMONG FLOW, SITUATIONAL INTEREST, AND ENDURING INTEREST

Source: *Huang, 2006, p.384*

As seen from Figure 10, Huang (2006) stated that flow consists of four dimensions: control, focused attention, enjoyment, and personal relevance. Additionally, he indicated that control is only one dimension of flow, while the focused attention dimension intersects with situational involvement, the enjoyment dimension intersects with persistent interest, and the interest dimension intersects with flow, situational involvement, and enduring involvement.

Research on flow in online shopping has been conducted in many studies on the experiential dimension of online shopping, with the concept of "flow experience" first introduced in online shopping studies by Hoffman and Novak (1996, p. 48). Subsequent studies in online shopping have also used the flow experience in many studies on the experience dimension. Choi et al. (2007) reported that using a three-stage framework consisting of agreed-upon antecedents, flow experience, and outcomes in flow research would be beneficial.

In the following sections, the methods used to measure and dimension flow, as well as marketing outcomes associated with flow theory, are discussed in more detail since these provide a good base to the empirical research in this thesis.

2.3.3. The Marketing Outcomes of Flow Experience

Flow theory, as shown before, is important in understanding consumer behavior in online environments from a marketing perspective. Flow measurements developed by different researchers in the flow literature are different and inconsistent from each other. The structure that one researcher accepts as the precursor of flow can be the result of the flow experience in another. For example, the control factor, which constitutes the flow experience in the studies of Huang (2003), Kamis et al. (2010), Guo and Klein (2009), and Kamis et al. (2008), is considered as a dimension of the flow, while in Hoffman and Novak's (1996) study, it is considered as the result of flow and as the precursor of flow in the study of Luna et al. (2002). Hoffman and Novak (2009) stated that the fundamental outcomes of flow experience in hypermedia computer-mediated environments are learning, attitudes, behavioral intentions, behaviors, exploratory behavior, and perceived control, and emphasized that flow experience is an important structure in better understanding online communication behavior.

2.3.4. Creating Meaning with Flow Experience

In this thesis it is relevant to understand how flow experience can be created by service providers. According to Csikszentmihalyi (1990), it is possible for individuals to come as close as possible to the flow experience, but it requires a final step under conscious control. In this context, it is necessary to transform life into a unified flow experience. When a person sets reasonable goals, works to develop skills to reach challenging goals, and expends all their energy to achieve them, actions and emotions come together in harmony, and each activity becomes meaningful. It is possible for individuals to give meaning to their entire life with this perspective.

Creating meaning requires individuals to include their actions in a single flow experience and thereby bring order to their components of the mind. People who find their lives meaningful generally have goals that are significant enough to be able to give all their available energy and add value to their lives. This process is defined as a purposeful process. To experience flow, individuals must set goals related to their actions. While the goals themselves do not constitute importance on their own, what is important is to be able to include them in the activity by focusing attention during this process. Another use of the expression "creating meaning" is to express intention. It is not enough for individuals to determine their purposes that unite their goals, but they must also be able to fight the challenges brought by their purpose. When creating meaning, goals must be translated into action through effort and intention. For individuals experiencing flow, success is not important. What matters is the size of the effort expended to achieve the goal. When a significant goal is followed with determination, and all of an individual's various activities can be integrated into the flow experience, consciousness is harmonized. A person who knows their desires, strives to achieve them, and becomes a harmonious person with their thoughts and actions is an individual who has experienced internal harmony. Goals, determination, and harmony create meaning by transforming life as a whole into a flow experience (Csikszentmihalyi, 1990). As a result, understanding the role of flow in online shopping behavior can provide insights into the factors that influence consumer decision-making, including repeat purchase behavior. By exploring the antecedents and consequences of flow experience in the context of Turkey's Online

Bookstore, this research seeks to shed light on the relationship between flow experience and repeat purchase intention in the online shopping environment.

2.3.5. Data Collection Methods Used in Flow Measurement

Collecting data related to the experience of flow is challenging due to its dynamic and emotional nature (Finneran & Zhang, 2005). In the literature on flow research, the most commonly used data collection methods and their advantages and disadvantages are discussed under the following headings, and ultimately summarized in a table (Table 3).

Similar to the original definition of flow, Hoffman and Novak (1996) defined flow as a state that facilitates a seamless sequence of responses during online navigation, provides intrinsic happiness, leads to loss of self-consciousness, and self-reinforcement. The areas that have been investigated in terms of flow in online environments are mainly computer games (e.g., Liu and Chang, 2012; Nah et al., 2014), e-learning (e.g., Ho and Kuo, 2010; Procci et al., 2012; Millat et al., 2014; Faiola et al., 2013), online shopping experience (e.g., Novak et al., 2000; Koufaris, 2002; Hoffman and Novak, 2009; Korzaan, 2003; Huang, 2003), and web usage (e.g., Hoffman and Novak, 1996; Novak and Hoffman, 2000; Skadberg and Kimmel, 2004).

In Table 3, we summarize some relevant summarizes various studies on the construct of flow. Flow-theory was employed in different online contexts such as:

- online flow,
- web-induced flow,
- flow in internet use,
- flow in online purchase,
- flow in web use, and
- flow in social media.

Table 3 lists the dimensions and antecedents of flow in each study we found relevant for this research and describes the method used by fellow researchers. As shown, the quantitative method of survey questionnaire was found suitable in most studies to assess flow. Additionally, the

findings of each study include increased learning, attitude, behavior, impulsive buying, repeat buying, and purchase intentions.

TABLE 3: A SYNOPSIS OF RESEARCH EXAMINING THE CONCEPT OF FLOW THEORY IN THE CONTEXT OF THE INTERNET.

Authors	Dimensions	Precursors	Methodology	Application Area	Outputs
Csikszentmihalyi (1988)	Concentration, Control, Time transformation, Self-loss of consciousness, Flow	Difficulty-skill balance, Clear goals, Feedback	Conceptual	Daily life activities, Sports activities	Autotelic experience
Hoffman and Novak (1996)	Self-loss of consciousness, Control, Time transformation, Virtual presence	Difficulty-skill balance, Focused attention, Participation, Interactivity, Vividness	Survey	Hypermedia-Web users	Increased learning, Perceived behavioral control, Exploratory attitude, Positive experience
Chen et al. (1998)	Enjoyment, Attention, Time transformation	Difficulty-skill balance, Clear goals	Survey	Web users	-

Agarwal and Karahanna (2000)	Innovation, Playfulness, Control, Curiosity, Focused attention, Increased enjoyment, Time transformation	Survey	Web users	Perceived ease of use, Perceived usefulness, Intention to use	Perceived ease of use, Perceived usefulness, Intention to use
Novak et al. (2000)	Single dimension	Focused attention, Virtual presence, Time transformation, Challenges, Skill-control, Interactivity	Survey	Online shopping	Exploratory behavior, Positive impact
Rettie (2001)	Focus, Control, Time transformation, Enjoyment	Clear goals, Feedback, Difficulty-skill balance	Focus group interviews	Internet flow experience	-
Koufaris (2002)	Control, Enjoyment, Focus	Difficulty, Skill	Survey	Online shopping	Unplanned purchases, Repeat purchases
Korzaan (2003)	Single dimension	-	Survey	Online shopping	Exploratory behavior, Attitude
Luna et al. (2003)	Single dimension	Attention, Challenges, Interactivity, Attitude towards website	Survey	Web users	Purchase intention, Intention to revisit
Hsu and Lu (2004)	Single dimension	Perceived ease of use	Survey	Online gaming	Attitude and intention

Li and Browne (2004)	Control, Curiosity, Focused attention, Enjoyment, Temporary self-loss of consciousness	Consciousness	Survey	Web users	-
Pace (2004)	Time transformation, Enjoyment, Mental arousal, Low awareness, Control, Virtual presence	Clear goals, Curiosity, Feedback, Difficulty-skill balance, Interest, Focused attention	Semi-structured interview	Web users	-
Skadberg and Kimmel (2004)	Enjoyment, Presence, Time distortion	Interactivity, Attractiveness, Skill-Balance	Survey	Web users	Increased learning, Attitude, Behavior
Smith and Sivakumar (2004)	Duration, Intensity	-	Conceptual	Online shopping	Impulsive buying, Repeat purchasing
Siekpe (2005)	Focus, Curiosity, Control, Challenges	-	Survey	Online shopping	Purchase intention
Ilsever et al. (2007)	Single dimension	Concentration, Satisfaction	Conceptual	Online shopping	E-loyalty
Guo and Poole (2008)	Enjoyment, Focused attention, Awareness, Time	Challenge-skill balance, Clear goals, Feedback	Survey	Online shopping	Behavioral intentions, Satisfaction, Perceived usefulness

	distortion, Self-awareness loss, Control, Merging action and awareness				
Hoffman and Novak (2009)	Single dimension	Challenges, Skills, Interactivity, Motivation, Innovation, Presence, Interest, Attention, Vividness, Interface, Ease of use	Conceptual	Internet	Learning, Control, Exploratory behavior, Perceived usefulness, Perceived ease of use, Behavioral intention, Addiction
Lu et al. (2009)	Single dimension	Control, Concentration, Enjoyment, Perceived ease of use, Perceived usefulness	Survey	Online messaging applications	Behavioral intention
Rossin et al. (2009)	Focused attention, Control, Time distortion, Enjoyment	Clear goals, Feedback, Challenge-skill balance	Survey	Online learning	Learning performance, Student satisfaction, Perceived learning ability, Improvement in learning ability
Lee and Chen (2010)	Focus, Enjoyment, Time distortion, Presence	-	Survey	Online shopping	Concentration, Perceived ease of use, Purchase intention
Zhou et al. (2010)	Single dimension	Information quality, System quality, Trust	Survey	Social media	Loyalty

Hernandez (2011)	Single dimension	Challenges, Skills, Presence, Cognitive arousal	Survey	Online advertising games	Attitude
Animesh et al. (2011)	Single dimension	Interactivity, Socialness, Density, Consistency	Survey	Shopping	Purchase intention
Domina vd. (2012)	Focus, Control, Arousal	Novelty-seeking, Independent decision-making	Survey	Shopping	Purchase intention
Hsu vd. (2012)	Control, Focused attention, Curiosity, Interest	-	Survey	Online shopping	Purchase intention, Repeat purchase intention, Impulsive buying
Huang (2012)	Single dimension	Interpersonal communication, Active control, Social identity	Survey	Shopping	Purchase intention
Noort vd. (2012)	Single dimension	Interactivity	Survey	Web users	Cognitive responses, Emotional responses, Behavioral responses

Sharkey vd. (2012)	Single dimension	Design features	Survey	Online shopping	Behavioral intention
Zhou (2013)	Single dimension	Structural confidence	Survey	Mobile shopping	Purchase intention
Gao and Bai (2014)	Single dimension	Knowledge, Efficiency, Arousal	Survey	Travel shopping	Purchase intention, Satisfaction
Kim and Han (2014)	Single dimension	Knowledge	Survey	Mobile shopping	Purchase intention
Kwak vd. (2014)	Focused attention, Enjoyment, Curiosity, Virtual presence, Time distortion	-	Survey	Social media	Self-disclosure, Change in interpersonal relationship
Obada (2014)	Single dimension	Time spent in virtual store, Virtual presence, Challenges, Self-efficacy	Survey	Online shopping	Perception of store quality

Niu and Chang (2014)	Low level, Middle level, High level	Internet addiction	Survey	Online shopping	Planned purchase, Impulsive purchase
Yanık (2014)	Single dimension	Holiday motivation	Survey	Online tourism shopping	Purchase intention
Ayazlar (2015)	Time transformation, Loss of self-awareness	Control, Difficulty-skill balance, Concentration, Sensation-seeking behavior	Survey	Paragliding experience	Experience satisfaction, Life satisfaction
Shim et al. (2015)	Single dimension	Challenges, Skills	Survey	Online shopping	Brand experience, Brand loyalty
Ali (2016)	Single dimension	Website usability, Website functionality, Website security and privacy	Survey	Online holiday shopping	Consumer satisfaction, Purchase intention
Hsu et al. (2016)	Single dimension	Perceived ease of use, Perceived usefulness, Information quality, System quality, Service quality	Survey	Online shopping	Purchase intention, Impulsive purchase
Ettis (2017)	Pleasure, Focus	Virtual store interface colors	Survey	Online shopping	Number of visited pages, Time spent, Purchase intention, Intention to revisit

Özkara et al. (2017)	Control, Enjoyment, Curiosity, Time transformation, Consent, Socialization	Challenges, Skills, Clear goals, Feedback	Survey	Online shopping	Purchase intention
Yang and Lee (2017)	Pleasure, Control, Focused attention	-	Survey	Online data flow	Behavioral intention
Chen et al. (2018)	Pleasure, Concentration	Perceived ease of use, Perceived usefulness	Survey	Mobile shopping	Attitude, Purchase intention
Cabuk and Kus (2019)	Concentration, Perceived enjoyment, Curiosity, Time transformation, Action and awareness unity	-	Survey	Online shopping	Purchase intention
Yenilmez (2019)	Perceived skill, Perceived complexity, Challenge-skill balance, Clear goals, Integration of action and awareness, Concentration, Time perception, Sense of control, Clear and precise feedback, Loss	Store experience	Survey	Online shopping	Purchase intention

	of self-consciousness, Experience being its own goal				
Lin et al. (2020)	-	Information overload (information, communication, social)	Survey	Social media	Fatigue, Intention to stop use
Shahpasandi et al. (2020)	Curiosity, Skill, Challenge, Pleasure, Concentration, Virtual presence, Time transformation	Hedonic navigation	Survey	Shopping on Instagram	Impulsive buying

Source: *Edited by Author based on the analysis of 48 relevant papers (out of 258 papers) identified in Scopus using keywords such as "flow" AND "e-commerce" in the field of 'Business, Management and Accounting" in April 2023.*

- ***Experience Sampling Method***

The Experience Sampling Method was proposed by Larson and Csikszentmihalyi (1983) to allow individuals to record their experiences as closely as possible during activity. The essence of this method is to allow research participants to take short breaks during their activities and record notes about their experiences. The important point here is to record the participant's emotions at that moment (only at that moment and in that place). Participants are given a diary to record their notes, and on every page of the diary, psychometric scales, open-ended questions, or similar scales that can contribute to the evaluation of experiences in that place or time are included (consistently). In research conducted through computer-mediated environments today, data can also be collected from pop-up windows that appear at short intervals during the web experience. The advantage of the Experience Sampling Method is that it allows for the measurement to be taken with a short break in the activity and enables valid and reliable data related to experience to be collected quickly with the help of appropriate short-form scales (İşigüzel & Çam, 2014, p.793).

- ***Experiments***

Some flow studies have used experiments as a method (Ghani, 1995; Ghani, 1991; Webster et al., 1993). Experiments provide researchers with a controlled environment, where the effect of different skill levels or website features on flow experience can be examined. Flow experience can vary depending on the situation, not only related to the activity performed but also related to the current mood. If the design of experiments is based only on activity, there is a possibility of not being able to reach real results, since the person cannot access that mood state. Therefore, experiments need to be well-designed (Finneran and Zhang, 2005).

- ***Qualitative Techniques***

Although experience sampling method is seen as the most valid method in the literature, it is an expensive method and can be tedious for participants. The solution to this problem may be to use qualitative research. Qualitative studies help to understand flow by asking the "why" question. As an example of qualitative studies in flow theory, Chen et al. (1999) tried to determine users' perceived difficulties, perceived control, and emotions related to flow during Web use by applying an open-ended questionnaire with content analysis. Pace (2004) tried to determine users' flow experience with semi-structured interviews. In qualitative research, describing experiences in their own words by participants enables validity and a deeper understanding of the flow experience, but data is not collected during the flow experience itself (Finneran and Zhang, 2005).

- ***Surveys***

Although studies with natural observation have strong environmental validity, they take a long time, and a large number of subjects are required to obtain accurate results (Finneran and Zhang, 2005). Surveys, which are frequently used in flow research, can be conducted both online and on paper, and general experiences are usually measured with Likert-type scales. However, the flow experience on the Web varies depending on the situation (Chen et al., 1999). Difficulties and required skills should not always be limited to software and hardware. For example, a user may experience flow in a discussion group, which is generally unrelated to the Web environment, and the discussion itself may create flow. Therefore, it is not sufficient to measure the flow, which varies depending on the situation, with general expressions (Finneran and Zhang, 2005). Some surveys are designed to direct the participant to a particular flow experience, such as Chen et al.

(1999). The limitation of such surveys is that the participant may not remember their thoughts and situation at that moment.

In summary, flow experience is treated as either unidimensional or multidimensional in different studies (Table 3). Chen et al. (1999) highlights that measuring challenges and skills using unidimensional scales may not be an accurate approach. This is not only a concern related to measurement but is also associated with the conceptualization of how challenges and skills are perceived in specific situations.

Moreover, the measurements taken for unidimensional and multidimensional constructs also differ, as illustrated in Figure 11.

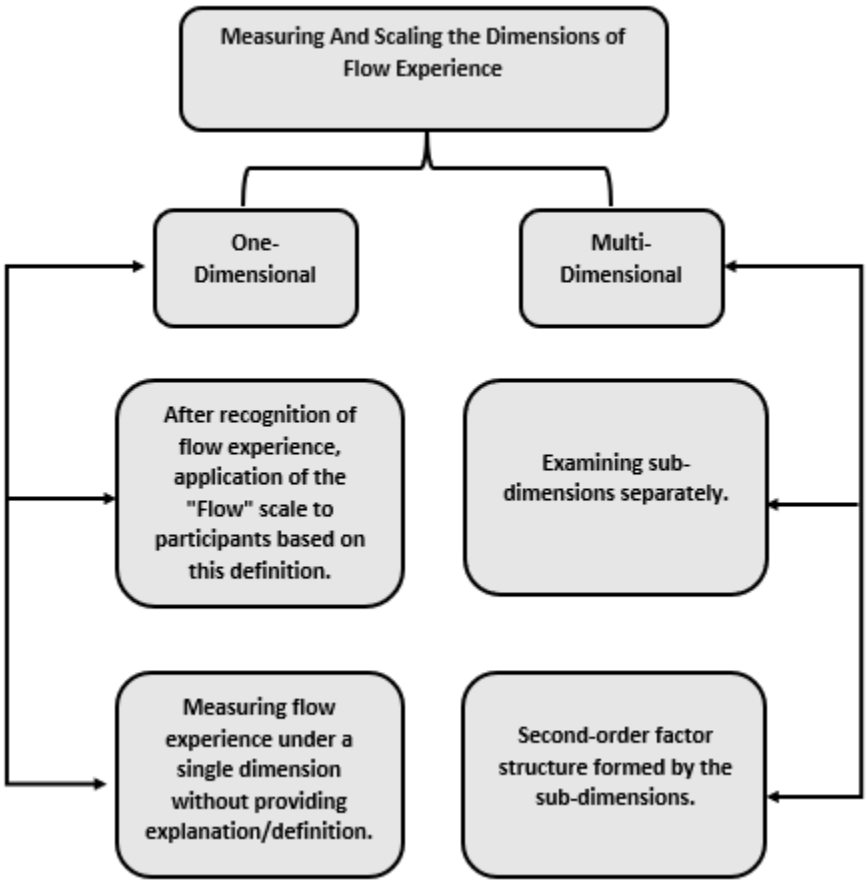


FIGURE 11: MEASUREMENT AND DIMENSIONALITY OF FLOW EXPERIENCE

Source: *Author`s own development*

Studies that measure flow experience with a single dimension can be divided into two categories. In the first type of studies, the definition/explanation of "flow experience" is provided at the beginning of the scale, and then participants are asked to answer the given questions or determine their level of agreement with the statements according to these explanations. In the other type of studies, flow experience is measured under a single dimension without any explanation. Examples of scales that ask questions to participants about their experience after the explanation are the scales developed by Novak et al. (2000).

There are two types of studies that measure the flow experience with a single dimension. In the first type, the definition/explanation of the "flow experience" is given at the beginning of the scale, and then the participant is asked to answer the given questions or determine their degree of participation based on these explanations. In the other type of study, the flow experience is measured under a single dimension without any explanation. As an example of the scales that ask questions to the participant about the experienced flow after the explanation, Novak et al. (2000) scales can be given.

In other one-dimensional scales found in fewer studies (Skadberg and Kimmel, 2004; Gao and Bai, 2014; Pearce, 2005; Liu et al., 2016), "flow experience" is attempted to be measured under a single dimension without any explanation. Studies that measure the flow experience as multidimensional are also divided into two types. In some of these studies, flow is examined as a second-order factor formed by the combination of sub-dimensions, while in others, it is examined on a sub-factor basis separately.

2.4. Affective Experiential State (AES)

The affective experience in online shopping refers to "the production of a person's emotional state, feelings and emotions, encompassing their affective system," and is a component of the overall online customer experience that leads to an emotional connection between the customer and product, service, brand, or organization (Gentile, Spiller & Noci, 2007; Rose, Clark, Samouel & Hair, 2012). Early studies only focused on the cognitive aspect of online customer experience (Hoffman & Novak, 1996), but later researchers also conceptualized the affective component

(Gentile, Spiller & Noci, 2007; Rose, Clark, Samouel & Hair, 2012; Marchin, Mortimer, & Andrews, 2015).

For this study, the conceptual model was developed by considering two new antecedents for the affective experiential state based on focus group discussions with online shoppers. The two antecedents of the affective experiential state are: (a) previous shopping experience and (b) online retailer reliability (Rose, Clark, Samouel & Hair, 2012).

Rose et al. (2012) assume that there is a relationship between cognitive and emotional components of Online Customer Experience (Rose, Clark, Samouel, & Hair, 2012), and Gentile et al. (2007) define the Cognitive Experiential State as a component of Online Customer Experience that is related to customer thinking or conscious mental processes and the Emotional Experiential State as a component of Online Customer Experience that includes the individual's emotional system through the production of emotions, feelings, and moods (Gentile, Spiller, & Noci, 2007, p. 398). The Cognitive Experiential State is stated to be influenced by the Emotional Experiential State in the context of Online Customer Experience, and it also provides a new contribution to the understanding of Online Customer Experience. In previous studies, three behavioral outcomes of Online Customer Experience have been defined: Satisfaction, Trust and Repurchase Intent (Ha & Perks, 2005; Janda & Ybarra, 2005; So May, Wong, & Sculli, 2005; Jin, Park, & Kim, 2008; Ranaweera, Bansal, & Mcdougall, 2008).

It is assumed that the five antecedent variables shape the affective experiential state of online customer experience. These antecedent variables are: (1) ease of use, (2) personalization, (3) connectedness, (4) aesthetics, and (5) perceived benefits.

Since this study uses a modified version of Rose et al. (2012) model to explore consumers' e-commerce experiences, we are going to talk about the elaboration of the six constructs (Skill, Challenge, Cognitive Experiential State, Affective Experiential State, Online shopping satisfaction, Online repurchase intention) used in this study. Online customers have stated that shopping online has many advantages compared to traditional shopping (e.g. more convenient, cost-effective, time-saving, wider choice of products, etc., Kim, Zhao & Yang, 2008, p. 546).

A positive online shopping experience is strongly linked to attitudes toward the internet as a shopping environment, perceived benefits, and likelihood of shopping online (Corner, Thompson,

Dillon & Doolin, 2005). The importance of perceived benefits is evidenced by its link to brand trust and brand loyalty which mediates brand participation (Ha H., 2004). According to Rose et al. (2012) these findings are valuable in exploring online customer experience as they suggest that reward and positive feelings (i.e. positive emotion) can support the online brand (Rose, Hair & Clark, 2011).

One of the most important reasons for the preference of storeless retailing is the price advantage offered (Shankar, Smith & Rangaswamy, 2003). On the other hand, it is one of the components of perceived value. In this light, perceived value is defined as a complex component consisting of price, quality, benefit, risk and sacrifice. Perceived value is the result of the combination of the cost to the customer and the benefits provided by the product and it affects the customer's intention to purchase and behavior (Lai, Griffin & Babin, 2009). If the perceived value is low, they will become more inclined to purchase products from competing brands in order to raise the value (Parasuraman & Grewal, 2000; Sirdeshmukh, Singh, & Sabol, 2002; Srinivasan, Andersona, & Ponnavolub, 2002).

2.5. Online Customer Experience Component Variables and Revealed Behaviors

The relationship between the cognitive and affective components of online customer experience is assumed by Rose et al. (2012), who then state that the cognitive experiential state is "connected to conscious mental processes," while the affective experiential state contains "feelings and emotions, comprising the emotional system of the individual" (Gentile, Spiller, & Noci, 2007, p. 398).

The interactions between cognitive and affective can vary (Tsal, 1985; Zajonc & Markus, 1985). Cognition has been found to influence a person's emotional state in a marketing context (Bagozzi, Gopinath, & Prashanth, 1999). Emotion can affect how information is encoded and retrieved from memory by consumers, and an individual's emotional state can create the best remembered "state-dependent learning" condition for information learned under the same emotional state (Bower, 1981). Findings also show that affective processing influences judgments and decision making (Pham, 2004). Bagozzi et al. (1999) follow this by stating that the cognitive experiential state is

influenced by the affective experiential state in the context of online customer experience, and it provides a new contribution to the understanding of online customer experience. The cognitive and affective experience components lead to three behavioral outcomes: satisfaction, trust, and intention to repurchase (Rose et al., 2012).

Customer Satisfaction: Customer satisfaction can be defined as the level of adequacy between an individual's expectations prior to a purchase and what they actually receive after the purchase (Vavra, 1997; Bayuk & Küçük, 2007), or as the overall level of satisfaction experienced by the customer during the entire purchase process on an e-retailer's website, including before, during, and after the purchase (Sharma, Grewal, & Levy, 1995).

Satisfaction has been viewed from different perspectives: one is the paradigm of unfulfilled expectations (Oliver & Desarbo, 1988; Tse & Wilton, 1988; Yi, 1990), while the other is associated with satisfaction with behavioral support (Bhattacharya & Srivastava, 2018). There are two popular approaches to satisfaction research, one being product-specific satisfaction studies, and the other being cumulative or general satisfaction. A positive customer experience leads to higher satisfaction, which in turn leads to repeat visits, increased spending, and a higher intention to make repeat purchases (Grewal, Levy, & Kumar, 2009).

Studies on customer satisfaction in the field of online customer experience have shown that both cognitive and affective experience play a role in creating customer satisfaction (Homburg, Koschate, & Hoyer, 2006; Jin & Park, 2006; Khalifa & Liu, 2007; Rose, Clark, Samouel, & Hair, 2012; Marchin, Mortimer, & Andrews, 2015) and positively impact the intention to make repeat purchases online (Rose, Clark, Samouel, & Hair, 2012; Marchin, Mortimer, & Andrews, 2015).

Skill: Technological ability is the capacity to engage with various electronic networks and data processing technologies (Grant, Clarke & Kyriazis, 2007). Ability acquisition is the mastery of using the internet by the customer (Klein & Ford, 2002). This is particularly defined as the ability to navigate and interact with a website and is strongly linked to the customer's cognitive state. Based on the assumption that learning by doing is related to the development of internet skills, it is proposed that ability improves over time through experience (Lehto, Kim & Morrison, 2006).

Challenge: General online customer experience is considered one of the antecedents of cognitive experience (Pelet, Ettis, & Cowart, 2017; Ghani & Deshpande, 1994; Ghani, Supnick & Rooney, 1996; Trevino & Webster, 1992; Hoffman & Novak, 1996; Rose, Clark, Samouel, & Hair, 2012; Marchin, Mortimer, & Andrews, 2015). Difficulty expresses a level of anxiety triggered by the perceived complexity associated with a customer's web browsing skill, which can positively affect their engagement and exploratory behavior (Novak, Hoffman & Yung, 2000).

Trust: The latest area of consumer experience in online shopping is related to the concepts of risk and trust (Corbitt, Thanasankit, & Yi, 2003; Jarvenpaa, Tractinsky, & Vitale, 2000; McKnight & Chervany, 2001; Tan & Sutherland, 2004; Van Der Heijden, Verhagen, & Creemers, 2003). Rose et al. have expressed that these two concepts are closely related in the literature (Rose, Hair, & Clark, 2011). Trust is highly important because it helps customers overcome perceptions of uncertainty and risk. These perceptions are particularly noticeable when shopping with an unfamiliar business or when providing personal information. Therefore, trust is crucial in e-commerce (McKnight, Choudhury, & Kacmar, 2002a, p. 335). The concept of trust can be defined as a process that encompasses the consumer perception of how well a website meets expectations, the credibility of its information, and the degree to which its commands can be trusted (Yichen & Yi, 2010, p. 1-2). A general definition for trust in online interactions is "the expectation of security from the exploitation of risks in an online environment" (Beldad, Jong, & Steehoulder, 2010, p. 860).

Trust is generally developed through a repeated process of user experiences and meeting expectations while visiting a site, and therefore should be considered a process rather than a one-time occurrence (Urban, Amyx, & Lorenzon, 2009). Customer trust is seen as a significant factor in customer loyalty (Chaudhuri & Holbrook, 2001; Garbarino & Johnson, 1999). It is defined as the set of beliefs felt by the customer regarding the specific characteristics known about the e-seller, as well as the seller's future actions (Eid, 2011). Online trust has a positive impact on online purchasing intention. Consumers are more likely to purchase from online businesses if they trust that the business can carry out transactions effectively (Kuan & Bock, 2007).

Perceived risk: Perceived Risk is defined as uncertainty encountered by customers when they cannot predict the outcomes of their purchase decisions (Schiffman & Kanuk, 2002). The difficulties encountered by customers in being unable to touch and examine products during virtual purchases also contribute to an increase in perceived risk in the online environment (Miyazaki & Fernandez, 2001; Lim, 2003).

Online Repurchase Intention: Intent is a reliable determinant according to the theory of reasoned action, the theory of planned behavior, and the technology acceptance model (Bhattacharya & Srivastava, 2018).

Online repurchase intent is defined as "the reuse of the online channel to purchase from a specific retailer" (Khalifa & Liu, 2007). Online purchase models describe the importance of repeat customers in e-retailing. Rose et al. (2012) and Khalifa & Liu (2007) include "online repurchase intent" as the outcome variable and find a relationship between online shopping experience, online shopping satisfaction, and online repurchase intent.

Customer satisfaction is the fundamental driving force of loyalty in a retail context (Cronin, Brady, & Hult, 2000) and is considered a precursor to repurchase intent (Mittal & Kamakura, 2001; Seiders, Voss, Grewal & Godfrey, 2005). This relationship has been validated in an online context (Ha, Janda, & Muthaly, 2010; So May, Wong, & Sculli, 2005; Rose, Clark, Samouel, & Hair, 2012; Marchin, Mortimer, & Andrews, 2015).

Satisfaction, trust, and repurchase intent also establish a new connection between the cognitive and affective experimental states and repurchase intent. The cognitive and affective experimental states do not directly affect repurchase intent, but rather act as an important mediator through customer satisfaction. Satisfaction has both direct and indirect relationships with repurchase intent through trust (Ha, Janda, & Muthaly, 2010).

2.5.1. Online Customer Experience

Online Customer Experience is a psychological state that arises as a subjective response to an e-retailer's site (Gentile, Spiller, & Noci, 2007; Meyer & Schwager, 2007). Online Customer Experience has been defined from different perspectives (Rose, Hair & Clark, 2011). In the

literature, the concept is referred to with different terms such as 'internet experience' (Nysveen & Pedersen, 2004), 'online experience' (Christodoulides, De Chernatony, Furrer, Shiu & Abimbola, 2006), (Novak, Hoffman & Yung, 2000), 'website brand experience' (Ha & Perks, 2005), 'online purchase experience' (Jin & Park, 2006) and 'online shopping experience' (Khalifa & Liu, 2007).

According to Hair, Rose & Clark (2009), the definition of Online Customer Experience should include emotional processing elements if it is to be built on the conceptualization of Customer Experience in an offline context. For this reason, in this context, the structure of Online Customer Experience is assumed to consist of both cognitive and emotional states, as suggested by Carbone and Haeckel (Carbone & Haeckel, 1994).

Virtual environments are found in web 2.0 technology where customers and companies co-create experiences (Kohler, Fueller, Matzler & Stieger, 2011). Given the importance of the online context in almost all companies, brands focus on creating positive customer experiences to gain a competitive advantage and customer loyalty (Badgett, Boyce & Kleinberger, 2007). Customer experience is an important strategic goal for many companies (Johnston & Kong, 2011). They argue that customer experience has cognitive, social, emotional, and physical nature (Verhoef et al., 2009). Customer experience is not only related to hedonic consumption, but also part of utilitarian value (Vargo & Lusch, 2006). The increasing trust in digital devices that facilitate consumers' social connections, opinion leaders, online recommendation engines, and shopping activities is continuously improving the online shopping experience (Cheung, Liu & Lee, 2015). Industry data reports that the adoption of tablets and smartphones continues to grow, and that customers are using these devices to shop online (Siwicki, 2014)

A successful integrated online marketing strategy helps companies to better connect and interact with customers, and to follow the customer throughout the entire relationship cycle. The shopping experience is a result of several factors, including the information and entertainment obtained from technological devices. For example, mobile applications have the potential to personalize the customer's shopping experience. However, there is limited understanding of how mobile customers use their information and how their behaviors differ from previous desktop/laptop computer users (Nicholas, Clark, Rowlands & Jamali, 2013).

It is important to design smart phone applications, social network pages, web pages, and mobile-friendly web pages based on user expectations and demands. In this way, these devices can convince customers to continue virtual interactions with the company. Research on mobile user interaction (Kim, Kim & Wachter, 2013) emphasizes the importance of both functional and hedonic aspects of user experience design. The same researchers highlight that applications with user-friendly and intuitive features increase user value, satisfaction, and interaction. For example, smart phones allow users to control when, where, and how they participate in selected activities that serve their needs. Customers believe that mobile devices allow them to save time, complete tasks (utilitarian), entertain themselves (hedonic), and connect with others (social). Therefore, companies must focus on different functional aspects that are important to the customer as the primary feature of the integrated design.

Novak et al. first proposed an online consumer browsing model using the concept of "flow" as a psychological motivational structure. Flow refers to a sense of uninterrupted online browsing, manifested by internal pleasure and a lack of self-awareness (Novak, Hoffman & Yung, 2000, p. 24).

Due to the multidimensionality of Customer Experience, different researchers have studied its different dimensions; for example, Customer Experience consists of the customer's cognitive, affective, social and physical responses to the retailer and future customer experiences are guided by past customer experiences (Verhoef et al., 2009); Customer Experience takes place through interaction at every possible point of contact between the customer and the business (Grewal, Levy & Kumar, 2009).

Online shopping experience is a complex, holistic and subjective process arising from interactions between consumers and the online environment (Trevinal & Stenger, 2014). The customer is not just a rational, cognitive being (Shiv & Fedorikhin, 1999), it is argued that recognizing both cognitive and emotional and their interaction is a more appropriate approach (Hansen, 2005). The role of emotional responses in consumer behavior is now well known. Hansen defines emotion as a response to a stimulus and in an online context, the stimuli are the components of the website the customer is exposed to. Additionally, the result of cognitive and emotional processing is said to shape the individual's attitudes and beliefs (Hansen, 2005). In terms of customer experience, it

is suggested that emotional and affective processing leads to longer-term relationships in memory (Edvardsson, 2005).

Based on this perspective, Schmitt introduced the term "experiential marketing", a paradigm shift from focusing on the product's features and benefits (Schmitt, 1999). The interaction of customers' cognitive and emotional emotions ultimately creates "enjoyable experiences". The main elements of Schmitt's framework are strategic experience types and factors causing the experience. There are five types of customer experiences. The first is sensory experiences related to the senses, the second is emotional experiences related to feelings, the third is creative cognitive experiences related to thinking, the fourth is physical experiences related to movement, behaviors and lifestyle, and the fifth is experiences related to social identity based on reference groups or culture (Schmitt, 1999).

Berry et al. state that the total customer experience is a component of the overall value creation process and that the company must create suitable "cues" in the purchase environment to create the desired emotional aspect of the experience (Berry, Carbone, & Haeckel, 2002). The total customer experience is defined as the interaction that occurs at various levels of the consumption chain with a different marketing proposal experienced positively, related, continuous, social, physical, and emotionally by the customer and supplier (Mascarenhas, Kesevan & Bernacchi, 2006). Furthermore, superior customer experience and customer loyalty can be produced by designing cognitive and sensory stimuli in the shopping environment (Berry & Carbone, 2007). Personalized customer experience is a critical component of the overall value creation process (Prahalad & Ramaswamy, 2004).

The literature in general shows that online customer experience is not only created through the flow path, but also by cognitive and emotional experience (Rose, Clark, Samouel, & Hair, 2012; Marchin, Mortimer, & Andrews, 2015). There are numerous online studies that can help us determine the possible reasons for the online customer experience. These primarily focus on three areas.

Firstly, there is a literature that looks at website quality, including the development of measurement tools (Kaynama & Black, 2000, pp. 63-88; Loiacono, Watson, & Goodhue, 2002, pp. 432-438; Shchiglik & Barnes, 2004, pp. 17-25). This group of studies defines a number of factors or dimensions that lead to effective website performance.

Secondly, there is a focus on online customer behavior, particularly in relation to online search and purchase (Cases, 2002; Cheung, Liu & Lee, 2015; Childers, Christopher, Peck, & Carson, 2001; Grant, Clarke, & Kyriazis, 2007; Johnson, Moe, Fader, Bellman & Lohse, 2004; Klein & Ford, 2002; Kumar, Lang, & Peng, 2005). Early studies by Bellman et al. attempted to determine whether certain personal factors, such as having limited time or adopting "wired technology," were predictors of online purchasing behavior (Bellman, Lohse, & Johnson, 1999, pp. 32-38). Research aimed at identifying the antecedents of consumer intention to use the internet for purchasing has highlighted the importance of factors such as online experience (in terms of frequency) and trust in the environment (George, 2002, pp. 165-180). A number of effective factors, including perceived customer service and shopping experience, have been found to be associated with online shopping attitudes and intentions, including risk (Vijayasarathy & Jones, 2000, pp. 191-200).

Thirdly, online service experience makes a significant contribution to the literature (Kaynama & Black, 2000; Khalifa & Liu, 2003; Lee & Lin, 2005). The internet provides a range of online services and they have been researched. These services include online banking, news and weather, travel reservations, education programs, access to blogs and similar information communities.

These three literatures demonstrate that consumers interact with the internet during various activities and lead to a range of different behaviors and eventually experiences. It is suggested that the benefits provided to online customers result in a stronger and proactive customer by changing the balance of power within the business-customer relationship (Moynagh & Worsley, 2002).

The first fundamental difference between online customer experience and offline compared is the degree of personal interaction that extends from the context of intensive face-to-face communication to the online structure where communication is absent. Personal interaction provides a rich source of communication that will produce subjective responses. Secondly, there

are differences in the way information is presented in both contexts. Online context provides rich information while this might be limited in face-to-face communication or may arise in a variety of communication types (e.g. brochures, posters, customer sales representatives). The third distinction is time frame. Customers can make online purchases in one go and from a location that suits them, especially through mobile device web access. In the face-to-face communication context, customer interactions are defined and restricted by business working hours (although this is increasingly expanding in today's times). Finally, there may be differences in how the brand is presented. Online, the brand is mainly presented visually and auditorily, while offline, there are opportunities to experience the brand through various works, such as personnel and presentations, buildings and facilities, vehicles, uniforms, and other tangible elements. Table 4 provides a comparison of these fundamental contextual differences (Rose, Hair, & Clark, 2011).

TABLE 4: ONLINE – OFFLINE CUSTOMER EXPERIENCE COMPARISON

	Offline Context	**Online Context**
Personal Communication	High to Medium	Low
Providing Information	Density Varies According to Different Tools	Intensive
Interaction Time	Determined by the business	Determined by the consumer. Anytime, Anywhere
Brand Presentation	The tangible range of devices used to present the brand.	Visual - Audio

Source: *(Rose, Hair, & Clark, 2011, pp. 24-39)*

2.6. User Experience and its Stages

The concept of "user experience" gained popularity with Donald Norman's self-identification as a "user experience architect" at Apple in 1993 (Knemeyer & Svoboda, 2006). In an interview, Norman explains the designation as, "I coined the term because the terms human interface and usability were too narrow. I wanted to encompass all aspects of the person's experience with a system, including industrial design, graphics, the interface, and physical interaction" (Norman, 2007). The idea is that, regardless of what service or product a customer purchases, they will have some kind of experience, be it good, bad, or average. Services always come with an experience, and despite the possibility of a product or service being average, all service encounters offer an opportunity for emotional involvement. In this context, experience is personal because it exists only in the customer's mind. Therefore, it can be said that two people cannot have the same experience (Johnston & Kong, 2011).

Previous consumer behavior researchers focused on a cognitive and rational information processing model that viewed consumers as rational entities during the purchasing process (Bettman, 1979). However, later studies have centered on contents with a hedonic perspective. Holbrook and Hirschman pioneered the “experiential” view of consumption that focuses on symbolic, hedonic, and aesthetic factors associated with consumption and broadened this perspective (Holbrook & Hirschman, 1982). This view of consumption helped to explain impulsive buying and unplanned and compulsive purchasing, which previous views failed to do.

The user experience is realized when the user interacts with a business and its activities. The outcome of the customer experience is the formation of a "take-away impression" that is stored in the customer's long-term memory and is a result of the interaction (Carbone & Haeckel, 1994). This "take-away" is seen as a perception formed by the combination of many sensory inputs received during the encounter and retained in the customer's mind. The formation of the impression is based on the individual's interpretation of sensory information from the external environment and is highly personal in nature (Carbone & Haeckel, 1994).

It is important to provide a joyful experience because this experience triggers customer satisfaction, customer loyalty, changing of expectations, trust, support for the brand, and creation of emotional connections with customers (Johnston & Kong, 2011). The experience can be much

more effective if it is realized in a way that takes customers out of their routine and makes unexpected surprises (Arnould & Price, 1993). The effects of positive customer experiences are not just a one-time event; these effects start to repeat more often. Although the effects are primarily visible sporadically, they later become more consistent and predictable from the customer's perspective. Furthermore, both customers and employees generally trust the company on this matter and think that their concerns about the realization of the experience will be addressed by the company (John, 2009).

Therefore, some of the most important reasons for consumer experiences playing a determining role in consumer preferences are their ability to be remembered and to be open to interaction and sharing. Providing consumers with interesting, and sometimes even unusual experiences that they can tell others about has become increasingly important for brands. As a result, brand loyalty will be greater (Batı, 2012, pp. 53-56). When a company wants to acquire a person as a customer, the experience begins to occur when the service provided is used as a stage and the products are used as supporting materials for that stage. Companies that reap the economic value of the experience not only win the hearts of their customers, but also the financial value that comes from these customers (Pine & Gilmore, 1998). Studies show that people make decisions based on experiences more easily and feel happier (Carter & Gilovich, 2010; Van Boven & Gilovich, 2003).

The customer experience, which is evaluated as a value factor, is defined as a collection of economic values that has gained importance in recent years, different from the service and product (Pine & Gilmore, 1999). From the marketing perspective, customer experience is important for defining, positioning, differentiating from competing brands, and creating brand loyalty for consumers. On the other hand, it contributes to making good choices, taking appropriate purchase decisions, and bringing the brand to a transparent and acceptable position, regardless of its perceived price in the consumer's mind (Joseph, 2010).

If the customer perceives the experience as inconsistent, it can create trust issues with the brand (Ghose, 2009). Therefore, the relationship between the brand and customer and the experience

provided must be consistent and follow a certain line. Schmitt stated that customer experience consists of five stages (Schmitt, 1999):

Analysis of the Customer Experience World: Organizations take into consideration the inner world of their customer and thus reach an agreement. They evaluate the customer's desires within their socio-cultural structure.

Establishing an Experiential Platform: A connection between strategies and activities is aimed to be established. An analysis is made of what kind of features should be present between the experiences that customers want to live and the promises or experiences offered.

Brand Experience Design: Products or services are designed in a way suitable for customers to experience personalized experiences.

Structuring Personal Relationships with the Customer: Efficient operation of all communication channels to maintain constant communication with the customer.

Continuous Innovation Effort: The continuous renewal efforts of organizations or brands through positive or negative experiences lived by customers.

2.7. Expectation Confirmation Theory (ECT)

As a theoretical framework originally developed in the context of technological products, the Expectancy Confirmation Theory (Oliver, 1980) posits that satisfaction is directly influenced by confirmation of beliefs, expectations and perceived performance. It also explains the relationship between users' intention to continue using information technology systems and their repurchase intentions. The model seeks to investigate the factors that impact the satisfaction levels experienced by consumers following product usage, and to analyze the process that ensues until the intention to repurchase is formed (Oliver, 1980; Churchill & Surprenant, 1982; Dabholkar et al., 2000).

The Expectation Confirmation Model is the application of the expectation confirmation theory that states that the satisfaction and likelihood of repeat purchase after the consumer's post-purchase experience is related to their expectations and the perceived value of the product or service (Oliver, 1980). Model of this theory, as depicted in Figure 12, is used in psychology and marketing research.

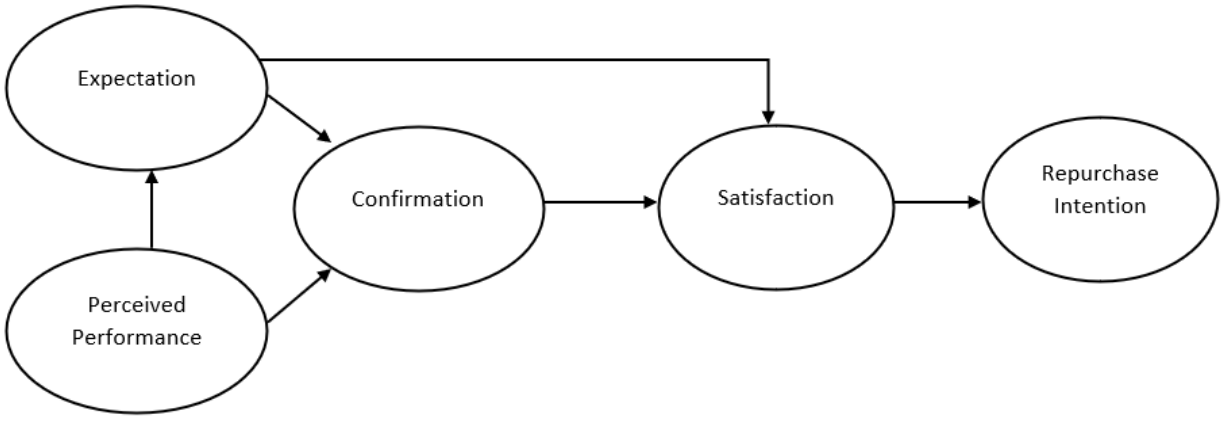


FIGURE 12: EXPECTATION-CONFIRMATION THEORY

Source: *(Oliver, 1980)*

The Expectation Confirmation Theory proposed by Oliver (1980) and is designed to identify the link between the level of satisfaction individuals derive from using technological products and their subsequent reuse. Specifically, the model posits that consumers' decision to continue using

products containing information technologies hinges on their degree of satisfaction with the product. The model associates individuals' continuance intention with technological products to variables such as expectation, perceived performance, disconfirmation, and satisfaction.

The Expectancy Confirmation Theory (Oliver, 1980) posits that consumers hold certain expectations when purchasing a product, and subsequently evaluate its performance post-consumption. The assessment of product performance, either positively or negatively, reflects the perceived benefit that consumers derive from the product. The model's core objective is to compare consumers' satisfaction levels with the perceived benefit from the product, and to ascertain the resultant continuance intention. In addition, the cognitive standards of the product are deemed critical in the model. As the Post-Acceptance Model of IS Continuance primarily pertains to technological products, consumers' decisions to continue using their technology systems resemble their purchasing decisions for the products in question (Bhattacherjee, 2001). This similarity has resulted in the development of the The Post-Acceptance Model of IS Continuance in Figure 13, which establishes a link between consumers' continuance intention towards technological products and their repurchase decisions (Bolen et al., 2017).

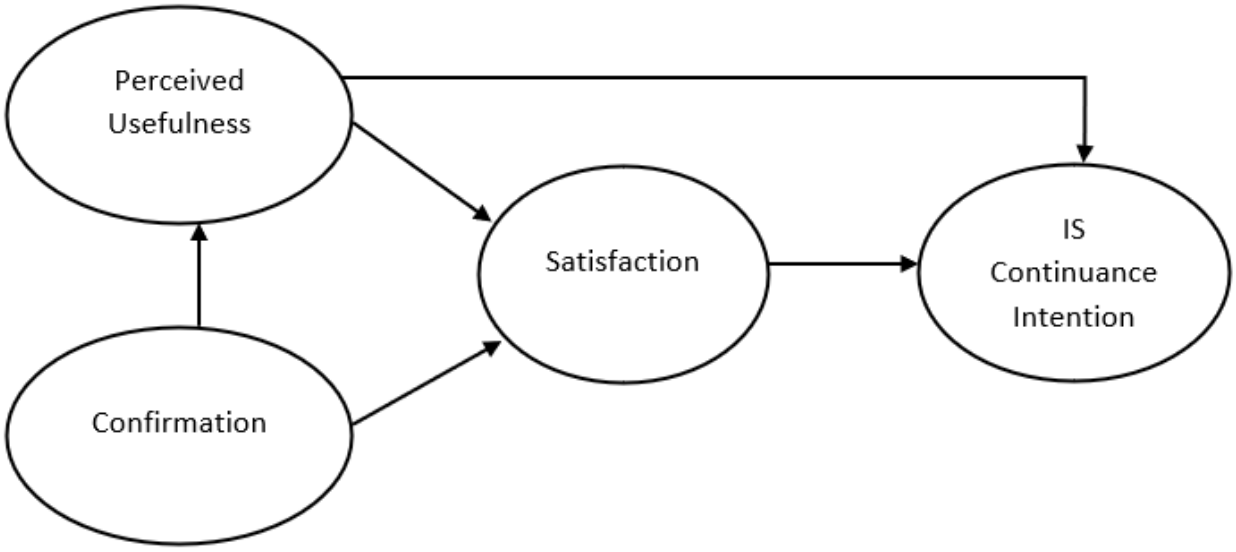


FIGURE 13: THE POST-ACCEPTANCE MODEL OF IS CONTINUANCE

Source: *Bhattacherjee, A. (2001*)

The development of the Expectation-Confirmation Theory was necessitated by the inability of models such as the Technology Acceptance Model developed by Davis (1989) and the Unified Technological Acceptance Model developed by Venkatesh and Davis (2000) to fully elucidate the concept of continuance intention. The Post-Acceptance Model of IS Continuance (Bhattacherjee, 2001)is grounded on a theoretical framework that encompasses three dimensions of user intent crucial for the continuance intention of is continuance: perceived usefulness, confirmation, and satisfaction. While the expectancy confirmation theory primarily focuses on pre- and post-consumption determinants, Hayashi et al. (2004) posited that the model pertains to the post-acceptance structure. Furthermore, The Post-Acceptance Model of IS Continuance analyzes the effect of post-consumption expectations, rather than pre-consumption expectations, and improves the theory by incorporating perceived usefulness.

Perceived usefulness, which is the foremost construct in technology acceptance models, pertains to individuals' attitudes towards the use of technological products. Davis (1989) defined perceived usefulness as the extent to which individuals perceive that using a product containing a certain information system contributes to their work performance. Gyampah and Salam (2004) argued that it represents individuals' belief that their work performance will improve as a result of using technological products. Perceived usefulness is included in The Post-Acceptance Model of IS Continuance as a result of the Technology Acceptance Model, whereby individuals' post-use perception of performance is incorporated as perceived usefulness. Mathieson (1991) and Taylor and Todd (1995) have posited that perceived usefulness constitutes distinct beliefs that impact information system acceptance behaviors in a broad spectrum of user populations. While perceived usefulness emphasizes the functional aspect of information technology use, it also has a significant influence on subsequent decisions to continue using information systems, since acceptance of information systems use is the primary motivator. Empirical studies comparing the relative effects of perceived usefulness at different stages of information systems use have concluded that perceived usefulness significantly impacts the use of information systems (Davis, 1989; Karahanna et al., 1999).

The Post-Acceptance Model of IS Continuance model posits that perceived usefulness, which refers to individuals' perception of the contribution of a technological product to reduce their workload, has a direct effect on both satisfaction and continuance intention. This direct effect can be attributed to the user experience-based approach of the model (Premkumar & Bhattacherjee, 2008). Empirical studies have also found that perceived usefulness significantly influences individuals' intention to use technological products (Venkatesh & Davis, 2000; Uyar, 2019). Furthermore, Uyar (2019) found that the benefit obtained from using technological products containing information systems has a positive effect on the intention to purchase and use the product, which is mediated by perceived usefulness. Therefore, the perceived usefulness factor plays a crucial role in shaping individuals' acceptance and continuance intention to use technological products.

According to the Expectation Confirmation Theory (ECT), consumers develop expectations about a product before purchasing it and after using it for a certain period of time, they form perceptions about its performance based on their initial expectations. By comparing this perception with their expectations before the purchase, consumers can determine to what extent their expectations have been met. Bhattacherjee (2001) found that when consumers' expectations are met, they experience a sense of satisfaction and intend to continue using or repurchase the product, while dissatisfied consumers have the opposite experience. Therefore, if the benefit obtained from the product meets the expected performance from the product after the purchasing behavior, consumers confirm the usefulness of the product. In The Post-Acceptance Model of IS Continuance, the confirmation variable indicates the extent to which the actual performance of the information system matches the performance expected by the consumers. As noted by Alraimi et al. (2015), consumer confirmation or disconfirmation of their intention to continue using a product can occur in three ways: meeting, exceeding, or falling short of their expectations. In situations where users do not have pre-use expectations of a product, the confirmation after the first use becomes critical (Hong et al., 2006). When individuals have low expectations before using information systems, their expectations for gains from information systems increase as they gain more experience with the system (Thong et al., 2006). This dynamic explains the effect of confirmation on consumers' expectations of the product after use. In The Post-Acceptance Model of IS Continuance, it is suggested that confirmation affects perceived usefulness and satisfaction. This is supported by

research by Venkatesh et al. (2011), Roca et al. (2006), and Hsu and Lin (2015). Satisfaction, which is defined as a pleasurable and positive emotional state that occurs as a result of individuals' evaluation of their work performance (Locke, 1976), was described by Oliver (1981) as the overall psychological state that emerges when the emotions experienced after the consumption experience are compared with emotions prior to the experience. Consumers who feel satisfied with the product are more likely to have an intention to repurchase or continue to use the product, while those who experience dissatisfaction develop a negative reaction towards the product. Therefore, if the consumer's expectations are met or exceeded as a result of their experience with the purchased product, confirmation will occur, and a sense of satisfaction will emerge as a result of this confirmation.

In the model, satisfaction is considered a crucial construct that represents the emotional fulfillment resulting from the meeting of consumer expectations concerning information systems. Satisfaction is recognized as a vital factor in establishing long-term customer loyalty and has the potential to increase customer retention even in challenging situations (Anderson & Sullivan, 1993). Satisfaction is considered a fundamental pillar of loyalty and is found to have a significant impact on continuance intention (Limayem, et al., 2007). Thus, this relationship between satisfaction and continuance intention constitutes the core of the model.

The intention to continue using information technologies is akin to the purchase intention of consumers for a product. The Post-Acceptance Model of IS Continuance emerged due to the alignment between consumers' purchase intentions and their continuance intention. The model incorporates three factors that influence users' intention to continue using a technological product, namely satisfaction, degree of fulfillment/confirmation, and expectations for benefits from use. Several studies have shown that individuals' intention to continue using e-learning is associated with their satisfaction levels, which in turn, are linked to perceived usefulness, information quality, validation, service and system quality, and perceived ease of use (Roca et al., 2006). The Post-Acceptance Model of IS Continuance asserts that users' intention to continue using information technologies is primarily determined by their satisfaction with the use of the technological product they have previously used (Bhattacherjee, 2001).

A prior study conducted by Inteco (1998) revealed that users discontinued the use of a technological product due to a negative experience and dissatisfaction stemming from slow access

speeds and congested communication lines. This highlights the importance of emphasizing satisfaction as a positive emotion that cannot be overlooked by users. The incorporation and validation of emotions as a significant predictor of purchase intention in models for the use of technological products reinforces the impact of satisfaction on purchase intention.

CHAPTER III - RESEARCH DESIGN AND METHODOLOGY

In this section, we discuss the research design and methodology employed in this study. We begin by exploring the research paradigm. The research approach is explained, outlining the specific methods and techniques used to gather and analyze data. Additionally, the research strategy employed to achieve our research objectives is discussed, including the overall plan and approach to data collection and analysis. We elaborate on the research method employed, providing insights into the specific techniques and tools used for data collection. The time horizon of the study is also explored, detailing the period over which data was collected and its implications on our findings.

Idefix.com, the website under scrutiny in this paper, is one of the leading players in the Turkish book market, the company calls itself "Turkey's Online Bookstore". Today, with its 23-year retail history, idefix.com offers a unique experience to consumers with its product categories in 205 stores located in 50 cities across Turkey. Idefix.com has a product portfolio that consists of books, turntables, records, electronics, hobby, and toys. The company describes itself as a platform that brings together its customers with entertainment and cultural products in a wide range of over 10 categories and over 200,000 product varieties.

Furthermore, we describe the convenient sampling, and procedures employed to select and recruit participants, as well as the steps taken to minimize bias. The development of the questionnaire and instruments utilized in data collection is described, including validity and reliability. Lastly, we delve into the PLS (Partial Least Squares) path modeling employed for data analysis, outlining the statistical techniques used to examine relationships among variables. Together, these components form a comprehensive understanding of the research design and methodology utilized in this study, ensuring a robust and rigorous approach to answering our research questions below;

1. **What is the mediating role of the affective experiential state (AES) in the relationship between flow experience (CES), online shopping satisfaction (OSS) and online repurchase intention(ORI)?**

2. **How do skills and challenges impact the affective and cognitive components of consumer experiences?**

3. **How the flow experience and experiential states drive consumers` repurchasing intention?**

3.1. Research Paradigm

This research methodology utilizes a positivist research paradigm (Schrag, 1992), which views the social world as an empirical phenomenon that can be explained through quantitative methods and systematic observation. Moreover, it demonstrates an appreciation for the complexity of the social world and attempts to objectively measure variables and quantify their relationships.

The online survey design and data collection, descriptive analysis, and PLS modeling all serve to ground the study in a positivist research paradigm, which sees social phenomena and human behavior as explicable through systematic observation and logical analysis to explore the relationships between different variables and assess their impact on online shopping satisfaction and repurchase intention.

3.2. Research Approach

There are two categories of research approaches, inductive and deductive. The approach of inductive reasoning involves the transformation of observations into theories through the expansion from specific to general. The collection and analysis of data are essential for the establishment and development of theories, phenomena exploration, and conceptual frameworks creation. This process facilitates the patterns identification (Catterall, 2000). On the other hand, the approach of deductive reasoning involves the deduction of hypotheses from existing theories within a specific field of study, the researcher then conducts data analysis to test the identified hypotheses as well as any prior assumptions and theories (Winterton, 2008). To confirm or disprove a theory, findings are required to be analyzed for consistency. If the findings are consistent with the theory, they are accepted and approved. However, if the findings do not align, in-depth clarification and justification are required and should be reported to account for the discrepancy. Since the current research concentrates on understanding customers' behavior toward online repurchasing intentions of books, Therefore, the approach of deductive reasoning is most likely relevant for this study.

3.3. Research Design

The research design is concerned with the overarching scheme of the research study (Catterall, 2000). The present study proposes a research methodology that entitles the researcher to utilize various data collection methods and analytical techniques to achieve research objectives.

The classification of research design can be based on its objectiveness, which include explanatory, exploratory, and descriptive research. Explanatory research designs include the creation of exact hypotheses about the study variables and the use of inferential statistical tests to assess the data and make inferences from the results (Comajoan and Salaberry, 2013). Through the process of describing a phenomenon and figuring out what causes it, one may discover new knowledge, get access to previously undiscovered information, and develop a better understanding of the interactions between the many parts of a phenomenon.

On the contrary, exploratory research is a research methodology that aims to gather information about a phenomenon in cases where limited data is available. Its primary objective is to develop a better understanding of the subject matter by exploring various aspects of the phenomenon. The primary aim of this research methodology is to gather preliminary data and develop familiarity with a specific phenomenon (Rowe and Clark, 1927).

Otherwise, descriptive research the present study employs a systematic methodology to observing and describing a particular phenomenon or behavior, commonly referred to as descriptive research. The objective of this type of study is to furnish data that can be utilized to establish causal relationships. The fundamental objective of descriptive research is to provide a precise analysis of the present condition of the connections being studied. While its aim is to analyze a specific scenario by identifying the essential factors associated with that situation, such as occurrences, mindsets, experiences, attitudes, and behaviors (Kelley, 2003).

Since this research aimed to investigate the various factors that affect online customers' intention to repurchase products or services, it adopted a descriptive design, implemented a survey method to obtain information on the behavioral patterns of online shoppers at a specific moment in time, instead of tracking changes in behavior over a prolonged duration. This survey, with its descriptive research design, suited the research framework by offering a comprehensive understanding of the phenomenon.

3.4. Research Strategy

The strength of quantitative and qualitative research methods to meet research objectives is dependent on their fit with the research context and objectives, ultimately leading to the success and effectiveness of research and its results, whether qualitative or quantitative (Zikmund and Babin, 2016).

The quantitative research approach involves the systematic collection, generation, and analysis of numerical data in a numerical format. This type of research utilizes a deductive approach between the researcher and the tested theory, allowing for the identification of the relationships between the collected outcomes and the tested theory (Bell, Bryman and Harley, 2019). While the qualitative research entails analyzing qualitative data, interpreting the data subjectively to build knowledge, and constructing a theory based on the gathered information. To accomplish this, the researcher uses various methods such as personal interviews, projective techniques, and focus group discussions, with the success of the research highly dependent on their observations and perceptions. This is connected to an interpretive philosophy that uses inductive methodology (Catterall, 2000).

The research strategy used in this study is based on post-positivist claims, which prioritize objective evaluation and quantitative measurement through statistical analysis. To provide a detailed description of a particular population's or phenomenon's characteristics, particularly of the online repurchasing intentions of customers and their behavioral patterns concerning online shopping, using a quantitative research methodology is deemed suitable for the present research as it aligns with the research objectives and promotes accuracy (Creswell, 2014). Additionally, the purpose of this study is to provide website managers with research-based suggestions, however findings cannot be generalized to the total customer population of online purchasing. Hence, due to its objectivity (Creswell, 2014), a quantitative approach is deemed suitable for the present study. As such, the researcher has implemented a quantitative research approach and applied a descriptive research design.

3.5. Research Method

Research methodologies are the techniques, instruments, and procedures used to conduct research (Walliman, 2011). Techniques refer to the instruments or means of a tool and its use. On the other hand, instruments are tools applied to gather information in a research field; suchlike instruments are surveys, observation, and experimentation. Nevertheless, in the course of scientific inquiry, researchers employ diverse methodologies and techniques to gather data, conduct statistical analyses, and evaluate findings. Numerous researchers apply a combination of techniques to optimize data acquisition and enhance its quality and validity.

In this research we used a convenience sample with an online Qualtrics survey and employed multi-item scales for construct assessment. The validity of the research was assessed by interviewing a pilot sample (n=30 online shoppers), and the data was analyzed using SPSS V25 and SmartPLS 3.2. The questionnaire included tested and validated scales that were slightly adapted to the study, such as changing "the Internet shopping website that I regularly use" to “the idefix.com website”. The sample size was larger than past studies and the descriptive analysis was conducted via SPSS V25. The model was tested with PLS-SEM and SmartPLS 3.2.

3.6. Time Horizon

A web-based Qualtrics survey was administered over four months, starting in November 2022 and ending in February 2023, to gain further insight into the current trends associated with a research topic. Selected participants were asked questions related to their attitudes, beliefs, and practices to capture potential changes or patterns in their responses over time that could help guide future research and provide an understanding of the current state of the research field. Data from the survey is analyzed to compare results across multiple points in time; to uncover correlations between any variables assessed.

3.7. Population, Sampling, and Procedures

The target population of this study was Turkish consumers aged 25-44 years old who had purchased at least one product on the idefix.com platform in the previous year. The data was collected through a convenience sample of 649 participants using an online Qualtrics survey. The survey was conducted in Turkish, with a completion time of less than 10 minutes to limit respondent fatigue. The validity of the research was assessed by interviewing a pilot sample of 30 Turkish friends and family members who were asked about their online purchasing experiences on the idefix.com platform. The sample size was larger than in Rose et al. (2012), with 61.1% of respondents aged between 25 and 44 and 65.8% of those being female.

The survey consisted of multi-item scales for construct assessment, designed following Diamantopoulos et al. (2012) evidence-based guidelines. The constructs assessed included Skill, Challenge, Cognitive Experiential State, Affective Experiential State, Online Shopping Satisfaction, and Online Repurchase Intent.

Data gathering started 10 days after the survey link was shared on different online and social media platforms used by Turkish consumers. The descriptive analysis was conducted using SPSS V25 and Partial Least Scale Structural Equation Modeling (PLS-SEM). SmartPLS 3.2 was also used to test the assessment and structural model.

3.8. Questionnaire Development

The questionnaire development consisted of multi-item scales designed to assess the six constructs being studied: Skill, Challenge, Cognitive Experiential State, Affective Experiential State, Online Shopping Satisfaction, and Online Repurchase Intent. The data was collected using an online Qualtrics survey conducted in Turkish with a completion time of less than 10 minutes. Data analysis was conducted using SPSS and PLS-SEM, with SmartPLS 3.2 also used to test the assessment and structural model.

The questionnaire used in this research was designed in accordance with evidence-based guidance with multi-item scales for construct assessment. The six constructs (Skill, Challenge, Cognitive Experiential State, Affective Experiential State, Online shopping satisfaction, online repurchase intention) used in the study were built on prior literature and tested to ensure scale reliability. The constructs were all rated in accordance with statements on a 5-point scale (1 = strongly disagree, 5 = strongly agree). To assess validity, the first author interviewed a pilot sample (n = 30) of Turkish friends and family members who were asked about their online purchasing experiences on the idefix.com platform. Skill was assessed with four items, Challenge with two items, Cognitive experiential state (flow) with a single item from (Rose et al., 2012), Affective experiential state with three items, Online shopping satisfaction with four items and Online repurchase intention with four items. The questionnaire only included tested and validated scales that were slightly adapted to the study, such as changing "the Internet shopping website that I regularly use" to “the idefix.com website”.

3.9. PLS Path Modeling

The research employed a PLS-SEM approach to accomplish data analysis, examine hypotheses, and validate the research model. This technique involves both measurement and structural models, which depict the links between latent variables and their related item indicators, as well as the associations among latent variables. PLS utilizes multiple linear regressions and the ordinary least squares estimation technique for path analysis (Barclay, Higgins, & Thompson, 1995; Chin, 1998). Furthermore, the PLS approach necessitates less rigorous assumptions on multivariate normality and works well with small sample sizes in comparison to SEM (Chin, 1998). Consequently, the study concluded that PLS-SEM is the most suitable technique for data analysis and model testing. This research methodology uses PLS-SEM to explore the relationships between skill, challenge, cognitive and affective experiential states, online shopping satisfaction, and repurchase intention (Novak, Hoffman and Yung, 2000; Rose et al., 2012; Saha et al., 2022). The overall fit of the model is tested using SmartPLS 3.2 (Ringle, Wende and Becker, 2015).

CHAPTER IV - HYPOTHESIS DEVELOPMENT

As said previously, e-commerce has emerged as a driver of business growth and innovation. With the development of information communication technology, online shopping has become an integral part of the retail industry. As the popularity of online shopping is foreseen to grow, it is important to understand the factors that influence consumer behavior in online shopping.

In this thesis, we propose a conceptual model that describes the relationship between various factors that affect online customer experience and subsequent behaviors. Our model includes four experiential states - skill, challenge, affective experiential state, and cognitive experiential state as well as online shopping satisfaction and online repurchase intention.

Drawing on the overarching flow theory, we formulate ten hypotheses that test the relationship between these factors. Flow theory, as proposed by Csikszentmihályi (1975, 1990), suggests that optimal experiences occur when individuals are fully engaged in an activity and experience a sense of control, enjoyment, and involvement.

As mentioned in the previous chapter, to develop our model, we draw inspiration from Rose et al.'s (2012) study on online customer experiences in e-retailing. We simplify the 15 concepts in the original model into a 6-concept model, and we assume that the conditions of flow (skill and challenge) can affect both the flow itself and the emotional component of the online customer experience.

The purpose of this study is to contribute to the understanding of online customer experience and behavior in the e-commerce environment.

4.1. Theoretical Model and Hypothesis Development

Before presenting our model, we provide a comprehensive overview of the key concepts (Table 5). Following this, we present the arguments that support the twelve hypotheses we intend to test.

TABLE 5: RESEARCH CONCEPTS AND DEFINITIONS

Concept	Definition
Challenge	The degree to which the use of online shopping websites represents a challenge for consumers' abilities and the effort needed to overcome it (Gunness and Oppewal, 2020).
Skill	A learned ability and expertise to understand and resolve a task. Here, skill is referred to as the use of the Internet with proficiency and ease (de Almeida et al., 2018).
Cognitive Experiential State (CES) = Flow	The 'flow' experience referred to in Rose et al. (2012) and understood as a cognitive state involving an individual fully absorbed and mentally immersed in the activity that he/she is doing at the moment (Csikszentmihalyi, 1990).
Affective Experiential State (AES)	An affective state that elicits emotions and moods during an experience (Rose et al., 2012).
Online Shopping Satisfaction (OSS)	Contentment of the consumer with respect to their prior online shopping experience on a specific website or vendor (Rose et al., 2012).
Online Repurchase Intention (ORI)	Consumers' volitional commitment to (re)use the same online shopping website and vendor (Khalifa and Liu, 2007).

***Source*:** Authors' own development

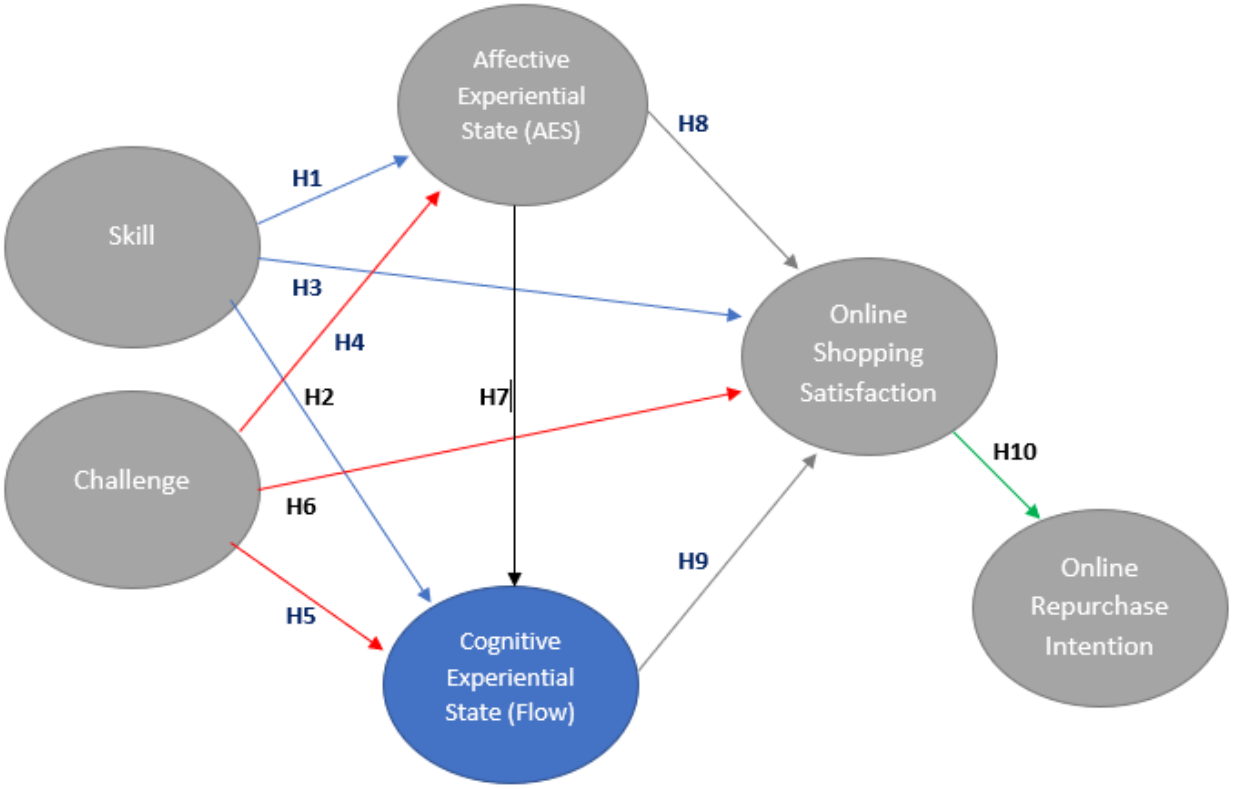


FIGURE 14: RESEARCH MODEL

Source: *Edited by Author*

The research model is shown in Figure 14. In the following section, we provide a detailed description of the model and hypotheses.

We also assume that the emotional component mediates the relationship between the conditions of flow and the cognitive state. We argue that flow can still be experienced by consumers in the online shopping context once they feel skilled enough to be fully immersed in the activity they are carrying out (Larche & Dixon, 2021). This reinforces our conceptual model, which predicts that the more specific the skill is, the more likely it will shape the affective and cognitive experiential states of consumers. Novak et al.'s (2000) flow channel segmentation model provides a deeper understanding of the importance of the balance between skills and challenges in applying the flow theory to the online shopping context. Based on these arguments, we propose the following hypotheses:

Hypothesis 1: *The level of skill a consumer has when shopping online will have a positive impact on their affective experiential state.*

Hypothesis 2: *The level of skill a consumer has when shopping online will have a positive impact on their cognitive experiential state.*

According to Novak et al. (2000), Jaiswal et al. (2010), and Rose et al. (2012), having skills, expertise, and the ability to navigate the internet and online shopping is crucial for achieving consumer satisfaction. When information systems are technically and functionally error-free, they make website navigation easier, which builds consumer trust. Experienced online shoppers tend to have more confidence in e-commerce and perceive saved time and effort while shopping, leading to increased satisfaction (Roy, Lassar, and Shekhar 2016). Therefore, we posit that skill and the ability to overcome challenges are consistently and positively related to satisfaction, and thus propose the following hypothesis:

Hypothesis 3: *The level of skill a consumer has when shopping online will have a positive impact on their online shopping satisfaction.*

The process of shopping on an e-commerce website may pose certain challenges to consumers, despite providing the necessary products, services and information. For an e-commerce retailer, facilitating an easy and smooth purchase process is crucial to promote sales (Nel et al. 1999; Rose et al. 2012; Saha et al. 2023). However, consumers have varying responses to such challenges, and may defect to other services or retailers if the website becomes too difficult to navigate (Somosi et al. 2021). According to the principles of flow theory (Csikszentmihalyi, 1990), a state of flow is achieved when the level of skill matches the difficulty of the task at hand. When the skill level is higher than the task's difficulty (i.e., the task can be completed with ease), individuals may experience boredom, while if the skill level is lower than the difficulty (i.e., the task is too hard to complete), individuals may experience frustration and anxiety. This is supported by previous research in the field of e-commerce (Hoffman and Novak, 2009; Rose et al. 2012). Therefore, we propose that:

Hypothesis 4: *The level of challenge a consumer face when shopping online will have a positive impact on their affective experiential state.*

Hypothesis 5: *The level of challenge a consumer face when shopping online will have a positive impact on their cognitive experiential state.*

Hypothesis 6: *The level of challenge a consumer face when shopping online will have a positive impact on their overall online shopping satisfaction.*

Previous studies have suggested that the online consumer experience (OCE) is affected by both the cognitive and emotional aspects of consumer behavior during online shopping. Research in marketing has established a link between rational thinking and emotional states and moods of individuals (Bagozzi, Gopinath, and Nyer 1999; Gentile, Spiller, and Noci, 2007; Saha et al. 2023). Furthermore, emotions (affective state) influence the retrieval of information, memory, and learning about brands. Emotions and moods play a crucial role in the decision-making and judgment process of individuals, and Rose et al. (2012) found a significant correlation between affective and cognitive experiential states in e-commerce. Therefore, we propose the following hypothesis:

Hypothesis 7: *The affective experiential state of consumers while shopping online will have a positive impact on their cognitive experiential state.*

The satisfaction that consumers feel after shopping online is influenced by the positive experiences they encounter during the purchasing process, as well as their lack of regret, which is a negative emotion that is determined cognitively (Barta, Gurrea, & Flaviàn, 2022). Previous research in e-commerce has shown that a satisfying purchase experience is dependent on several positive encounters (Chen & Chou, 2012). Therefore, we propose the following hypothesis:

Hypothesis 8: *Affective experiential state has positive impact on online shopping satisfaction.*

Hypothesis 9: *Cognitive experiential state has positive impact on online shopping satisfaction.*

Moreover, according to flow theory, engaging in a playful activity that offers achievable challenges promotes repetition. Previous studies have demonstrated that customer satisfaction is a precursor to repurchasing, which is a form of consumer behavioral attitude (Barta, Gurrea, & Flaviàn, 2022; Chen & Chu, 2012). Therefore, we put forth the following hypothesis:

Hypothesis 10: *Online shopping satisfaction has positive impact on online repurchase intention.*

- ***Mediating role of affective experiential state***

Thus far, our argument has assumed that a balance between consumers' skills and challenges is necessary for a positive online shopping experience. These antecedent conditions of flow have a direct impact on consumers' affective and cognitive states, which in turn can influence their intention to repurchase online. The path to achieving satisfaction in online shopping, a prerequisite for repurchase intention, can take different dimensions. Thus, it is of interest to explore whether the affective experiential state acts as a mediator between the relationship of skill and cognitive experiential state and challenge and cognitive experiential state. Previous research conducted by Mauri et al. (2011) demonstrated that flow is associated with positive emotions and moods, as immersion in a task, such as online shopping, can create a sense of arousal when individuals are focused and successfully coping with a challenge. Additionally, previous research has suggested that affective states and emotions can influence some characteristics of the flow experience. Given the need for consumers to remain attentive to their activities during online shopping in retail contexts (Saha et al., 2023; Kelemen-Erdős, 2016), it is crucial to understand the potential impact of moods and emotions on the experience. Therefore, we propose the following six hypotheses:

Hypothesis 11: *The relationship between skill and cognitive experiential state is mediated by affective experiential state.*

Hypothesis 12: *The relationship between challenge and cognitive experiential state is mediated by affective experiential state.*

Hypothesis 13: *The relationship between skill and online shopping satisfaction is mediated by affective experiential state.*
Hypothesis 14: *The relationship between skill and online shopping satisfaction is mediated by cognitive experiential state.*
Hypothesis 15: *The relationship between challenge and online shopping satisfaction is mediated by affective experiential state.*
Hypothesis 16: *The relationship between challenge and online shopping satisfaction is mediated by cognitive experiential state.*

It is worth mentioning that Rose et al. (2012) divided the online customer experience (OCE) into two distinct components, which served as an inspiration for our research. The authors defined 'flow' solely based on the cognitive component and thus evaluated only how their respondents perceived the flow experience cognitively. In contrast to Rose et al. (2012), our study assumes that individuals can attain a state of flow during online shopping when positive emotions are elicited.

CHAPTER V - DATA ANALYSIS

This study aims to gain a better understanding of consumers' online repurchasing within Internet shopping websites of the Turkish book market in the retail sector. It also aims at identifying the drivers of online shopping satisfaction and repurchase intention by evaluating the influence of individuals' skillfulness and level of challenge at using the Internet shopping website of Turkey's Online Bookstore.

The current chapter runs an initial examination on the collected data to establish its validity for subsequent statistical analysis of both the measurement and structural models.

- The first step initiates data screening and cleaning to account for extreme cases and crucial concerns such as missing data, outliers, homogeneity, normality, linearity, homoscedasticity, multicollinearity, as well as evaluating the common method bias (CMB).
- The second step involves the presentation of descriptive statistics of the indicator items (e.g., mean and standard deviation) and presenting the demographic profiles of the respondents.
- Third, the study adopts a quantitative strategy with deductive reasoning for the statistical analysis of the collected data (Cohen, Lawrence, and Morrison 2018; Miller and Brewer 2003), where the data was analyzed to identify the associated paths between latent variables and examine the significant relations among variables of concern (Cohen et al. 2018).
- Forth, the partial least squares (PLS) method was employed to evaluate the proposed model (measurement and structural models) using SmartPLS software, while the statistical analysis of data was performed using SPSS v24.

5.1. Preliminary Data Analysis

The data was collected using the online Qualtrics, the data was retrieved and exported in the form of an Excel spreadsheet for further analysis. As already mentioned, a total of 649 responses were collected and coded into the SPSS software package based on value labels and numerical values. Following the data download, a thorough statistical analysis was conducted to identify any systematic missing data or any potential gaps and to verify the eligibility of participants. The results indicated no severe missing values but illustrate apparent gaps within the standard deviation (STD) among 18 observations in all latent variables; their STD is too small below the threshold value of 0.3. The 18 respondents who are unengaged are evidence of giving the same response for every single item, which means that these observations may not contain significant information. Therefore, these observations were removed from further statistical analysis, leading to 631 complete survey responses.

To further purify the sample, outliers were detected with the method of the mean ± 2.5*Standard Deviation, that is based on the characteristics of a normal distribution (Howell, 1998; Miller, 1991). Thus, any item with SD value less than 0.5 and more than 2.5 was removed from the sample.

5.1.1. Measurement of Outliers

Before conducting the assessment analysis for the measurement model, it is crucial to run a regression analysis to test the validity assumptions of the obtained data. This evaluation should take into account the occurrence of both univariate and multivariate outliers, as well as the univariate and multivariate normality.

According to (Hair et al. 2014), an outlier is an observation point that exhibits an extreme residual value, deviating significantly from other observations and falling outside the range of responses from the sample. This phenomenon can distort statistical analyses and ultimately affect the overall findings of the study. The phenomenon of outliers can be classified into two categories: univariate outliers, which occur when a single observation exhibits a large residual value, and multivariate outliers, which occur when an irregular combination of residual values is observed across two or more observations (Tabachnick & Fidell, 2013). The existing research identified four distinct reasons that contribute to the occurrence of outliers. These reasons include (1) erroneous data

entry, (2) missing values within the dataset, (3) observations that do not belong to the intended population, (4) and observations that belong to the intended population but exhibit an extreme distribution that deviates from a normal distribution. The first two reasons can be identified as causative agents, and their remediation can be achieved through meticulous data entry and focused inspection for missing values. This study implements potential solutions for the last two reasons. Specifically, the third reason can be addressed through deletion, while the fourth reason can be remedied by retaining the case and considering some modifications to the observations.

The evaluation of univariate outliers can be achieved through the computation of the standard scores (z-scores) of latent variables across all observation cases. Using the descriptive statistics function of SPSS, the data values of each observation case are converted to z-scores (Tabachnick and Fidell 2013). However, the rule of thumb for identifying univariate outliers, as proposed by (Tabachnick and Fidell 2013): In a sample size with less than 80 participants, any case with a z-score of ±2.5 (at the significant level: $p < 0.001$) or higher is considered to be an outlier. On the other hand, the cut-off value for the z-score scores may be raised in a large sample size as high as ±3.29 (at a significant level: $p < 0.001$). Since this study have a big sample size ($N = 631$), any case with a z-score of ±3.29 or higher is considered to be an outlier. The findings in Table 6 indicate that the six latent variables of the proposed model (Challenge, CES, AES, Skill, OSS, & ORI) have a standard score within the threshold range of ±3.29.

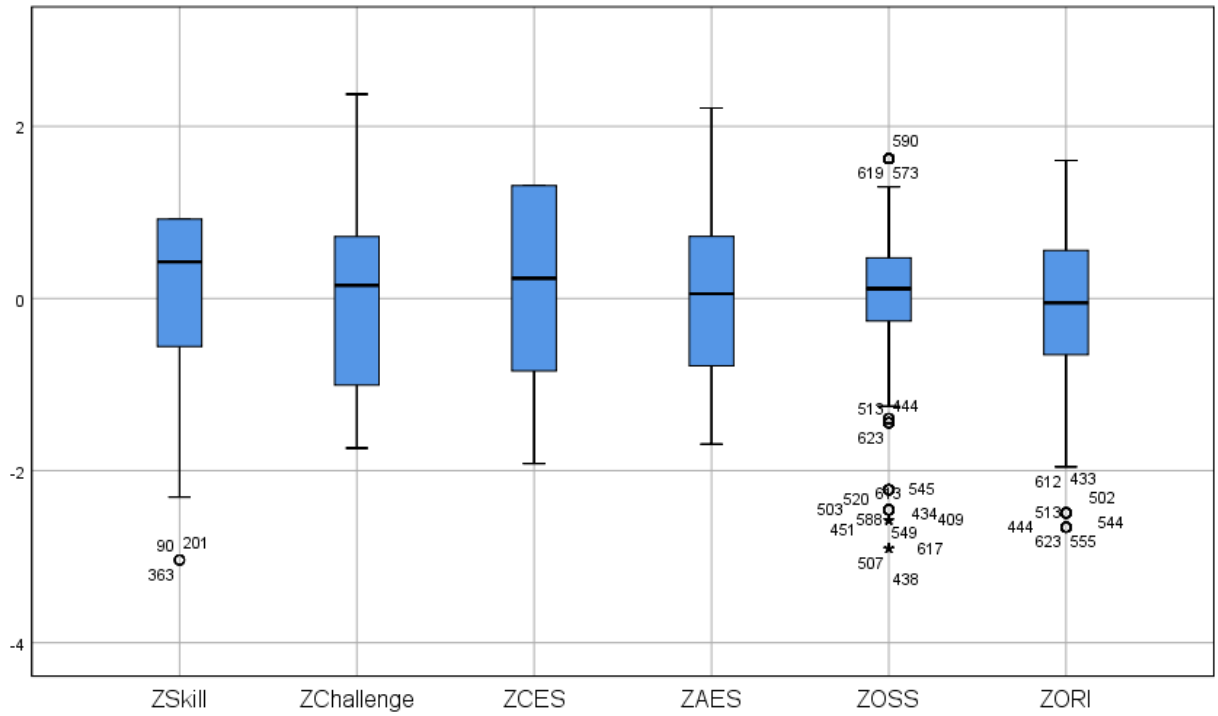
TABLE 6: UNIVARIATE OUTLIERS: THE STANDARDIZED SCORES OF LATENT VARIABLE

Latent variables	z-scores	
	Minimum	Maximum
z-score(Skill)	-3.03870	0.92335
z-score(Challenge)	-1.73801	2.37359
z-score(CES)	-1.91726	1.31172
z-score(AES)	-1.69246	2.21185
z-score(OSS)	-2.90607	1.62547
z-score(ORI)	-2.65811	1.60404

Source: *Own elaboration based on own results*

A boxplot is a practical approach for identifying univariate outliers; the advantage of this approach is that it allows for the identification of outlier cases through statistical means rather than subjective interpretation. The boxplot in Figure 15 and Table 6 show the data set for the test of univariate outliers; where some of the observations in the latent variables have extreme univariate outliers in two indicator items (OSS3 and ORI4) with standard scores exceeding the threshold value of -3.29 (see APPENDIX-A: Table 6). The potential outliers in OSS3 are case # 431, 500, & 610 at the low end (see APPENDIX-A: Figure 15), while the outlier cases in ORI4 are case # 400, 514, & 555 at the low end (see APPENDIX-A: Figure A.6). (Cohen 2013) recommended ignoring these outlier cases if they are less than 2% of the sample size and not extreme. The highest number of outlier cases for each indicator item (OSS3 and ORI4) was three values, which represent 0.47%, and therefore, the existence of univariate outliers in the aforementioned variables does not appear to be a significant concern.

Multivariate outliers were evaluated by computing the squared Mahalanobis distance (D2/df) of each latent variable for all respondent cases, where df is the number of variables. (Tabachnick and Fidell 2013) defended Mahalanobis distance as "the distance of a case from the centroid of the remaining cases where the centroid is the point created at the intersection of the means of all variables". For a small sample, any case with a D2/df value greater than the cut-off value of 2.5 (e.g., statistically significant at $p \leq 0.005$) is deemed as an outlier. Whereas for large samples, if the observation value of a D2/df exceeded 3 or 4 (e.g., statistically significant at $p \leq 0.001$) can be designated as an outlier (Hair Jr et al., 2014).



Circle shape denotes Mild-Outliers scores that is greater than the other scores by more than 1.5IQR (inter quartile range (IQR) > 1.5).

Star shape denotes Extreme-Outliers scores that is greater than the other scores by more than 3IQR (inter quartile range (IQR) > 3).

FIGURE 15: BOX-PLOT OF UNIVARIATE OUTLIERS

Source: *Own elaboration based on own results*

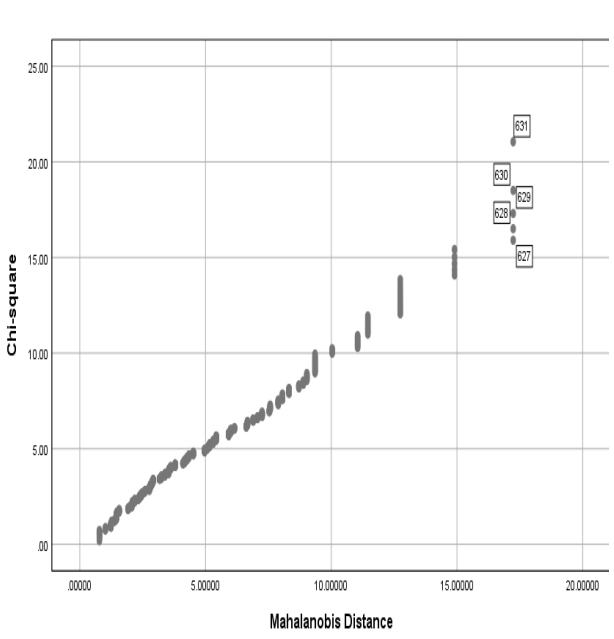
Circle shape denotes Mild-Outliers scores that is greater than the other scores by more than 1.5IQR (inter quartile range (IQR) > 1.5).

Star shape denotes Extreme-Outliers scores that is greater than the other scores by more than 3IQR (inter quartile range (IQR) > 3).

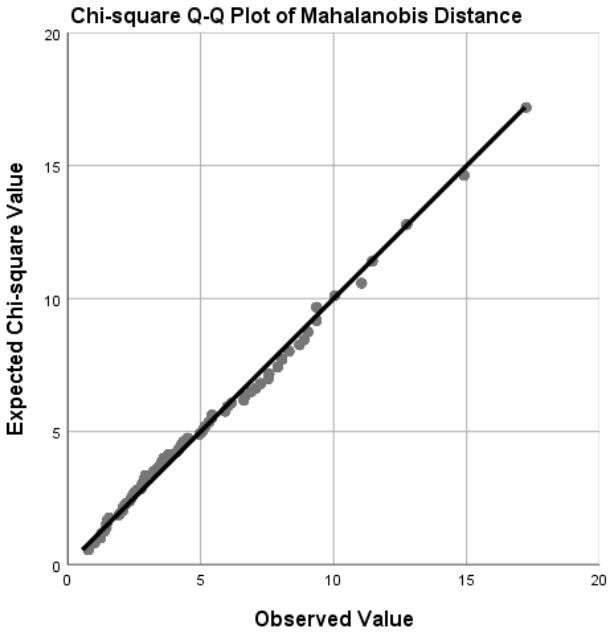
Mahalanobis distance was calculated by means of linear regression analysis. A dummy variable was utilized as the dependent variable, while the observed variables, namely Challenge, CES, AES, Skill, and OSS, were treated as the independent variables in regression analysis. The results of the Mahalanobis test indicate that the Mahalanobis distance values exhibit a range of 0.79 to 17.23, with an average value of 4.99. However, some observations can be classified as potential outliers with insignificant values at $p \leq 0.005$, noting that the presence of extreme residual values

in a given sample does not necessarily designate the presence of outliers. In light of the previous analyses, it is deduced that the presence of outliers would not be a significant concern in this study.

Scatter plots and quantile-quantile plots (Q-Q plot) are an alternative method to identify the possible multivariate outliers, which encompasses a convenient approach of graphing the scatter plot of Mahalanobis distance. This involves the generation of chi-square values concerning the Mahalanobis distance values (Wan Nor, 2015), and plotting the Q-Q plot of the expected chi-square values against the observed values of Mahalanobis distance. Figure 16 illustrates the scatter plots of Mahalanobis distance, forming a clear straight line with some observations at the most upper right part of the plot (case # 22, 93, 207, 374, & 488), which has a slight deviation from a normal distribution. The observations exhibit a normal distribution pattern, with a close proximity to the regression line. In light of the Mahalanobis test and the scatter plots, it can be inferred that the observed potential outliers were not statistically significant. The observations were found to be closely clustered around the regression line, indicating a normal distribution. Therefore, it can be concluded that the presence of multivariate outliers is not a significant issue in the present study (Tabachnick & Fidell, 2013).



(a) Scatter plots of observed values of squared Mahalanobis distance vs Chi-square values



(b) Q-Q plot of the observed values of squared Mahalanobis distance vs expected Chi-square values

FIGURE 16: THE DETECTION OF MULTIVARIATE OUTLIERS USING SCATTER PLOT FOR MAHALANOBIS DISTANCE

Source: *Own elaboration based on own results*

5.1.2. Measurement of Normality

Normality is defined as "the shape of the data distribution or an individual metric variable and its correspondence to the normal distribution, which is the benchmark for statistical methods" (Hair Jr et al. 2014). Similarly, statistical inference and SEM analysis are more robust when the observed data are normally distributed (univariate and multivariate normality), and the relationship between latent variables is accurate in terms of statistical significance (Tabachnick and Fidell 2013). In the context of normality and statistical technique adopted in the present study, PLS-SEM is a resilient technique that fits the normality assessment of data samples and particularly in a situation when the observed data are not normally distributed (extremely skewed) (Ringle and Sarstedt 2016; Hair et al. 2017). In this approach, PLS-SEM applies the central limit theorem to transform the non-normal distribution (Cassel, Hackl, and Westlund 1999). Furthermore, the sample size and distribution shape determine the degree of non-normal distribution, as highly skewed data in a small sample size reduce the statistical power due to the increasing errors in the standard bootstrapping. Specifically, a small sample size ($N < 50$) with a large significant deviation from normality may have a major influence on the results, whereas a big sample size ($N > 200$) with a small significant deviation from normality can be ignored (Hair Jr et al. 2017). Univariate normality explains the distribution of a single variable within the sample, while multivariate normality explains the joint distribution of all variables in the sample. Accordingly, the distributions of data were scanned to assess their degree of univariate normality (the distribution

of one variable) by assessing the degree to which the skewness and kurtosis of data distribution deviate from a normal distribution. Similarly, examining the multivariate normality (the distribution of more than one variable) using well-known techniques: Kolmogorov-Smirnov test (KS), Shapiro-Wilks test (SW) (Sharpiro and Wilk 1965), and Mardia's measures test (Mardia 1970).

For the assessments of univariate normality, descriptive analysis is used to examine the skewness and kurtosis statistics of each variable to assess their degree of skewness and kurtosis. As suggested by Pituch and Stevens (2015) and Hahs-Vaughn and Lomax (2020), the thumb rule for skewness and kurtosis is that any variable with a value greater than ±1, ±2, respectively, does not belong to a normal distribution (univariate normality). However, this approach is not accurate enough and does not fits different sample sizes (i.e., small, medium, & large) because the standard error decreases as the sample size increases. A second thumb rule is used to determine whether the skewness and kurtosis deviate significantly from zero (an indication of univariate normality), a *z*-test based on the significance level (set at roughly 0.05 significance level) is applied for testing univariate normality for different sample sizes (Pituch and Stevens 2015).

5.1.3. Multicollinearity

From the several method of detecting severity of multicollinearity, two are very common: inspecting the bivariate and multivariate correlation matrix, and calculating the variance inflation factors (VIF) and tolerance impact

In the current study, bivariate correlation matrix was computed using Pearson’s correlation.

TABLE 7: PEARSON CORRELATIONS: INTER-CONSTRUCT CORRELATIONS FOR OBSERVING MULTICOLLINEARITY AND COMMON METHOD BIAS

	Skill	Challenge	CES	AES	OSS	ORI
Skill	1					
Challenge	-.237**	1				
CES	.355**	.192**	1			
AES	.479**	-.275**	.328**	1		
OSS	.571**	-0.072	.512**	.574**	1	
ORI	.405**	-.134**	.326**	.419**	.673**	1

**. Correlation is significant at the 0.01 level (2-tailed).

Source: *Own elaboration based on own results*

Table 7 presents the Pearson correlation coefficients, examining the inter-construct correlations among the variables to observe multicollinearity and common method bias. The table includes the variables Skill, Challenge, Cognitive Experiential State (CES), Affective Experiential State (AES), Online Shopping Satisfaction (OSS), and Online Repurchase Intention (ORI).

The correlation coefficients indicate the strength and direction of the relationships between the variables. The diagonal elements represent the correlations between each variable with itself, which are always perfect correlations of 1. The off-diagonal elements represent the correlations between different pairs of variables.

The results reveal several significant correlations. Skill shows a negative correlation with Challenge (-0.237**), suggesting that as the level of skill increases, the perceived challenge decreases. Skill is positively correlated with AES (0.479**) and OSS (0.571**), indicating that higher skill levels are associated with more positive affective states and greater online shopping satisfaction. Additionally, Challenge exhibits a negative correlation with AES (-0.275**) and a weak positive correlation with CES (0.192**), implying that higher challenge levels may lead to lower affective states and a slightly increased cognitive experiential state.

Furthermore, strong positive correlations are observed between AES and OSS (0.574**) and between OSS and ORI (0.673**), indicating that positive affective states and online shopping satisfaction are closely linked to online repurchase intentions.

Overall, the correlations presented in Table 7 provide insights into the relationships between the variables, helping to identify any potential multicollinearity issues and common method biases that may influence the study's findings.

TABLE 7: PEARSON CORRELATIONS: INTER-CONSTRUCT CORRELATIONS FOR OBSERVING MULTICOLLINEARITY AND COMMON METHOD BIAS

Variables	Collinearity Statistics	
	Tolerance	VIF
Skill	0.60	1.65
Challenge	0.79	1.26
CES	0.66	1.52
AES	0.59	1.69
OSS	0.48	2.07

Dependent variable: ORI

Source: *Own elaboration based on own results*

Table 8 presents the collinearity statistics, including the tolerance and Variance Inflation Factor (VIF), to examine multicollinearity and common method bias among the variables. The table includes the variables Skill, Challenge, Cognitive Experiential State (CES), Affective Experiential State (AES), Online Shopping Satisfaction (OSS), and the dependent variable Online Repurchase Intention (ORI).

In Table 8, the tolerance values range from 0.48 to 0.79, indicating that each variable explains between 48% and 79% of its variance independently of the other variables. These values suggest that there is no severe multicollinearity issue among the variables.

The VIF values range from 1.26 to 2.07, which are all below the threshold of 5. These values indicate that the variables do not exhibit high levels of collinearity. Thus, there is no significant multicollinearity among the variables in the analysis.

The dependent variable, Online Repurchase Intention (ORI), is not included in the collinearity statistics as it serves as the outcome variable. By excluding it from the analysis, we can focus on understanding the relationships among the independent variables (Skill, Challenge, CES, AES, and OSS) without the potential bias of multicollinearity.

Overall, the results from Table 8 suggest that there is no severe multicollinearity issue or common method bias among the variables, indicating that the data is reliable and suitable for further analysis. These findings provide confidence in the validity of the relationships examined in the study and support the interpretation of the results.

5.1.4. Common Method Bias

The data was collected from participants at one time using a self-reported questionnaire survey, which includes all scale items in the survey; this may increase the likelihood of common-method variance (CMV). Podsakoff et al. (2003) identify CMV as the variance that arises while measuring the model's constructs; this is due to the adopted measurement method itself but not the constructs being measured. This variance can either enhance or diminish the underlying causal relationships between the factors under investigation. Furthermore, this CMV generates a well-known phenomenon, namely common method bias (CMB), which is generated by the measuring method employed in studying SEM, but not the causes and effects of the model's network (Kock 2015). The present research employed three statistical approaches to assess and control for method bias, namely Harman's one-factor test (Podsakoff et al. 2003), inter-construct correlations (Pavlou, Liang, & Xue, 2007), and the full collinearity test (Kock 2015), which may boost our understanding of the potential sources of bias in SEM models.

First, this study verifies the existence of CMB using the test of Harman's one-factor, where regression analysis was conducted with SPSS V25 using the analysis of principal axis factoring with the unrotated rotation. The regression analysis was executed across the sample size (N = 631 observations) on the indicator items of the six latent variables in the model (25 items). The results indicate that a single variable accounted for only 32.2% of the variance, which is much lower than the threshold average of 50% as recommended by Podsakoff et al. (2003).

Second, the assessment of the inter-construct correlations was conducted with Pearson correlations for the latent variables. As per the recommendation of Pavlou, Liang, and Xue (2007), correlations

exceeding the threshold value of 0.9 between variables are indicative of CMB. The results presented in Table 9 demonstrate the inter-correlation among variables, which varies from -0.072 to 0.673. These values are below the specified threshold. Consequently, the study did not reveal any significant influence of a particular variable on the other variables.

Third, this study assesses the presence of CMV or CMB by examining the VIFs of the latent variables in the model through a full collinearity test. The methodology proposed by Kock (2015) involves designating one variable as the independent variable and the remaining variables as dependent variables, which are treated simultaneously with the remaining variables. There are four distinct threshold values for VIFs that correspond to varying levels of common bias in variance-based SEM (VB-SEM). Specifically, VIF values less than 3.3 indicate the absence of common bias, while VIF values ranging from 3.3 to 5 suggest minor common bias. On the other hand, VIF values above 5 and below 10 indicate moderate common bias, whereas VIF values exceeding 10 correspond to major common bias. The results, as presented in Table 9, indicate that all VIF values were below the threshold value of 3.3. Therefore, we can conclude that CMV or CMB are not concerned in this study or the proposed model.

TABLE 8: PEARSON CORRELATIONS: INTER-CONSTRUCT CORRELATIONS FOR OBSERVING MULTICOLLINEARITY AND COMMON METHOD BIAS

	Inner VIF Values					
	Skill	Challenge	CES	AES	OSS	ORI
Skill	**DV**	1.57	0.63	1.58	1.46	1.61
Challenge	1.19	**DV**	0.90	1.14	1.22	1.22
CES	1.49	1.37	**DV**	1.50	1.40	1.52
AES	1.69	1.60	0.59	**DV**	1.53	1.72
OSS	2.64	2.89	0.37	2.58	**DV**	2.15
ORI	1.85	1.84	0.54	1.85	1.36	**DV**

Source: *Own elaboration based on own results*

5.2. Demographic Profile of Respondents

The cleaned sample size consists of 631 participants who have shopped on the idefix.com website and are drawn from a population of consumers who have made online purchases of books in Turkey. Table 10 shows the percentage and frequency of respondents following the demographic characteristics: age, gender, education level, income levels, monthly average amount spent on books, and professions. The majority of participants were female, at 65.8% (N = 427), with male respondents at 34.2% (N = 222). As for the age distribution of participants, the least common age groups were at 11.6% (N = 75) for participants above the age of 45, while the most common age groups were at 31.0% (N = 201) for ages 25 to 34 years old. The majority of respondents held a bachelor's degree at 65.6% (N = 426), and the least were doctorate holders at 5.1% (N = 33), as well as those respondents without a high school degree. In terms of income levels, the highest percentage of respondents at 22.0% (N = 143) reported having a monthly income of 9,000 TL or above, followed by 19.6% (N = 127) who reported earning between 6,000 and 8,999 TL per month. On the other hand, the lowest percentage of respondents, 11.6% (N = 75), reported earning between 2,500 and 3,999 TL per month. Regarding the monthly average amount spent on books, the highest percentage of respondents of 67.3% N = 437) reported spending 100 TL and above per month. Only 7.1% (N = 46) reported spending between 0 and 29 TL per month. Finally, in the category of respondents' professions, the majority of 27.9% (N = 181) identified themselves as students or employees, while the minority of 3.1% (N = 20) identified themselves as entrepreneurs.

TABLE 9: DEMOGRAPHIC PROFILE OF THE RESPONDENTS (N = 631)

Group characteristics	Frequency	Percent
Gender		
Female	427	65.8
Male	222	34.2
Age		
18-24 Years	184	28.4
25-34 Years	201	31.0
35-44 Years	189	29.1
45+ Years	75	11.6
Education level		
Less than high school degree	33	5.1
High school graduate	46	7.1
Bachelor degree	426	65.6
Master degree	111	17.1
Doctorate degree	33	5.1
Income level		
0 – 2,499 TL	203	31.3
2,500 – 3,999 TL	75	11.6
4,000 – 5,999 TL	101	15.6
6,000 – 8,999 TL	127	19.6
9,000 TL and above	143	22.0
Average amount spend on books per month		
0 -29 TL	46	7.1
30 - 49 TL	51	7.9
50 - 74 TL	40	6.2
75 - 99 TL	75	11.6
100 TL and above	437	67.3
Profession		
Student	181	27.9
Civil Servant	23	3.5

Employee	181	27.9
Teacher	50	7.7
Academician	56	8.6
Entrepreneur	20	3.1
Retired	40	6.2
Other	98	15.1

Source: *Own elaboration based on own results*

5.4. Assessment of Measurement Model

The study conducts inferential statistical analysis to test hypotheses and evaluate the relationships among variables. Specifically, PLS with a variance-based SEM technique was adopted to validate the proposed model, test the hypotheses, measure the R-Square of the dependent latent variables, and estimate the relationships within the path model using SmartPLS (Hair et al. 2017). The proposed theoretical framework is depicted in Figure 14, as presented in Chapter 3. The model consists of 25 indicator items that measure a total of six latent variables. Within the proposed model, there are two independent latent variables that are exogenous constructs (Skill and Challenge), three endogenous constructs (CES, AES, and OSS), and one dependent latent variable (ORI). The measurement of latent variables can be classified into two types: reflective and formative. Consistent with the study of Hair et al. (2017), the present model employs reflective measurement, where all the indicator items exert an impact on the underlying construct and cannot be removed or interchangeable without triggering some effects in the latent variable.

5.2.1. Outer Model Measurement

Quality assessments of the measurement model was perform using PLS, this is to assure the quality of latent variables, indicator items, and factor loadings of the indicator items, which facilitates the achievement of well model fit and structure model. These assessments were part of the improvement process for initial measurement model. In a reflective measurement model, items factor loading reflects the anticipated relationships between the indicator items and their designated latent variables. According to Hair Jr et al. (2017), the factor loading represents the absolute contribution that each indicator item has on its corresponding latent variable. As presented in Table 11, the factor loading for each indicator item loads within its corresponding latent variables (Skill, Challenge, CES, AES, OSS, and ORI). The results of the initial measurement model indicate that most of the factor loadings were above the threshold of 0.7, with the exception of five indicators (Challenge4, AES5, AES6, AES7, and AES8) that had lower factor loading values of 0.231, 0.669, 0.457, 0.485, and 0.502, respectively. Consistent with the recommendation of Fornell and Larcker (1981), these indicator items with loading values below 0.7 were excluded from the measurement model.

TABLE 10: OUTER MODEL: ITEMS OUTER LOADINGS

	AES	CES	Challenge	ORI	OSS	Skill
AES1	0.790					
AES2	0.751					
AES3	0.713					
AES4	0.726					
AES5*	0.669					
AES6*	0.457					
AES7*	0.485					
AES8*	0.502					
CES		1.000				
Challenge1			0.916			
Challenge2			0.886			

Challenge3	0.847			
Challenge4*	0.231			
ORI1		0.851		
ORI2		0.879		
ORI3		0.710		
ORI4		0.845		
OSS1			0.857	
OSS2			0.913	
OSS3			0.790	
OSS4			0.837	
skill1				0.963
skill2				0.935
skill3				0.919
skill4				0.905

**** These indicator items with loading values below 0.7 were excluded from the measurement model.***

Source: *Own elaboration based on own results*

Following the guidelines proposed by Hair Jr et al., (2017), this is to better understand the effect of deleting indicator items with factor loadings of values less than 0.7 on the measurement model and its internal consistency reliability. The model was run at two different stages: the first time, all indicator items were included, and the second time, only those with factor loadings greater than the cutoff value of 0.7 were used. Consequently, the indicator items (with values only greater than 0.7) in the second run were significantly loaded into their respective latent variables and also exhibited an improvement in both composite reliability (CR) and average variance extracted (AVE). An evaluation was conducted to determine the effect of deleting items on the measurement model, specifically on CR and AVE. At first, the study assesses the measurement model using a complete set of indicator items (20 items), as shown in the initial proposed model (refer to Figure 17). Subsequently, items with factor loading values less than 0.7 were eliminated from the model (i.e., Challenge4, AES5, AES6, AES7, and AES8).

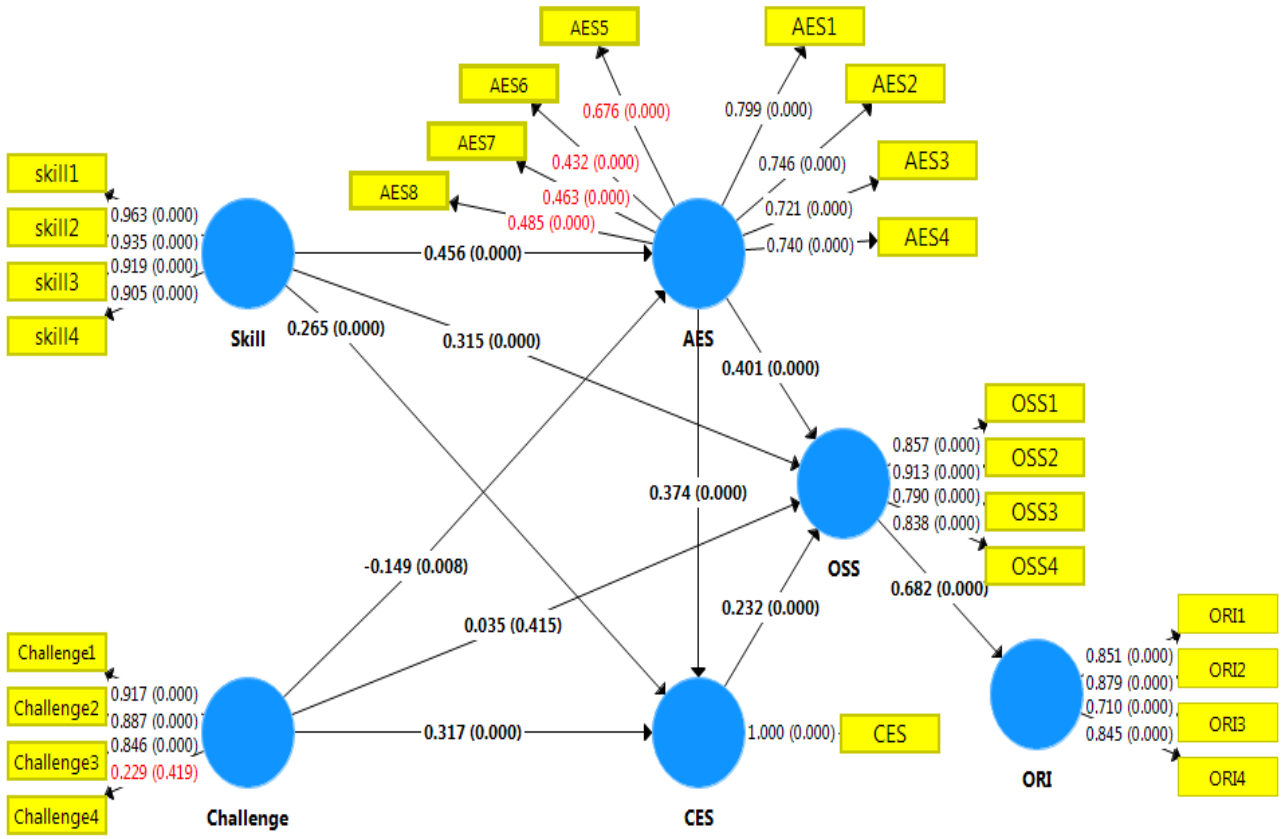


FIGURE 17: STANDARDIZED PATH COEFFICIENTS OF THE INITIAL STRUCTURAL MODEL

Source: *Own elaboration based on own results*

Table 12 displays the results of the first and second run, indicating noticeable changes in those two constructs (Challenge and AES) with deleted items. The findings demonstrate the effects of eliminating items with a value below 0.7 on CR and AVE, as well as on the measure of internal consistency (Cronbach's alpha). The results of the items' removal provide insight into the need to reassess the factor loading of indicator items in future research.

TABLE 11: THE IMPACT OF FACTOR LOADING ON THE INTERNAL CONSISTENCY RELIABILITY

	With all items			With items ≥ 0.7		
	Cronbach's Alpha	CR	AVE	Cronbach's Alpha	CR	AVE
AES	0.798	0.848	0.421	0.844	0.895	0.680
CES	--	--	--	--	--	--
Challenge	0.772	0.838	0.599	0.862	0.916	0.785
ORI	0.839	0.894	0.679	0.839	0.894	0.679
OSS	0.872	0.912	0.723	0.872	0.913	0.724
Skill	0.949	0.963	0.866	0.949	0.963	0.866

Composite reliability (CR), Average variance extracted (AVE)

Source: *Own elaboration based on own results*

5.2.2. Reliability Assessment of the Measurement Model

Following the removal of those indicator items with factor loading values below 0.7, namely Challenge4, AES5, AES6, AES7, and AES8, the reliability and validity of the measurement model were re-evaluated prior to conducting tests on the structural model and research hypotheses. The assessment of reliability involves the evaluation of internal consistency between multiple indicator items that measure a single latent variable. In addition, evaluating the correlation between a single indicator item's scores from the same respondent at different time points. Thereby, the scale reliability is crucial in ensuring the accuracy and consistency of measurement instruments and is essential at minimizing biases that may impact the reproducibility of research findings.

Following the guidelines of reliability measurement approach as proposed by Hair Jr et al., (2017), this study examines the psychometric properties of a set of indicator items used to measure a designated latent variable, namely internal consistency reliability, construct reliability, and indicator item reliability. Specifically, Cronbach's alpha is employed to assess the internal consistency, in which all indicator items within a latent variable elicit the same meaning and exhibit consistent levels of measurement precision, it's coefficient value should be above of 0.7 (Cronbach 1951). On the other hand, CR measures construct reliability, the extent to which a

construct is measured accurately by its assigned indicator items, the threshold value is greater than 0.7 as recommended by Hair Jr et al. (2014). Finally, the indicator item reliability can be determined by assessing its score variance in relation to the total variance of the items in the same construct (Bagozzi and Yi 1988). It is possible to achieve this by assessing the factor loading values of indicator items on their respective latent variables. Factor loading is a statistical technique used to determine the correlation between indicator items and their corresponding latent variable. This technique is used to assess the amount of variance that can be explained by the designated latent variable, its cutoff value is greater than 0.7 (Chin 1998).

Table 13 shows the descriptive statistics of the model constructs and indicator items under study. The study found that the constructs in the proposed model have a mean value ranging from 2.68 to 4.07, with a standard deviation ranging from 0.68 to 1.17. "Skill" was identified as the most prominent construct, with a mean value of 4.07 and a standard deviation of 1.01. While "Challenge" was found to have the lowest mean, with a mean value of 2.68 and a standard deviation of 1.17. As for the indicator items, the mean values of the items were found to range from 2.51 to 4.14, with standard deviations ranging from 0.66 to 1.27. The highest noted item was "Skill1," with a mean value of 4.14 and a standard deviation of 1.10. While "Challenge2" was found to have the lowest mean value of 2.65 with a corresponding standard deviation of 1.15. In addition, the findings of reliability measurements, namely Cronbach's alpha, CR, and factor loading, are presented in Table 13. The coefficient values of Cronbach's alpha of all constructs in the model ranged from 0.84 to 0.95, and the values of CR ranged from 0.89 to 0.96, which is higher than the threshold value of 0.70. In addition, the factor loading of all indictor items has values ranging from 0.71 to 9.60, and with significant t-values ranging from 16.81 to 361.3, all items have a significant factor loading greater than the threshold value of 0.70. Therefore, the scales adopted in this study indicate a reliable measure for the model’s constructs and show a satisfactory level of reliability for examining the online repurchasing intention of consumers.

TABLE 12: DESCRIPTIVE STATISTIC AND RELIABILITY MEASUREMENTS

Constructs/items	Factor loading	t-values	α	CR	AVE	Mean	STD
Affective Experiential State (AES)			0.84	0.89	0.68	3.55	0.68
AES1	0.84	71.28				3.93	1.06
AES2	0.84	55.54				3.59	1.11
AES3	0.82	45.90				3.87	1.00
AES4	0.80	37.53				3.59	1.03
Cognitive Experiential Status (CES)							
CES	1.00	--	--	--	--	3.78	0.93
Challenge			0.86	0.92	0.79	2.68	1.17
Challenge1	0.94	43.37				2.70	1.27
Challenge2	0.92	27.07				2.65	1.15
Challenge3	0.78	13.99				2.51	1.25
Online Repurchase Intention (ORI)			0.84	0.89	0.68	3.75	0.77
ORI1	0.85	65.61				3.84	0.90
ORI2	0.88	70.73				3.80	0.98
ORI3	0.71	16.81				3.51	1.08
ORI4	0.85	61.40				3.84	0.81
Online Shopping Satisfaction (OSS)			0.87	0.91	0.72	3.92	0.67
OSS1	0.86	54.01				4.03	0.66
OSS2	0.91	104.02				3.86	0.83
OSS3	0.79	36.33				3.90	0.82
OSS4	0.84	51.26				3.89	0.83
Skill			0.95	0.96	0.87	4.07	1.01
Skill1	0.96	361.30				4.14	1.10
Skill2	0.94	184.69				4.03	1.06
Skill3	0.92	135.18				4.09	1.10
Skill4	0.91	97.20				4.02	1.08

Cronbach's Alpha (α), Composite reliability (CR), Average variance extracted (AVE), Standard deviations (STD)

Source: *Own elaboration based on own results*

5.2.3. Validity Assessment of the Measurement Model

According to Hair et al. (2014), the validity of the measuring instrument should be capable of validating that the results that were disclosed are a real depiction of the findings that were under investigation. When determining the validity of a measurement model, it is necessary to examine both the instrument's content and its construct validity. Content and construct validity are the two most prevalent techniques of validity that should be evaluated to confirm the measurement model's validity.

Content validity, or qualitative validity, in scientific literature is commonly referred to as the identification and evaluation of the relationship that exists between indicator items and their assigned construct. This process involves the involvement of judges, experts, and preliminary tests using multiple population samples to ensure the validity of the assessment. (Hair Jr et al. 2014). The initial phase of the validity assessment involves performing a content validity analysis, which aims to establish the correlation between the construct and its assigned measurable items. Thereby, it is to note that even if statistical analysis yields significant results, the absence of content validity in the instrument for measurement would render the construct validity invalid (Garver and Mentzer 1999). The current study employs a meticulous analytical approach to validate the content by adopting the constructs' items from the available literature. The literature review (see Chapter 2) and instrument development (see Chapter 4) provide further details on this process. The researcher next asked a few members of the faculty of business and management at Corvinus University of Budapest to assess the validity of the questionnaires to see whether or not they were logically sound. The questionnaire variables were recognized in the literature, and experts suggested minor modifications that were incorporated into the ultimate survey.

The determination of the construct validity of a research measure or scale can be evaluated using the standard approaches of convergent and discriminant validity. According to Hair Jr et al. (2017), convergent validity is a method for determining the degree of confidence one has in the assertion that a hidden variable is being assessed accurately by its underlying indicators. While discriminant validity evaluates the measurements of each construct to ensure the existence of distinct patterns across different constructs, ensuring that theoretically unrelated constructs are also practically unconnected to each other in reality (Sabah 2016).

5.2.3.1. Convergent Validity

The convergent validity of a construct examines the degree of correlation between the construct and the items that have been developed to measure it. This approach is in line with the definition of convergent validity as proposed by Garver and Mentzer (1999). The presence of a high correlation among measures of various items indicates that they are measuring the same construct, which is an indication of convergent validity. The evaluation of convergent validity has been conducted by assessing three criteria: factor loading, CR, and AVE. Both factor loading and CR satisfy the estimation criteria as their values exceeded the cutoff value of 0.70, ranging from 0.71 to 9.60 and from 0.89 to 0.96, respectively (see Table 13). Likewise, AVE captures the proportion of variation a construct component really collected from its indicator items due to measurement error. As shown in Table 13, the values of AVE for each construct were found to be greater than the recommended threshold values of 0.50, ranging from 0.68 to 0.87 (Fornell and Larcker 1981), suggesting that the majority of the variation can be attributed to those particular constructs. Consequently, these results present evidence that satisfies all three criteria for convergent validity measurements.

5.2.3.2. Discriminant Validity

The concept of discriminant validity is often viewed as a complementary construct to that of convergent validity, where discriminant validity indicates that they should exhibit differences, while convergent validity suggests that two distinct conceptualizations should demonstrate similarities. Specifically, the measuring items are anticipated to be non-unidimensional in discriminant validity (Fassott et al. 2016). Therefore, discriminant validity is achieved when a measure exhibits a low correlation with other measures that are deemed to be distinct from it. When correlations are in close proximity, it indicates that the measurement may not effectively capture a unique characteristic. The current research assesses the discriminant validity of measures using three criteria as proposed by Hair Jr et al., (2017). These criteria included inter-item correlation (cross-loading), inter-construct correlation (square root of AVE value), and Heterotrait-Monotrait Ratio (HTMT).

The study conducted an examination of inter-item correlation (cross loading) with factor loading to evaluate discriminant validity at the item level. This approach was suggested by (Chin 1998)

and involved correlating the component scores of each construct with the other items. The present study employs this approach to ensure that each measuring item pertaining to a particular construct exhibits higher values than its cross-loadings in both rows and columns. The cross-loadings for each indicator item were analyzed and presented in Table 14. The findings indicate that the items exhibited a stronger loading on their respective hypothetical constructs while displaying weaker loadings on other distinct constructs. Furthermore, the shared variance between the construct and its indicators was greater than the variance explained and shared with other constructs in the model, suggesting adequate discriminant validity.

TABLE 13: DISCRIMINANT VALIDITY: INTER-ITEM CORRELATION (CROSS LOADING)

	AES	CES	Challenge	ORI	OSS	Skill
AES1	**0.844**	0.439	-0.145	0.350	0.574	0.424
AES2	**0.835**	0.087	-0.280	0.296	0.379	0.246
AES3	**0.823**	0.304	-0.125	0.361	0.560	0.311
AES4	**0.797**	0.362	-0.208	0.277	0.447	0.344
CES	0.381	**1.000**	0.163	0.331	0.515	0.357
Challenge1	-0.211	0.155	**0.942**	-0.159	-0.048	-0.195
Challenge2	-0.204	0.244	**0.923**	0.003	-0.031	-0.147
Challenge3	-0.167	-0.006	**0.784**	-0.335	-0.246	-0.403
ORI1	0.317	0.254	-0.193	**0.851**	0.570	0.361
ORI2	0.277	0.238	-0.111	**0.879**	0.587	0.344
ORI3	0.338	0.432	-0.097	**0.710**	0.514	0.367
ORI4	0.369	0.184	-0.131	**0.845**	0.568	0.297
OSS1	0.566	0.424	-0.027	0.613	**0.858**	0.431
OSS2	0.532	0.433	-0.118	0.635	**0.912**	0.614
OSS3	0.351	0.492	-0.155	0.599	**0.787**	0.574
OSS4	0.626	0.403	-0.063	0.449	**0.841**	0.352
skill1	0.413	0.323	-0.229	0.409	0.584	**0.963**
skill2	0.433	0.350	-0.256	0.440	0.605	**0.937**
skill3	0.368	0.355	-0.248	0.393	0.536	**0.917**
skill4	0.293	0.293	-0.242	0.273	0.430	**0.905**

Source: *Own elaboration based on own results*

Inter-construct correlation involves the assessment of discriminant validity at the construct level based on the square root of the AVE using the criterion developed by Fornell and Larcker (1981). The square root of the AVE for each construct (diagonal cells) in the correlation matrix is greater than its correlation with the other constructs (off-diagonal cells). This indicates that every construct shares more variance with its hypothetical indicators than with any other indicators, Table 15 shows that the square root of AVE of each construct is greater than its correlations with other constructs, which indicates acceptable discriminant validity.

TABLE 14: DISCRIMINANT VALIDITY: INTER-CONSTRUCT CORRELATION

	AES	CES	Challenge	ORI	OSS	Skill
AES	**0.825**					
CES	0.381	**1.000**				
Challenge	-0.221	0.163	**0.886**			
ORI	0.394	0.331	-0.162	**0.824**		
OSS	0.607	0.515	-0.108	0.681	**0.851**	
Skill	0.411	0.357	-0.262	0.414	0.586	**0.931**

On-diagonal elements (bold fonts) are the square roots of AVE.

Off-diagonal elements are the estimation of constructs' correlation.

Source: *Own elaboration based on own results*

The Heterotrait-Monotrait Ratio (HTMT) criterion provides assessment for the discriminant validity of measures in SEM; this is by evaluating the degree to which two constructs are more strongly related to their own measures compared to measures of other constructs. The concept of this criterion is to compare the correlations between constructs and the correlations between distinct indicators of the same construct. The ratio obtained from this comparison serves as an indicator of whether the constructs exhibit a stronger association with their own measures than to measures of other constructs, whereas the ratio of HTMT should be below the threshold value of 0.90 (Fassott et al. 2016). Noting that a lower HTMT ratio is associated with a higher level of discriminant validity, which indicate that the measures used in the study are distinct and capture

unique aspects of the constructs under investigation. Table 16 shows the matrix of HTMT, where all values in the HTMT matrix are below the recommended threshold value of 0.90. The findings demonstrate a concrete discriminant validity, as the constructs have stronger relationships with their own indicators than with indicators of other constructs. Overall, the obtained results of the three criteria of measures illustrate adequate support for discriminant validity.

TABLE 156: DISCRIMINANT VALIDITY: HETEROTRAIT-MONOTRAIT RATIO CRITERION (HTMT) OF INTER-CONSTRUCT CORRELATION

	AES	CES	Challenge	ORI	OSS	Skill
AES						
CES	0.392					
Challenge	0.268	0.165				
ORI	0.465	0.368	0.233			
OSS	0.696	0.552	0.164	0.791		
Skill	0.442	0.364	0.311	0.458	0.629	

Source: Own elaboration based on own results

5.3. Structural Model Analysis and Hypotheses Testing

Figure 18 provides an illustration of the final structural model, which depicts the factor loading of indicator items and the standardized regression path coefficients as well as their respective significances. The latent variables in the measurement model were represented in the proposed SEM model in the following manner. The two constructs of Individual characteristic and experience (Skill and Challenge) are entered in the SEM model as exogenous independent variables, while the flow state constructs (AES and CES) and use outcomes constructs (OSS and ORI) are entered into the model as endogenous variables that are influenced by the exogenous variables.

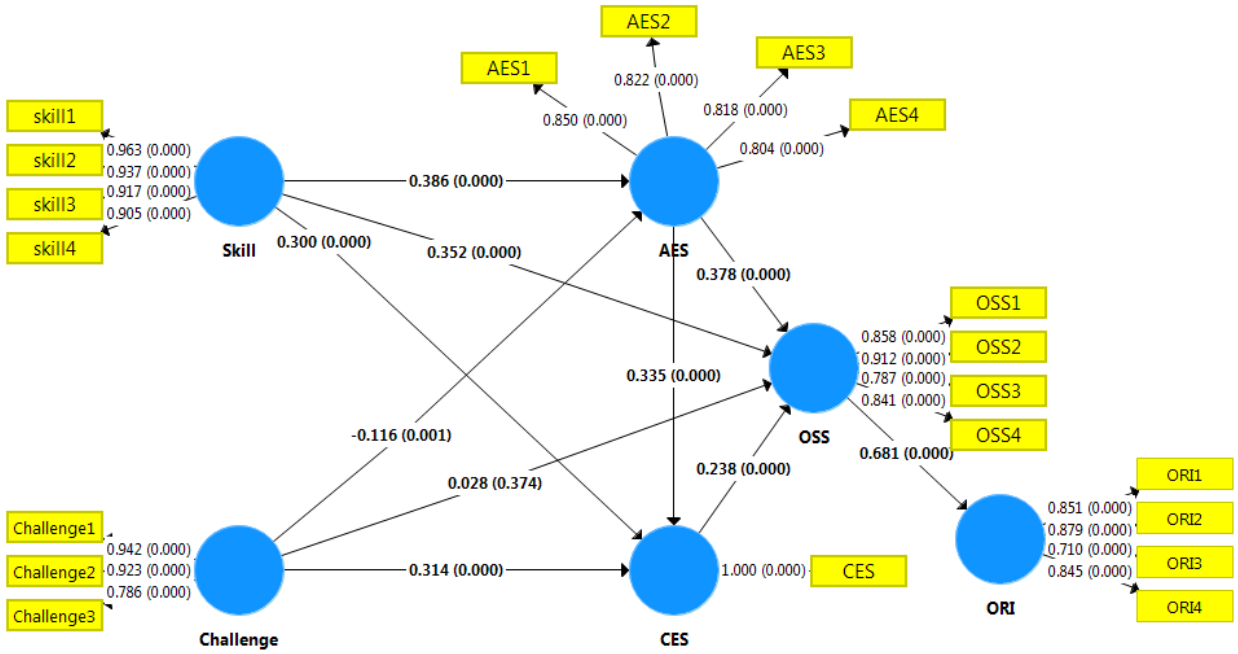


FIGURE 18: : STANDARDIZED PATH COEFFICIENTS OF THE STRUCTURAL MODEL

Source: *Own elaboration based on own results*

5.3.1. Inner Model Measurement

In the context of SEM, the inner model represents the theoretical aspects of the path model, which examines the correlation between latent variables in the structural model (Hair Jr et al. 2017). This study aims to assess the relationship between skill and challenge on consumers' online repurchase intention through the mediating roles of affective and cognitive experiential states. To determine the extent of this relationship, the structural model was evaluated using the PLS algorithm and a bootstrap technique in the process of estimating the inner model. This was carried out to evaluate the statistical significance of the proposed theoretical framework.

In order to assure the stability of the parameters, the researcher adopts the parameter settings suggested by Hair Jr et al., (2017). A significance threshold of 5% was used in conjunction with 300 iterations of the PLS algorithm and 5000 samples from the bootstrap subsamples. Additionally, no sign changes option, and the confidence interval technique used a bias-corrected with two-tailed approach. This study employs the Vinzi, Trinchera, and Amato (2010) criteria measures to evaluate the quality of the model and the statistical significance of the hypothesized relationships between the latent variables, which is as follow: goodness-of-fit, determination coefficient (R-Square), and path coefficients.

5.3.1.1. Goodness-of-Fit and Q- Square

The evaluation of the structural model's goodness-of-fit measures is necessary to determine the model's ability to accurately depict the causal relationships within the given set of variables. In the present study, the evaluation of model fit in SmartPLS for the structural model was conducted using the three most commonly used fit measures, namely the Fit Index (NFI), Theta of Root Mean Square (RMS_{theta}), and the Root Mean Square Residual (SRMR). The threshold values for the three measures of model fit were applied according to the recommendations of existing literature: NFI > 0.9 (Carroll et al. 2002), RMS_{theta} < 0.12 (Henseler, Ringle, and Sarstedt 2014), and SRMR < 0.08 (Hu and Bentler 1999). As shown in Table 17 the study records NFI, RMS_{theta}, and SRMR values of 0.945, 0.116, and 0.071, respectively. These values fall within the accepted ranges for the three indices, and therefore, the study's model is accepted since all fitness indices were within the desired limits.

TABLE 16: INNER MODEL MEASUREMENT: GOODNESS OF MODEL FIT, R-SQUARE, AND PATH COEFFICIENTS

	Evaluation Criteria	Current study
Goodness of model fit		
NFI	NFI > 0.9	NFI > 0.945
RMS_{theta}	$RMS_{theta} < 0.12$	$RMS_{theta} < 0.116$
SRMR	SRMR < 0.08	SRMR = 0.071
Structural model		
R^2 value (explanatory power)	$R^2 = 0.25$ (weak) $R^2 = 0.50$ (moderate) $R^2 = 0.75$ (substantial)	$R^2_{AES} = 0.186$ (weak) $R^2_{CES} = 0.289$ (weak) $R^2_{OSS} = 0.556$ (moderate) $R^2_{ORI} = 0.463$ (moderate)
Direct effect	Path coefficients	See Figure 5.4

Source: *Own elaboration based on own results*

5.3.1.2. Coefficient of Determination

The evaluation of the determination coefficient (R2) value serves as a metric for assessing the predictive power of the path model. As per the research conducted by Hair Jr et al. (2017), the determination coefficient value represents the collective impact of the exogenous latent variables on the endogenous latent variables. The results of the structural model indicate satisfactory levels of variance in the endogenous latent variables, which account for the variance in AES (18.6%), CES (28.9%), OSS (55.6%), and ORI (46.3%).

5.3.1.3. Collinearity

The issue of collinearity frequently arises in descriptive data sets when attempting to estimate regression analyses. This is due to the variance inflation of regression parameters, which can result in the failure to identify relevant predictors. A collinearity test was conducted to examine the variance inflation factors (VIFs) associated with unobserved factor variables that impact the observed collinear factor, where the threshold value of VIF should be less than 2.5, as VIF ≥ 2.5 indicates considerable collinearity (Johnston, Jones, and Manley 2018). Table 18 presents the VIF values of the unobserved factors (independent variables); all values of VIF are below 2.5. This indicates the absence of collinearity between these independent variables and the dependent variables (OSS and ORI).

TABLE 17: COLLINEARITY FOR INDEPENDENT VARIABLE ON THE DEPENDENT VARIABLE

Variable	Collinearity Statistics	
	Tolerance	VIF
Skill	0.717	1.394
Challenge	0.820	1.219
AES	0.692	1.444
CES	0.738	1.355

Source: *Own elaboration based on own results*

5.3.2. Hypothesis Testing

This study utilizes the flow theory to investigate how the customer experience affected consumers' online bookshop repurchases. The findings provide insightful information on the relationships between flow experience, AES, CES, OSS, and the challenges encountered while purchasing online. Thereby, the structural model's hypotheses were evaluated by assessing the R-Square (R^2), path coefficients (β), and *t*-values. According to Hair Jr et al. (2017), a path coefficient is considered statistically significant if the *t*-value is equal to or greater than 1.96. The findings of the first ten hypotheses are presented in Table 19, which displays the analysis outcomes of the structural model. The table highlights the path coefficients and hypotheses of the model, indicating eight hypotheses were statistically significant and supported in the SEM model.

Table 19 presents the findings of the structural model's hypotheses and path coefficient analysis, indicating significant correlations for eight hypotheses in the model. The results of this study indicate that there is a significant positive correlation between skill and AES ($\beta = 0.386$, $p < 0.001$), CES ($\beta = 0.300$, $p < 0.001$), and OSS ($\beta = 0.352$, $p < 0.001$), which provides support for hypotheses H1, H2, and H3. The results show that Challenge has a statistically significant positive effect on CES ($\beta = 0.314$, $p < 0.001$), thereby providing support for H5. The study found that AES has a statistically significant positive impact on both CES ($\beta = 0.335$, $p < 0.001$) and OSS ($\beta = 0.378$, $p < 0.001$), thus providing support for H7 and H8. Additionally, the results point out that CES has a significant positive effect on OSS ($\beta = 0.238$, $p < 0.001$), which supports H9. In turn, OSS contributes significantly to a strong positive effect on ORI ($\beta = 0.681$, $p < 0.001$). In contrast, the proposed path H4 (Challenge to AES) and H6 (Challenge to OSS) contributed invers coefficient and displayed non-significance effects, respectively.

TABLE 18: PATH COEFFICIENTS: STATISTICAL MEASURES AND HYPOTHESIZED RESULTS

H#	Path link	Path coefficient	STD	T-values	P Values	Results
H1	Skill -> AES	0.386	0.039	9.996	0.000	Supported
H2	Skill -> CES	0.300	0.038	7.909	0.000	Supported
H3	Skill -> OSS	0.352	0.032	11.118	0.000	Supported
H4	Challenge -> AES	-0.116	0.036	3.250	0.001	Rejected
H5	Challenge -> CES	0.314	0.044	7.070	0.000	Supported
H6	Challenge -> OSS	0.028	0.031	0.889	0.374	Rejected
H7	AES -> CES	0.335	0.031	10.706	0.000	Supported
H8	AES -> OSS	0.378	0.028	13.681	0.000	Supported
H9	CES -> OSS	0.238	0.030	7.919	0.000	Supported
H10	OSS -> ORI	0.681	0.021	31.914	0.000	Supported

Source: *Own elaboration based on own results*

Hypothesis 1: The level of skill a consumer has when shopping online will have a positive impact on their affective experiential state.

The findings of this study indicate that there is a positive correlation between the skill levels of customers and their affective experiences in the context of an online bookstore, as demonstrated by a path coefficient of 0.386 ($T = 9.996$, $p < 0.001$). The findings suggest that customers who possess higher navigational skills are more likely to report positive affective experiences.

Hypothesis 2: The level of skill a consumer has when shopping online will have a positive impact on their cognitive experiential state.

The findings of this research showed evidence to support Hypothesis 2, which suggests that competence has a substantial and significant positive influence on CES. The path coefficient for this relationship was determined to be 0.300 (T = 7.909, p 0.001) in the analysis of this study. This suggests that the consumers' ability levels have a favorable impact on their cognitive engagement and the degree to which they immerse themselves in the online bookshop. Customers with greater skill levels are more competent at utilizing the platform's features and capabilities, which results

in superior cognitive experiences for those customers who are shopping online. These results are consistent with previous research emphasizing the impact of consumer skills on cognitive processes (Hoffman and Novak 2009; Novak, Hoffman, and Yung 2000). (Hoffman and Novak 2009), (Novak et al. 2000)

Hypothesis 3: The level of skill a consumer has when shopping online will have a positive impact on their online shopping satisfaction.

The research findings demonstrate a significant correlation between an individual's skill level and their level of satisfaction with online shopping. The path coefficient for this relationship is 0.352, with a T-value of 11.118 and a p-value of less than 0.001. The finding indicates that there exists a positive correlation between customers skill levels and their overall satisfaction with the purchasing experience at the online bookstore. The level of customer satisfaction is positively correlated with their proficiency in utilizing the platform and making purchasing decisions.

Hypothesis 4: The level of challenge a consumer face when shopping online will have a positive impact on their affective experiential state.

It seems that there is a significant negative correlation between challenge and AES, as indicated by the path coefficient of -0.116 (T = 3.250, p = 0.001). The current study suggests that there exists a negative relationship between the perceived difficulty level of an online bookstore and the affective experiences of its customers. Specifically, a higher level of perceived challenge in the online bookstore is associated with a decrease in customers' affective experiences. The study suggests that when customers encounter excessive challenges or difficulties while using an online bookstore, it may negatively impact their ability to have positive affective experiences.

Hypothesis 5: The level of challenge a consumer face when shopping online will have a positive impact on their cognitive experiential state.

The study findings indicate that there are substantial positive relationships between the cognitive experiential state (CES) and the level of difficulty of the task at hand, with a path coefficient of 0.314 (T = 7.070, p 0.001). The present study suggests that increased levels of perceived challenge in the context of an online bookstore may lead to heightened cognitive engagement and immersion during the browsing and purchasing experiences. According to these results, modest obstacles have

the potential to have a favorable impact on the cognitive experiences of consumers (Hoffman and Novak 2009; Novak, Hoffman, and Yung 2000).

Hypothesis 6: The level of challenge a consumer face when shopping online will have a positive impact on their overall online shopping satisfaction.

The study found major evidence for rejecting H6, showing that challenge has insignificant path coefficient of 0.028 (T = 0.889, p = 0.374) on OOS. Therefore, there is no significant statistical relationship between the level of challenges experienced by customers during online shopping and their level of satisfaction with the overall experience. This indicates that the degree of challenges that customers face during their online bookstore experience does not have a statistically significant impact on their overall level of satisfaction. Further research is needed to explore some additional variables or mediators that could potentially influence the associated link between challenge and online satisfaction.

Hypothesis 7: The affective experiential state of consumers while shopping online will have a positive impact on their cognitive experiential state.

A significant positive relationship between AES and CES was observed, as indicated by the path coefficient of 0.335 (t = 10.706, $p < 0.001$). The present study indicates that favorable affective experiences in the online bookstore can amplify the cognitive engagement and absorption of customers in the exploration and purchasing processes. The findings presented in this study are consistent with prior research that has emphasized the impact of affective experiences on the functioning of cognition (Rose et al. 2012).

Hypothesis 8: Affective experiential state has positive impact on online shopping satisfaction.

The research findings indicate a noteworthy correlation between AES and OSS. The path coefficient of this relationship is 0.378, with a t-value of 13.681 and a p-value of less than 0.001. This suggests that when consumers have pleasant emotional experiences in the online bookshop, it results in greater levels of satisfaction with their completely purchasing experience. These results are in line with other research (Rose et al. 2012) that emphasized the influence of emotional experiences on consumer satisfaction.

Hypothesis 9: Cognitive experiential state has positive impact on online shopping satisfaction.

A statistically significant correlation was observed between CES and OSS, as evidenced by a path coefficient of 0.238 ($T = 7.919$, $p < 0.001$). This implies that consumers' cognitive involvement with and absorption in the online bookshop favorably influences their pleasure with the whole buying experience. These results are consistent with other research that emphasizes how cognitive processes influence consumer satisfaction (Rose et al. 2012).

Hypothesis 10: Online shopping satisfaction has positive impact on online repurchase intention.

A significant positive relationship between OSS and ORI was observed, as indicated by the path coefficient of 0.681 ($T = 31.914$, $p < 0.001$). The findings suggest that an increase in the level of satisfaction with the online bookstore experience is positively associated with a higher likelihood of intending to repurchase from the same platform. This result is consistent with a previous study that highlighted the relationship between satisfied customers and a desire to make more purchases (Rose et al. 2012; Saha et al. 2022).

The present study displays the outcomes of the indirect effects of the exogenous constructs of skill and challenges through AES and CES to OSS and ORI. These results are presented in Table 20 and are reported at a confidence interval of 2.50% and 97.50%. The present study investigates the role of the endogenous construct AES and CES in mediating the relationships between the exogenous constructs AES and CES, and the dependent constructs OSS and ORI, in the context of online books shopping.

TABLE 20: PATH COEFFICIENTS: STATISTICAL MEASURES AND INDIRECT EFFECTS

Direct Effect				Indirect Effect						
H#	Path link	Path coeff.	T	Path link	Path coeff.	T	P Values	2.5%	97.5%	Mediation
H11	Skill -> AES	0.386	9.996	Skill -> AES -> CES	0.129	6.220	0.000	0.093	0.174	Partial*
H12	Challenge -> CES	0.314	7.070	Challenge -> AES -> CES	-0.039	3.127	0.002	-0.064	-0.016	Partial*
H13	Skill -> OSS	0.352	11.118	Skill -> AES -> OSS	0.146	7.291	0.000	0.109	0.187	Partial*
H14	Skill -> OSS	0.352	11.118	Skill -> CES -> OSS	0.071	5.183	0.000	0.046	0.098	Partial*
H15	Challenge -> OSS	0.028	0.889	Challenge -> AES -> OSS	-0.044	3.352	0.001	-0.070	-0.018	Full
H16	Challenge -> OSS	0.028	0.889	Challenge -> CES -> OSS	0.075	5.372	0.000	0.048	0.101	Full
H17	AES -> OSS	0.378	13.681	AES -> CES -> OSS	0.080	6.270	0.000	0.056	0.106	Partial*

* - Complementary (partial mediation); $ - Competitive (partial mediation)

Source: *Own elaboration based on own results*

Hypothesis 11: The relationship between skill and cognitive experiential state is mediated by affective experiential state.

The findings show that there is a mediation of AES in the relationship between skill and CES. The path coefficient shows a substantial indirect influence, which was calculated to be 0.129 ($T = 6.220$, $p < 0.001$). The results indicate that the proficiency of customers has a positive impact on their AES, which ultimately affects their CES. These results are consistent with existing research that placed an emphasis on the function that emotional experiences have in developing cognitive processes. It suggests that when consumers exhibit more abilities in navigating the online bookshop, they are more likely to have good affective experiences, leading to improved cognitive engagement and pleasure during their browsing and purchase activities. This is because customers who possess greater skills in navigating the online bookstore are more likely to be able to find what they are looking for.

Hypothesis 12: The relationship between challenge and cognitive experiential state is mediated by affective experiential state.

The analysis reveals that the challenge has a significant indirect effect on CES via AES. A negative relationship was observed with a path coefficient of -0.039 ($T = 3.127$, $p < 0.002$). According to the study's findings, there is a negative correlation between customers' perceptions of challenge and their AES during their online bookstore experiences. In turn, it has an impact on their CES. Previous research demonstrated the effect of difficulty on emotional experiences and subsequent cognitive engagement (Shim et al. 2001), which is consistent with the findings of this research. It means that too many hurdles or difficulties encountered by consumers in the online bookshop may have a negative impact on their emotional state, which restricts their ability to participate in cognitive activity and be satisfied with the entire experience.

Hypothesis 13: The relationship between skill and online shopping satisfaction is mediated by affective experiential state.

The study found that there is a significant mediating effect of affective experiential state between skill and online shopping satisfaction. The findings of the study reveal that there exists a positive indirect impact of skill on online shopping satisfaction through affective experiential state, as evidenced by a path coefficient of 0.146 ($T = 7.291$, $p < 0.001$). This indicate that there is a positive

correlation between customers' skill levels and their affective experiences. In turn, this has a significant impact on their overall satisfaction with the online bookstore. The research suggests that there is a positive correlation between customers' perceived competence in utilizing an online bookstore and their affective experiences, resulting in higher levels of customer satisfaction.

Hypothesis 14: The relationship between skill and online shopping satisfaction is mediated by cognitive experiential state.

The results show that there is a statistically significant indirect influence of skill level on satisfaction resulting from online shopping, and the CES mediates this effect. A positive relationship was observed with a path coefficient of 0.071 ($T = 5.183$, $p < 0.001$). This indicates that there is a positive correlation between the skill levels of customers and their cognitive engagement, which in turn leads to increased satisfaction with the experience of using an online bookstore. These findings suggest that customers with higher levels of skill are more capable of effectively navigating the online bookstore and engaging in cognitive processes, leading to a greater level of satisfaction with their shopping experience.

Hypothesis 15: The relationship between challenge and online shopping satisfaction is mediated by affective experiential state.

According to the findings of the study, there is a considerable indirect influence of the element of challenges on the level of satisfaction obtained from engaging in online shopping. A negative relationship is suggested by the path coefficient of -0.044 ($T = 3.352$, $p = 0.001$). The findings indicate heightened levels of challenge in the online bookstore interface may result in a reduction in customer satisfaction.

Hypothesis 16: The relationship between challenge and online shopping satisfaction is mediated by cognitive experiential state.

A significant positive relationship was found between the CES and the challenge, with a path coefficient of 0.075 ($T = 5.372$, $p < 0.001$). In addition, a significant positive relationship was found between CES and OSS, with a path coefficient of 0.080 ($T = 6.270$, $p < 0.001$). This indicates that the introduction of challenging tasks has a favorable effect on the CES. Consequently, cognitive factors have a constructive influence on the level of satisfaction experienced by online shoppers.

CHAPTER VI – DISCUSSION AND CONCLUSIONS

In this doctoral dissertation, the impact of online shopping experiences on the repurchase intentions of customers who made purchases (purchased books) from the idefix.com website was investigated drawing on social psychology and the theory of flow (Csikszentmihályi, 1975, 1990) For this purpose, 16 hypotheses were formulated and tested. Modified model based on Rose et al.'s (2012) model to explain the relationship between flow experience and repeat purchase behavior in the context of Turkey's Online Bookstore.

The results suggest that there are significant relationships between various factors in the context of online shopping experiences. Specifically, the findings indicate that **consumers' skills positively influence their affective experiential state, which in turn affects their online shopping satisfaction**. Additionally, challenges have a mixed effect on consumer experiences, with some relationships being significant and others not. **These findings highlight the importance of considering both the skills and challenges that users encounter during their online shopping journey**.

Furthermore, the results exlored the mediating role of affective experiential state in the relationship between skills, challenges, and online shopping satisfaction. This implies that the affective experiences that consumers have while engaging in online shopping play a significantrole in shaping their overall satisfaction with the process.

Moreover, the study findings indicate that **online shopping satisfaction has a strong positive impact on consumers' intention to repurchase from idefix.com**. This highlights the importance of providing a positive and satisfactory online shopping experience to encourage repeat purchases and foster customer loyalty.

Our results suggest and shows that understanding and managing users' skills, addressing challenges effectively, and creating positive affective experiences are crucial for enhancing online shopping satisfaction and fostering customer loyalty in the context of idefix.com. These insights can inform strategies and decision-making processes for idefix.com to improve their platform and provide a more satisfying online shopping experience for their customers.

6.1. Theoretical Implications

The results of this study shed light on the complex dynamics of online shopping experiences and their impact on consumer satisfaction and repurchase intentions. By examining the relationships between skills, challenges, affective experiential states, and online shopping satisfaction, this research provides valuable insights for both researchers and practitioners in the field of e-commerce. The findings highlight the importance of understanding and effectively managing the factors that contribute to consumers' online shopping experiences, particularly in the context of idefix.com.

The theoretical implications of the research are linked to the following:

The role of skills: The positive and significant relationship between skills and both the affective and cognitive experiential states suggests that consumers' proficiency and competence in using the online bookstore platform (idefix.com) contribute to more positive and engaging experiences. This implies that enhancing users' skills and providing them with adequate support and resources can enhance their overall online shopping experiences.

The impact of challenges: While the relationship between challenges and the affective experiential state was not significant, the positive and significant relationship between challenges and the cognitive experiential state suggests that encountering moderate levels of challenges can stimulate users' cognitive engagement and problem-solving abilities. This implies that a balance should be maintained in presenting challenges to users, ensuring that they are neither too overwhelming nor too easy, to foster a more immersive and satisfying online shopping experience.

The influence of experiential states on online shopping satisfaction: The positive and significant relationships between both the affective and cognitive experiential states and online shopping satisfaction indicate that these states play a crucial role in shaping consumers' overall satisfaction with the online bookstore. This highlights the importance of designing and optimizing

the website interface, features, and content to evoke positive emotions and cognitive engagement, ultimately leading to higher satisfaction levels.

The link between online shopping satisfaction and repurchase intention: The strong and positive relationship between online shopping satisfaction and online repurchase intention emphasizes the significance of customer satisfaction as a driver of repeat purchases. Satisfied customers are more likely to develop loyalty towards the idefix.com platform and are inclined to revisit for future purchases. This highlights the importance of continuously improving and maintaining high levels of customer satisfaction to foster customer loyalty and repeat business.

The mediating role of the affective experiential state (AES): Relationship between skills and the affective experiential state (AES) is partially mediated by the cognitive experiential state (CES). The significant direct path from skills to AES indicates that users' proficiency in utilizing the idefix.com platform positively influences their affective experiences. However, the indirect path through CES implies that the cognitive state plays a partial mediating role in this relationship. This implies that while skills directly impact users' affective experiences, part of this influence is also mediated by their cognitive engagement.

The mediating role of CES in the relationship between challenge and online shopping satisfaction (OSS): Relationship between challenge and CES is partially mediated by skills. The significant direct path from challenge to CES indicates that encountering challenges during the online shopping process can stimulate users' cognitive engagement. However, the indirect path through skills suggests that users' proficiency moderates the influence of challenges on their cognitive state. This implies that users with higher skills are more adept at handling challenges, leading to increased cognitive engagement and subsequently higher online shopping satisfaction.

The mediating role of AES in the relationship between skills and OSS: Relationship between skills and online shopping satisfaction is partially mediated by the affective experiential state

(AES). The significant direct path from skills to OSS indicates that users' proficiency positively influences their satisfaction levels. However, the indirect path through AES suggests that part of the influence of skills on satisfaction is mediated by the affective state experienced during the online shopping process. This implies that users' emotional responses, such as enjoyment and excitement, contribute to their overall satisfaction with the idefix.com platform.

The combined mediation effect of CES and AES in the relationship between skills and OSS: Both the cognitive experiential state (CES) and the affective experiential state (AES) mediate the relationship between skills and online shopping satisfaction (OSS). The significant direct path from skills to OSS indicates that users' proficiency positively influences their satisfaction levels. The significant indirect path through both CES and AES suggests that both cognitive and affective states play a combined mediating role in this relationship. This implies that users' cognitive engagement and emotional experiences collectively contribute to their overall satisfaction with the online shopping experience on idefix.com.

These theoretical implications not only enhance our understanding of the complex dynamics between skills, challenges, experiential states, and online shopping satisfaction but also provide valuable insights for future research in the field. Researchers can further explore the specific mechanisms through which skills and challenges impact consumer experiences, delve into the role of different affective and cognitive components, and investigate additional factors that may influence online shopping satisfaction. Additionally, future studies can examine the generalizability of these findings across different e-commerce platforms and cultural contexts, allowing for a more comprehensive understanding of the factors influencing online consumer behavior. Overall, these contributions pave the way for future research to delve deeper into the complexities of online shopping experiences and provide practical guidance for idefix.com and other e-commerce platforms to enhance customer satisfaction and loyalty in context of repurchase intentions.

6.2. Expert Analysis and Managerial Implications

The online shopping landscape has witnessed significant growth in recent years,(Turkish Informatics Industry Association [Tubsiad], 2022), and understanding the factors that contribute to a positive user experience is crucial for businesses to thrive in this competitive environment. One aspect that plays a vital role in shaping consumers' satisfaction and purchase intentions is the concept of flow experiences (Chen et al., 2018). Flow experiences refer to the state of complete immersion and engagement that individuals feel when they are fully absorbed in an activity (Csikszentmihalyi, 1990). In the context of online book shopping, flow experiences are essential for creating a seamless and enjoyable browsing and purchasing process for customers.

In this analysis, we examine the flow experiences of online shoppers on idefix.com, a popular book shopping website. By employing a structural model, we investigate the standardized path coefficients to understand the relationships between different flow theory elements and flow experience outcomes in Table 21. The results provide valuable insights into the factors that significantly influence users' flow experiences and offer practical strategies for improvement that can help enhance the online shopping journey.

TABLE 19: FLOW EXPERIENCES AND STRATEGIES FOR IDEFIX.COM IMPROVEMENT

Flow Theory Element	Standardized Coefficient	Strategies / Recommendations for idefix.com Improvement
Skill to AES	0.386 ($p < 0.001$)	*Provide personalized book recommendations based on users' skills:* idefix.com can leverage user data, browsing history, and past purchases to offer personalized book recommendations that align with users' skills and interests. By implementing intelligent algorithms and machine

		learning techniques, the platform can analyze user behavior and preferences to provide tailored suggestions (Sarma et al., 2021).
Skill to OSS	0.352 ($p < 0.001$)	*Offer advanced search options for skilled users:* idefix.com can enhance the search functionality by implementing advanced filters, sorting options, and search algorithms. This would enable skilled users to quickly and efficiently find specific books or authors that match their expertise and interests. Providing options to refine search results based on genre, author, publication date, or language can greatly improve the browsing experience (Habuchi et al., 2006).
Skill to CES	0.300 ($p < 0.001$)	*Provide challenging book recommendations:* To cater to users seeking intellectual stimulation, idefix.com can curate a collection of challenging books across various genres. This can include thought-provoking literature, academic works, or books that delve into complex subjects (Di Noia Tommaso and Cantador, 2014). By highlighting these recommendations and providing a dedicated section for challenging reads, idefix.com can attract and engage users who are looking for intellectually stimulating content
Challenge to AES	-0.116 ($p = 0.001$)	*Offer interactive elements to maintain engagement:* To keep users engaged throughout their browsing experience, idefix.com can incorporate interactive elements. This can include features such as virtual book clubs, discussion forums, author interviews, or live chat support (Jun et al., 2004). By fostering a sense of community and interactivity, idefix.com can enhance user engagement and create a vibrant online book-loving community
Challenge to OSS	0.028 ($p = 0.374$)	*Simplify the checkout process for a seamless experience:* Streamlining the checkout process is crucial for a seamless and hassle-free user experience. idefix.com can optimize the checkout flow by minimizing the number of steps, reducing form fields, and providing

		clear instructions. Additionally, implementing convenient payment options and ensuring secure transactions will further enhance user satisfaction and encourage repeat purchases (Hossain & Zhou, 2018).
Challenge to CES	0.314 ($p < 0.001$)	*Gamify the browsing experience to enhance engagement:* To make the browsing experience more enjoyable and immersive, idefix.com can introduce gamification elements. This can include features such as progress bars, achievements, virtual badges, or rewards for certain actions like leaving reviews or participating in book-related challenges. Gamification can enhance user engagement, motivate exploration, and create a sense of accomplishment within the platform (Bauer et al., 2020).
Flow Experience Outcome		
AES to CES	0.378 ($p < 0.001$)	*Provide book recommendations based on emotional preferences:* To cater to users' emotional preferences, idefix.com can implement features that consider users' emotional states and recommend books accordingly. By leveraging sentiment analysis, user feedback, and emotional tagging, idefix.com can provide personalized book recommendations that resonate with users' emotional needs and preferences. This can enhance the emotional connection between users and the platform (Fujimoto & Murakami, 2022).
AES to OSS	0.238 ($p < 0.001$)	*Enhance customer support for positive emotional experiences:* To create positive emotional experiences for users, idefix.com should prioritize excellent customer support. Prompt and empathetic customer service through various channels such as live chat, email, or phone can address users' concerns, provide assistance, and create a positive emotional bond with the platform. Resolving issues efficiently and

		ensuring a pleasant customer support experience can lead to increased satisfaction and loyalty. (Jun et al., 2004)
CES to OSS	0.238 ($p < 0.001$)	*Simplify navigation and categorization for easier browsing:* idefix.com can optimize the website's navigation and categorization to make it easier for users to find and explore books. This can be achieved by improving the search functionality, implementing intuitive navigation menus, and providing clear categories and subcategories for book genres, authors, and themes. A user-friendly interface with logical organization and efficient filtering options will enhance the browsing experience, enabling users to find their desired books more easily. (Junaini & Sidi, 2007)
Repurchase Intention		
OSS to ORI	0.681 ($p < 0.001$)	*Offer loyalty rewards and incentives for repeat purchases:* To encourage repeat purchases and foster customer loyalty, idefix.com can implement a loyalty program. This program can offer rewards and incentives such as exclusive discounts, freebies, or early access to new book releases for loyal customers. By acknowledging and appreciating their support, idefix.com can strengthen the relationship with customers and incentivize them to continue shopping on the platform. (Gorlier & Michel, 2020).

Source: *Authors own development*

Note: *The table displays the standardized coefficients for each path in the structural model, indicating the strength and direction of the relationships. The "p" values are provided in parentheses.*

We also elaborated on the findings to provide and expert analysis to suggest some managerial implications to website designers.

Expert Analysis and Managerial Implications:

Skill:

According to the analysis, providing personalized book recommendations based on users' skills (Skill to AES) can enhance the flow experience and increase users' affective and cognitive engagement. This finding suggests that businesses should leverage user data, browsing history, and preferences to offer tailored suggestions that align with users' skill levels, increasing their satisfaction and immersion in the online book shopping experience. Implementing advanced search options for skilled users (Skill to OSS) is another effective strategy for improving the browsing experience (Habuchi et al., 2006). By incorporating filters, sorting options, and advanced search algorithms, businesses can empower users to find specific books or authors more efficiently, thereby enhancing their skill-based browsing experience (Sarma et al., 2021).

Challenge:

The analysis highlights the importance of interactive elements throughout the website (Challenge to AES) in maintaining users' engagement and flow experience. Introducing features such as interactive quizzes, virtual book clubs, or discussion forums can encourage user participation and immersion, fostering a sense of challenge and enjoyment. Simplifying the checkout process (Challenge to OSS) is also crucial for a seamless user experience (Hossain & Zhou, 2018). By streamlining the steps, reducing form fields, and providing clear instructions, businesses can minimize friction and ensure a smooth transaction process, contributing to users' overall satisfaction (Jun et al., 2004). Furthermore, gamifying the browsing experience (Challenge to CES) by incorporating game-like elements such as progress bars, achievements, or rewards can enhance user engagement and motivation, making the book shopping journey more enjoyable and immersive (Bauer et al., 2020).

Flow Experience Outcome:

The analysis suggests that providing book recommendations based on emotional preferences (AES to CES) can significantly impact users' flow experience outcomes. By incorporating features like mood-based book lists, emotional tagging, or sentiment analysis, businesses can create a more

personalized and emotionally engaging experience, resonating with users' preferences and enhancing their affective and cognitive states. Enhancing customer support (AES to OSS) is another crucial strategy for improving flow experience outcomes(Fujimoto & Murakami, 2022). By offering prompt and empathetic customer support, businesses can address users' concerns and ensure positive emotional experiences, thereby increasing overall satisfaction. Simplifying navigation and categorization (CES to OSS) is also recommended to facilitate easier browsing and information retrieval, contributing to users' flow experience outcomes. (Junaini & Sidi, 2007).

Repurchase Intention:

The analysis reveals a strong relationship between online shopping satisfaction and repurchase intention (OSS to ORI). To encourage repeat purchases, businesses should consider implementing loyalty rewards and incentives, such as exclusive discounts, personalized offers, or a customer loyalty program. These strategies can enhance customers' commitment to the website and vendor, increasing the likelihood of repurchase and fostering long-term customer loyalty. (Gorlier & Michel, 2020)

By incorporating these expert analyses and managerial implications, businesses operating in the online book shopping industry can optimize their strategies to create a more engaging, personalized, and seamless experience for their users. Understanding the factors that contribute to flow experiences and leveraging these insights can lead to increased customer satisfaction, loyalty, and ultimately, business success in the competitive online marketplace.

6.3. Limitations

The research investigating the impact of user experience in Turkey's online bookstore, specifically focusing on the application of flow theory, is not without its limitations. Firstly, the generalizability of the findings may be restricted to the specific context of Turkey's online bookstore and may not be applicable to online bookstores in other countries or regions with different cultural, economic, or technological landscapes. Additionally, the sample used in the study may not fully represent the diversity of the target population, limiting the generalizability of the results to all online book shoppers in Turkey. The reliance on self-reported data, such as survey responses, introduces the potential for recall bias and social desirability bias, as participants may provide responses influenced by their perception of societal expectations. Moreover, the study's cross-sectional design, capturing data at a single point in time, restricts the ability to establish causal relationships and understand changes in variables over time. The measurement instruments used to assess variables may have limitations in terms of validity and reliability, which could impact the accuracy and robustness of the results. Additionally, the research may have overlooked other factors that could influence online book purchasing behavior, such as price, product variety, or customer reviews. It is important to acknowledge these limitations in order to interpret the findings appropriately and understand the scope of the research.

6.4. Future Research

Future research in the field of user experience in online bookstores can benefit from the following recommendations. Firstly, conducting cross-cultural and cross-regional studies will provide a more comprehensive understanding of user experiences by examining online bookstores in different countries or regions with diverse cultural, economic, and technological contexts. This comparative approach can shed light on the influence of cultural and contextual factors on user behavior and satisfaction.

Secondly, future studies should aim to include larger and more diverse samples that better represent the target population of online book shoppers in Turkey. By incorporating participants

from various demographic backgrounds and geographic regions, the generalizability of the findings can be enhanced.

To gain insights into the dynamic nature of user experiences, longitudinal research designs capturing data at multiple time points should be employed. This longitudinal approach will enable researchers to examine causal relationships and identify temporal patterns in user behavior and satisfaction.

A mixed methods approach, combining quantitative data with qualitative research methods like interviews or focus groups, can provide a deeper understanding of users' experiences. This comprehensive approach will help uncover additional factors that may influence online book purchasing behavior and capture rich insights into user perspectives.

Improving measurement instruments used to assess user experiences in online bookstores is crucial. Future research should focus on developing and validating measurement tools that accurately and reliably capture the nuances of user experiences. This will strengthen the robustness of the findings and ensure the validity of the measures used.

In addition, it is important for future research to delve into other factors that can impact online book purchasing behavior. These factors include price, product variety, customer reviews, and website design features. By investigating these variables, we can gain a more comprehensive understanding of what drives user satisfaction and their intentions to repurchase.

By taking these recommendations into account, future studies can build upon the findings of this research and make meaningful contributions to the field of user experience in online bookstores and other online retailers. The valuable insights gained from these studies will provide practitioners with the necessary knowledge to optimize their platforms and enhance customer satisfaction.

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APPENDICES

Appendix A – Background Statistics - The Assessment of Univariate Outliers for The Indicator Items

TABLE A.1: UNIVARIATE OUTLIERS: THE STANDARDIZED SCORES OF INDICATOR ITEMS

Indicator items	z-scores	
	Minimum	Maximum
Zscore: Skill1	-2.848	0.782
Zscore: Skill2	-2.850	0.914
Zscore: Skill3	-2.814	0.834
Zscore: Skill4	-2.805	0.911
Zscore: Challenge1	-1.337	1.809
Zscore: Challenge2	-1.429	2.036
Zscore: Challenge3	-1.212	1.999
Zscore: Challenge4	-1.906	1.855
Zscore: CES	-1.917	1.312
Zscore: AES1	-2.774	1.013
Zscore: AES2	-2.340	1.277
Zscore: AES3	-2.868	1.131
Zscore: AES4	-2.512	1.370
Zscore: AES5	-2.440	1.500
Zscore: AES6	-2.004	1.543
Zscore: AES7	-2.450	1.542
Zscore: AES8	-2.080	1.700
Zscore: OSS1	-3.073	1.479
Zscore: OSS2	-2.228	1.368
Zscore: OSS3	**-3.552**	1.350
Zscore: OSS4	-2.277	1.342
Zscore: ORI1	-3.161	1.299
Zscore: ORI2	-2.844	1.218
Zscore: ORI3	-2.333	1.384
Zscore: ORI4	**-3.497**	1.420

The standardized scores of indicator items (i.e., Zscore: FM1) of latent variables

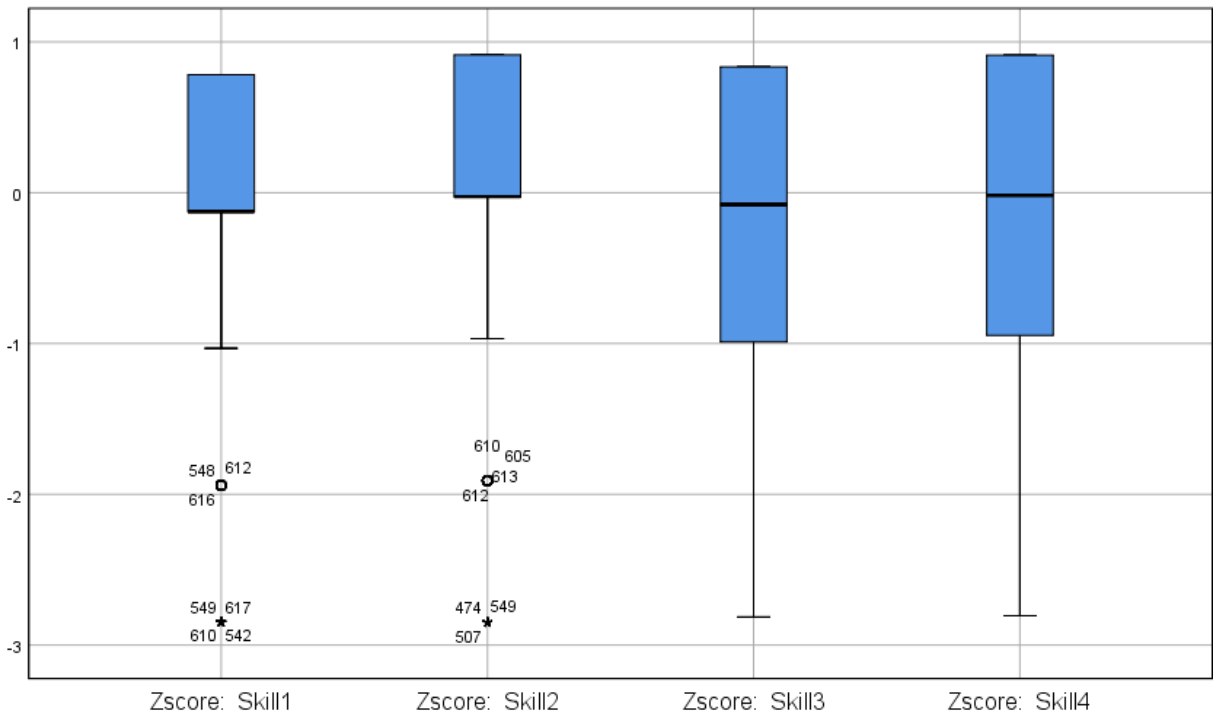


FIGURE A.1: BOX-PLOT OF UNIVARIATE OUTLIERS: THE STANDARDIZED SCORES OF INDICATOR ITEMS OF SKILL

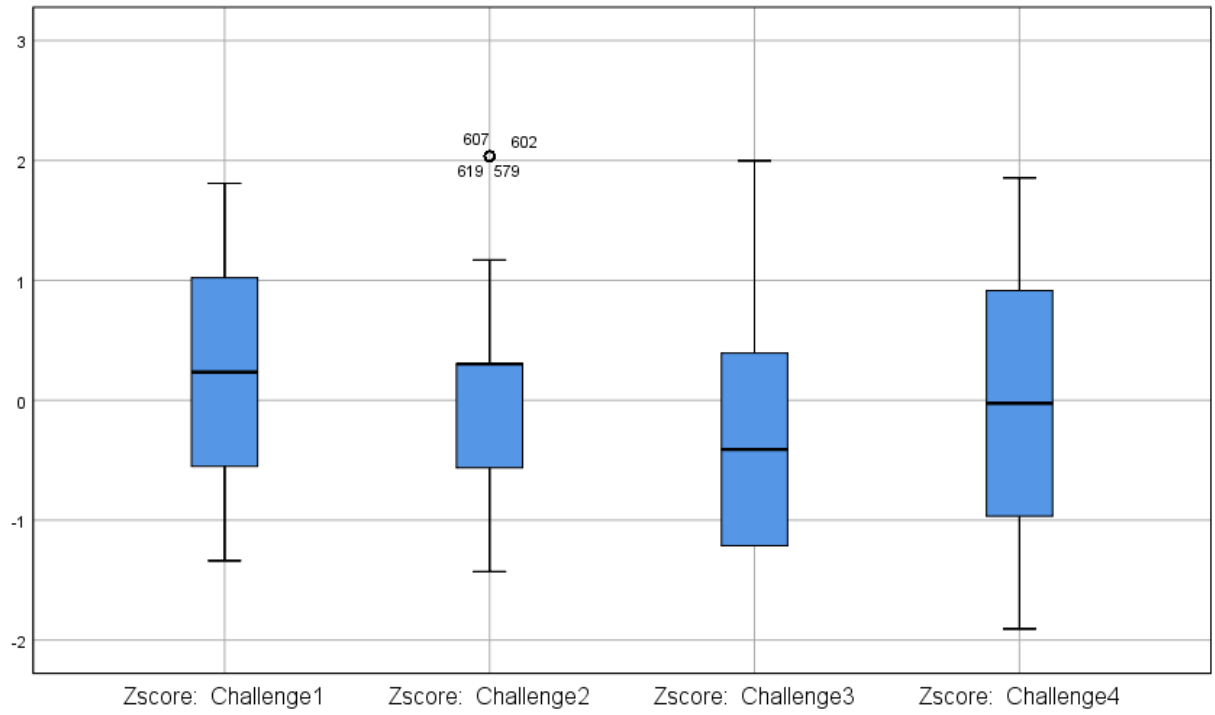


FIGURE A.2: BOX-PLOT OF UNIVARIATE OUTLIERS: THE STANDARDIZED SCORES OF INDICATOR ITEMS OF CHALLENGES

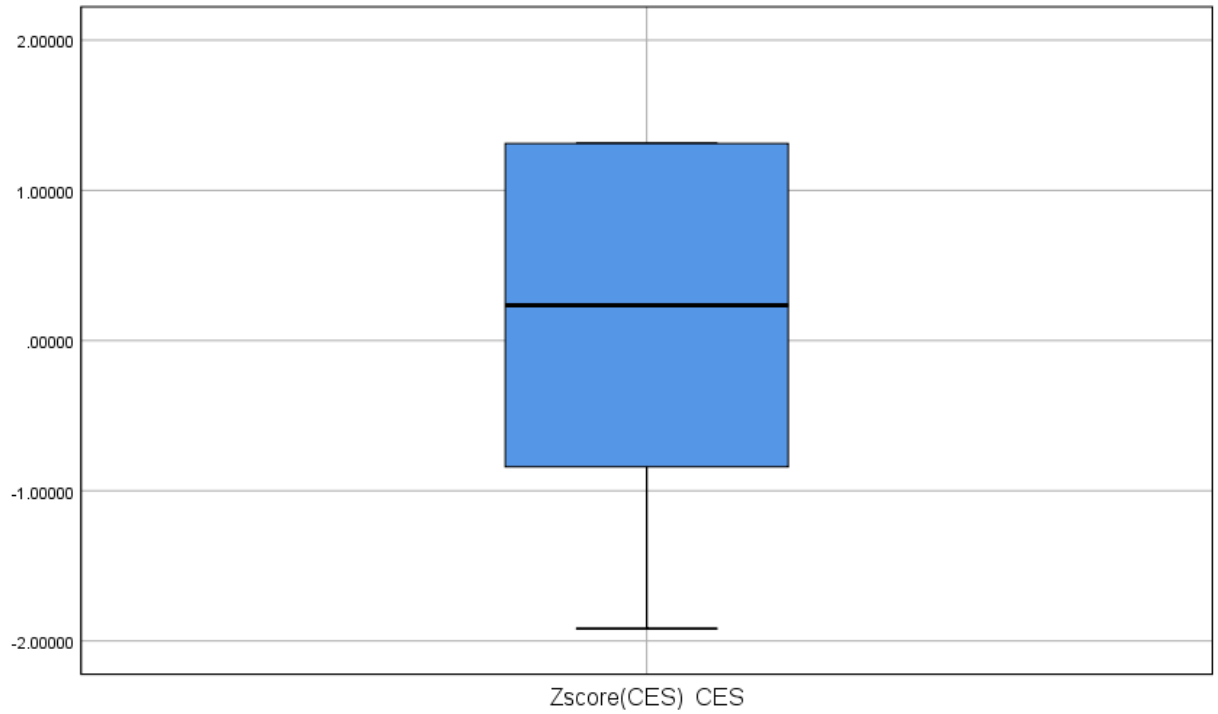


FIGURE A.3: BOX-PLOT OF UNIVARIATE OUTLIERS: THE STANDARDIZED SCORES OF INDICATOR ITEMS OF CES

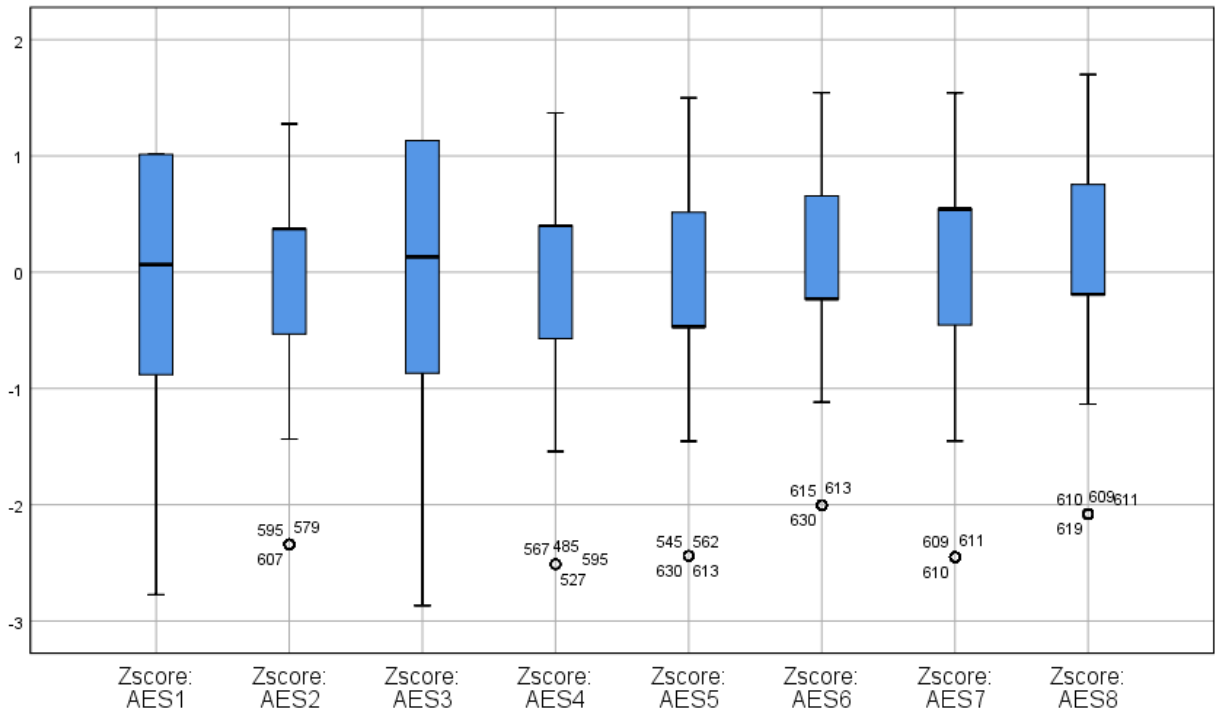


FIGURE A.4: BOX-PLOT OF UNIVARIATE OUTLIERS: THE STANDARDIZED SCORES OF INDICATOR ITEMS OF AES

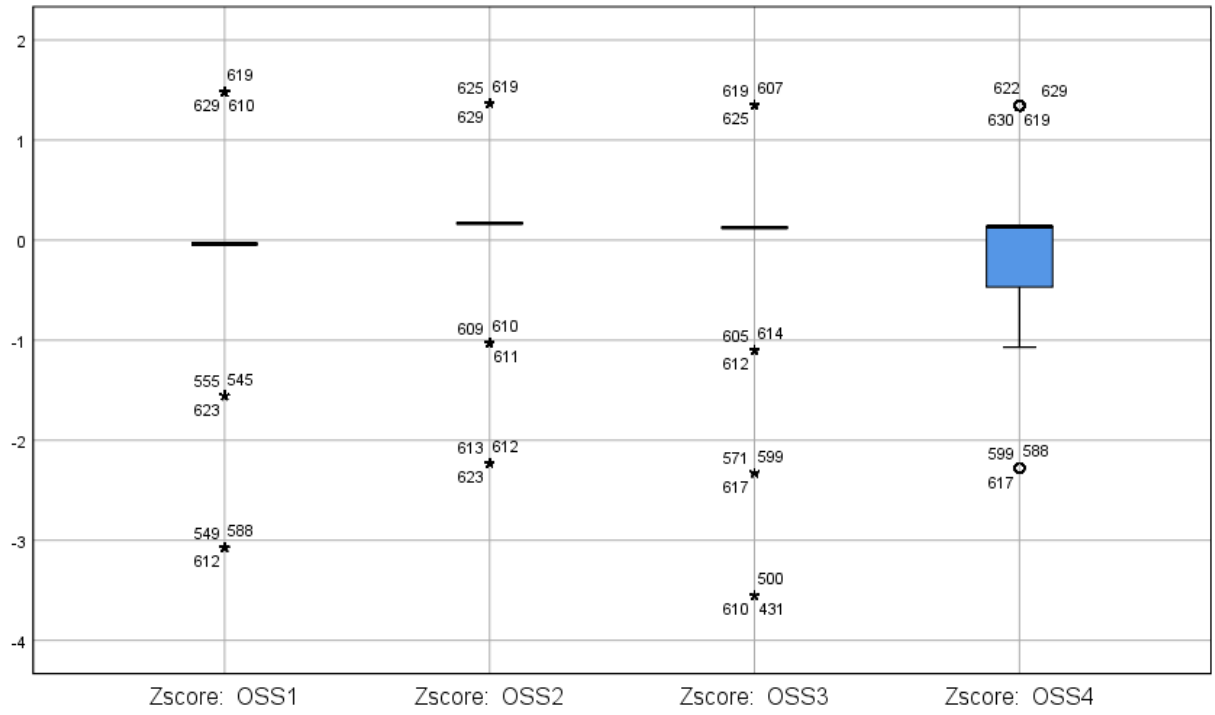


FIGURE A.5: BOX-PLOT OF UNIVARIATE OUTLIERS: THE STANDARDIZED SCORES OF INDICATOR ITEMS OF OSS

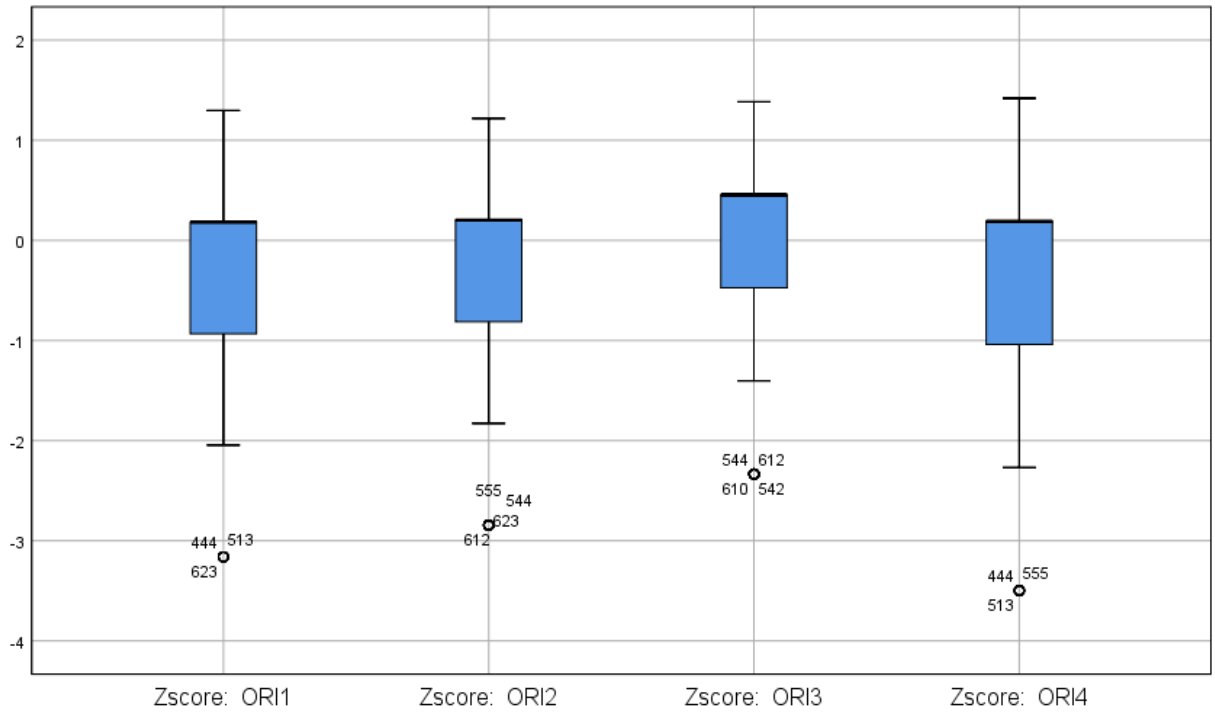
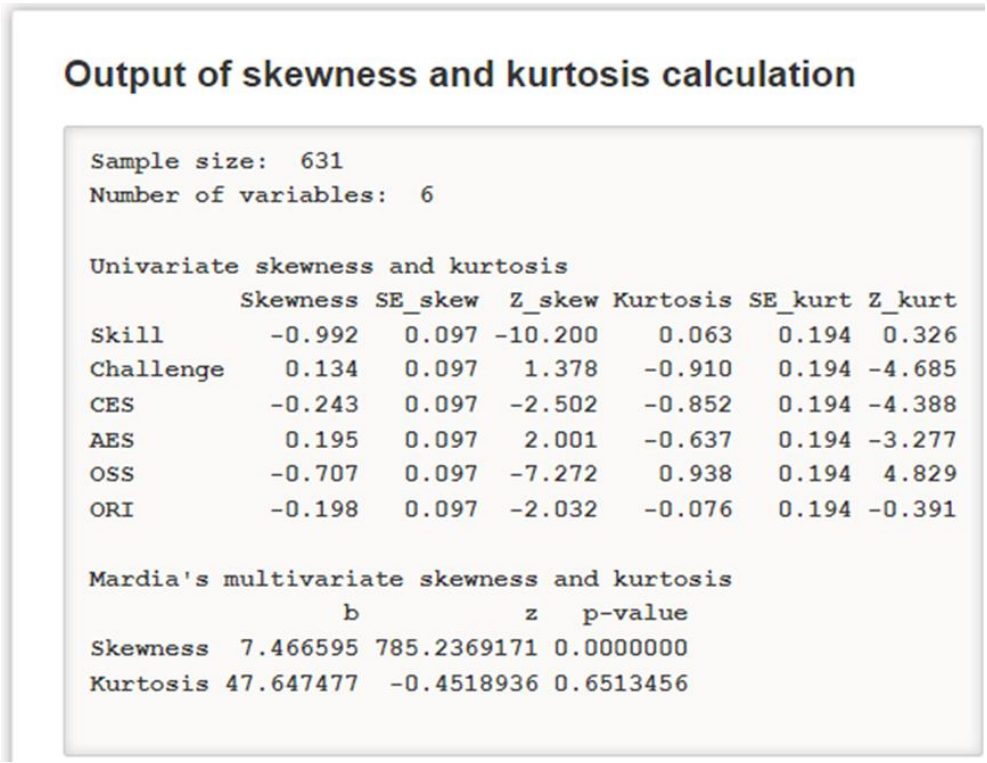


TABLE A.4: THE ASSESSMENT OF MULTIVARIATE NORMALITY FOR INDICATOR ITEMS

[a] Lilliefors Significance Correction



Output of skewness and kurtosis calculation

```
Sample size:  631
Number of variables:  6

Univariate skewness and kurtosis
          Skewness SE_skew  Z_skew Kurtosis SE_kurt Z_kurt
Skill       -0.992   0.097 -10.200    0.063   0.194  0.326
Challenge    0.134   0.097   1.378   -0.910   0.194 -4.685
CES         -0.243   0.097  -2.502   -0.852   0.194 -4.388
AES          0.195   0.097   2.001   -0.637   0.194 -3.277
OSS         -0.707   0.097  -7.272    0.938   0.194  4.829
ORI         -0.198   0.097  -2.032   -0.076   0.194 -0.391

Mardia's multivariate skewness and kurtosis
                b           z   p-value
Skewness  7.466595 785.2369171 0.0000000
Kurtosis 47.647477  -0.4518936 0.6513456
```

Figure A.7: Tests of Mardia's multivariate normality (calculation of Mardia's coefficients)

Test statistics of Mardia's multivariate normality

	b	z	p-value
Skewness	7.46	785.23	0.000
Kurtosis	47.65	-0.45	0.651

https://webpower.psychstat.org/models/kurtosis/results.php?url=f703727b35809444eb29818a38f2599b

Appendix B – Survey Questionnaire

Investigating the Impact of User Experience in Turkey's Online Bookstore: Application of Flow Theory

Start of Block: Block 1

Dear Participant,
This survey study has been prepared to be used in a doctoral dissertation conducted within the scope of the Marketing Doctorate Program of Budapest Corvinus University. The aim of the research is to measure the effect of consumers' user experiences on their purchasing behavior in online book shopping.

This survey is for customers who have shopped from idefix.com brand online shopping website idefix.com. The validity of the results depends on the accuracy of the information you provide, and your answers will be used for academic purposes only and will be kept strictly confidential.
The survey consists of 61 research and 6 demographic questions and is expected to take an average of 10 minutes.

Thank you for your valuable contribution to the study.

Q1 Skill

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
1. I consider myself knowledgeable about good search techniques for online shopping. (1)	○	○	○	○	○
2. In General, I am extremely skilled at online shopping. (2)	○	○	○	○	○
3. In general, I know how to find what I am looking for when shopping online. (3)	○	○	○	○	○
4. In general, I know somewhat more about online shopping than most users. (4)	○	○	○	○	○

Q2 Challenge

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
5. Using idefix.com shopping website challenges me to perform to the best of my ability. (1)	○	○	○	○	○
6. I believe that using idefix.com website stretches my capabilities to my limits in online shopping. (2)	○	○	○	○	○
7. Due to the fact that idefix.com website does not have a user-friendly structure, I have a hard time shopping and reviewing products in general. (3)	○	○	○	○	○
8. Using idefix.com website helps me understand the level of my skills in running online transactions. (4)	○	○	○	○	○

Q3 Telepresence

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
9. idefix.com website contains elements that bind me to itself. (1)	○	○	○	○	○
10. When I use idefix.com website, I dive into the site content in a way that forgets my inner circle. (2)	○	○	○	○	○
11. Shopping on idefix.com website often makes me forget where I am. (3)	○	○	○	○	○
12. I feel like I've returned to the "real world" from a post-shopping trip from idefix.com website . (4)	○	○	○	○	○

Q4 Interactive Speed

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
13. Pages on idefix.com website usually load fast. (1)	○	○	○	○	○
14. My interaction with idefix.com website is fast. (2)	○	○	○	○	○
15. When I use idefix.com website, there is little waiting time between my actions and the response of the website. (3)	○	○	○	○	○

Q5 Connectedness	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
16. The content of idefix.com website is organized by taking into account the feedback from customers, which is an advantage for the quality of the content. (1)	○	○	○	○	○
17. The ability to connect with other consumers who share similar interests in the same books is a positive feature of shopping from the idefix.com website. (2)	○	○	○	○	○
18. The ability to share comments related to my book experiences with other consumers on the idefix.com website is an important feature for me. (3)	○	○	○	○	○
19. The idefix.com website is designed to assist consumers in viewing each other book recommendations. (4)	○	○	○	○	○

Q6 Personalization

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
20. idefix.com online shopping website makes me feel like they are talking to me personally as a customer. (1)	○	○	○	○	○
21. The way idefix.com accesses the website makes me stand out as a customer. (2)	○	○	○	○	○
22. When I use idefix.com website, I feel like it is my personal space when I use it. (3)	○	○	○	○	○
23. I like it when I am able to customize the pages of idefix.com website to my own taste. (4)	○	○	○	○	○

Q7 Detected control

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
24. When I shop on idefix.com website, I feel that I am in control of what I am doing. (1)	○	○	○	○	○
25. I can easily control the information that is provided on idefix.com website. (2)	○	○	○	○	○
26. I feel like I can control my use of information on idefix.com website. (3)	○	○	○	○	○
27. The level of information provided by idefix.com website helps me feel that my purchasing decision is under my control. (4)	○	○	○	○	○

Q8 Ease of use

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
28. When shopping on the idefix.com website, I navigate the site in a fast and easy manner. (1)	○	○	○	○	○
29. The idefix.com website enables me to easily make the purchases I desire. (2)	○	○	○	○	○
30. When shopping on the idefix.com website, my confidence increases. (3)	○	○	○	○	○
31. The idefix.com website is easy to use. (4)	○	○	○	○	○
32. It does not take me long to learn how to navigate the idefix.com website. (5)	○	○	○	○	○

Q9 Aesthetic

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
33. The aesthetic design of the idefix.com website enhances my perception of quality. (1)	○	○	○	○	○
34. The branding of the idefix.com website is consistent with my current perceptions regarding this brand. (2)	○	○	○	○	○
35. The abundance of visual advertisements displayed while shopping on the idefix.com website does not have a positive impact on my thoughts of purchasing books. (3)	○	○	○	○	○
36. When making online purchases on the idefix.com website, I value the appearance and the feelings it creates in me. (4)	○	○	○	○	○

Q10 Perceived benefit

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
37. When I buy books from idefix.com website, I also review other brands' websites. (1)	○	○	○	○	○
38. idefix.com website is qualified to provide the information I want to know when buying books online . (2)	○	○	○	○	○
39. idefix.com website suggests that I made the best purchasing decision thanks to the information it provides. (3)	○	○	○	○	○
40. The convenience of shopping on idefix.com website is important to me. (4)	○	○	○	○	○

Q11 Cognitive Experiential State – Flow

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)
41. When considering your most recent online shopping experience, do you believe that you experienced an internal, enjoyable experience, a flow, when shopping on the idefix.com website to the point of becoming absorbed? Please rate your thoughts from 1 to 5. (1)	○	○	○	○	○

Q12 Affective Experiential Situation

Using the rating scale below, rate your emotions from 1 to 5 that you have tracked in your most recent shopping experience from the idefix.com online store.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)
42. Unhappy - Happy (10)	○	○	○	○	○
43. Melancholic - Contented (11)	○	○	○	○	○
44. Annoyed - Pleased (12)	○	○	○	○	○
45. Sluggish - Frenzied (13)	○	○	○	○	○
46. Calm - Excited (14)	○	○	○	○	○
47. Relaxed - Stimulated (15)	○	○	○	○	○
48. Guided - Autonomous (16)	○	○	○	○	○
49. Influenced - Influential (17)	○	○	○	○	○

Q13 Trust Online Shopping

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
50. The idefix.com website offers a consistent online shopping experience. (1)	○	○	○	○	○
51. The fact that idefix.com keeps its promise of rewards for shopping on their website increases my trust in the company. (2)	○	○	○	○	○
52. The idefix.com website provides a shopping experience free from uncertainty, worries of fraud, and breaches of personal information. (3)	○	○	○	○	○
53. Shopping online on the idefix.com website creates a sense of security for me. (4)	○	○	○	○	○

Q14 Online Shopping Satisfaction	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
54. I am generally satisfied with my overall experience of shopping on the idefix.com website. (1)	○	○	○	○	○
55. I am satisfied with the pre-purchase experience on the idefix.com website (e.g. consumer education, product search, quality of information about products, product comparison). (2)	○	○	○	○	○
56. I am satisfied with the purchasing experience on the idefix.com website (e.g. ordering, payment process). (3)	○	○	○	○	○

57. I am satisfied with the post-purchase experience on the idefix.com website (e.g. customer support and after-sales support, return/refund processes, care in delivery). (4)	○	○	○	○	○

Q15 Online Repurchase Intention

	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
58. I will likely make another purchase from the idefix.com website in the near future. (1)	○	○	○	○	○
59. I anticipate making another purchase from the idefix.com website in the near future. (2)	○	○	○	○	○
60. I regularly make repeat purchases from the idefix.com website. (3)	○	○	○	○	○
61. I expect to make another purchase from the idefix.com website in the near future. (4)	○	○	○	○	○

End of Block: Default Question Block

Start of Block: Block 3

Q16 Personal Information

Gender

- ○ Male (1)
- ○ Female (2)
- ○ Non-binary / third gender (3)
- ○ Prefer not to say (4)

Q17 Age

- ○ 18-24 (1)
- ○ 25-34 (2)
- ○ 35-44 (3)
- ○ 45 and over (4)

Q18 Education Level

- Primary School (1)
- Secondary School (2)
- High School (3)
- Bachelor`s Degree (4)
- Master’s degree (5)
- Doctorate degree (6)
- Other (Please Specify) (7) _____

Q19 Monthly Income Level

- 0-2.499 TL (1)
- 2.500-3.999 TL (2)
- 4.000-5.999 TL (3)
- 6.000-8.999 TL (4)
- 9.000 TL and Above (5)

Q20 The average amount of expenditure you incurred during your relevant book purchase.

- ○ 0-29 TL (1)
- ○ 30-49 TL (2)
- ○ 50-74 TL (3)
- ○ 75-99 TL (4)
- ○ 100 TL and above (5)

Q21 Profession

- ○ Student (1)
- ○ Academician (2)
- ○ Civil Servant (3)
- ○ Employee (4)
- ○ Entrepreneur (5)
- ○ Retired (6)
- ○ Other (Please Specify) (7) _____

End of Block: Block 3