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The Impact of In-Store Technology on Customer Experience in Fashion Retail: A Comparative Study of Portugal and Denmark

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Master in International Management

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BUSINESS SCHOOL

Department of Marketing, Operations and General Management

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Resumo

Este estudo explora a forma como as experiências dos consumidores são afetadas pelas tecnologias no setor da moda, incidindo sobre os *Millennials* e a Gen Z em Portugal e na Dinamarca. Assim, pretende-se observar como é que o processo tecnológico - como os sistemas de self-checkout, provadores inteligentes, ecrãs digitais, quiosques *self-service*, códigos QR ou soluções baseadas em IA/RA - está a alterar a forma como os clientes interagem com as lojas físicas.

O estudo segue uma abordagem dedutiva baseada no Modelo de Aceitação da Tecnologia (TAM) e no modelo de experiência do consumidor que definem os elementos cognitivos, emotivos, sociais e físicos da experiência do consumidor. Além disso, considera ainda a dimensão cultural baseada em Hofstede, bem como as características geracionais dos *Millennials* e da Geração Z, como fatores contextuais que influenciam a perceção e adoção de tecnologias em contexto de experiência de retalho.

Embora o objetivo original do estudo previsse uma comparação entre contextos culturais, a análise centra-se maioritariamente nos consumidores portugueses devido à dimensão limitada da amostra dinamarquesa. Os resultados da Dinamarca são apresentados de forma descritiva, assegurando o alcance internacional do estudo e mantendo a robustez analítica.

A integração do TAM com as dimensões da experiência do consumidor e com os contextos culturais e geracionais contribui para a literatura sobre adoção de tecnologias no retalho, com especificidade no setor da moda. O estudo fornece ainda recomendações práticas para profissionais e decisores do setor relativamente à adoção de tecnologias em loja ao longo da jornada do consumidor.

Palavras-chave:

Tecnologia In-Store, Experiência do Consumidor, Modelo de Aceitação da Tecnologia (TAM), Retalho de Moda, Contexto Cultural, Diferenças Geracionais

Classificação JEL:

L81 Retail and Wholesale Trade; e-Commerce

M31 Marketing

O33 Technological Change: Choices and Consequences; Diffusion Processes

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Abstract

This study explores how customer experience (CX) is affected by in-store technologies (ISTs) in the fashion retail sector, focusing on Millennials and Gen Z in Portugal and Denmark. The intent is to observe how the technological progress, such as self-checkout systems, intelligent fitting rooms, electronic displays, self-service kiosks, QR codes and AI/AR-driven solutions, is changing the way customers engage with brick-and-mortar stores.

The study adopts a deductive approach founded on the Technology Acceptance Model (TAM) and Customer Experience models that define the cognitive, emotive, social, and physical elements of CX. It further incorporates consideration of the cultural dimension founded on Hofstede, as well as generational characteristics of Millennials and Generation Z, as contextual factors that influence perception as well as adoption of technologies in the retail experience context.

Although the study's original design was a cross-national comparison, the analysis will be mostly focused on the Portuguese consumers due to the limited size of the Danish sample. Danish results are presented descriptively, assuring the international scope and maintaining analytical robustness.

The integration of TAM with CX dimensions and cultural plus generational context contributes to the literature regarding technology adoption in a retail context, with a sector (fashion) specificity. Providing actionable insights for retail professionals and decision-makers regarding in-store technology adoption on the customer journey.

Keywords:

In-Store Technology, Customer Experience, Technology Acceptance Model (TAM), Fashion Retail, Cultural Context, Generational Differences

JEL classification:

81 Retail and Wholesale Trade; e-Commerce

M31 Marketing

O33 Technological Change: Choices and Consequences; Diffusion Processes

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List of Acronyms

AI – Artificial Intelligence

AR – Augmented Reality

ATT – Attitude Toward Using

BI - Behavioural Intention

CX - Customer Experience

Gen Z – Generation Z

IS – Information Systems

IST – In-Store Technology

ISTs – In-Store Technologies

PEOU – Perceived Ease of Use

PU – Perceived Usefulness

SIST – Smart In-Store Technologies

TAM – Technology Acceptance Model

TAM2 – Technology Acceptance Model 2

TRA – Theory of Reasoned Action

UTAUT – Unified Theory of Acceptance and Use of Technology

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1. Introduction

The contextual background for the research is introduced in this chapter, alongside the identification of the main problem in the analysis, as well as the identification of the research objectives and questions.

The relevance of this research is anchored in the wider field of the Technology Acceptance Model (TAM) applied to the fashion retail sector, with a focus on Gen Z and Millennials generations in Portugal and Denmark. It also integrates the multidimensional concept of Customer Experience (CX), recognising cultural and generational contexts as moderating factors that influence customer perceptions and behavioural intentions towards in-store technologies (ISTs).

1.1. Contextualisation

The retail industry has been under a significant transformation resulting from the growing integration of digital technologies across physical and online channels. This convergence outcome was the rise of the omnichannel environment, where the differentiation between in-store and digital experiences got increasingly blurred (Alexander & Cano, 2019; Grewal et al., 2019). Analyses conducted by Deloitte (*Global Powers of Retailing 2025)* and McKinsey & Company *(The State of Fashion 2025*) state that consumers are requesting more hybrid formats that combine engagement, personalisation and efficiency. Their increasing expectations and the digital acceleration that's happening in the world are reshaping retail operations.

In-store technologies (ISTs) such as self-checkout systems, smart fitting rooms, digital signage, self-service kiosks, QR code scanners, and AI/AR-based solutions have become central to enhancing operational performance and customer satisfaction in this ever-changing landscape (Adapa et al., 2019; Grewal et al., 2019; Willems et al., 2016). Thanks to this innovation, retailers are enabled to deliver better shopping experiences which become more convenient, interactive and personalised while maintaining efficiency and brand differentiation (Boardman et al., 2020; Gagné et al., 2024).

This technological innovation and subsequent evolution had a particularly significant impact on the fashion retail sector, known for being a naturally experiential sector that depends on emotional and social engagement - dimensions that are gradually more influenced by technology (Siregar & Kent, 2019; Kim et al., 2020). Customer experience (CX) dimensions, such as cognitive, emotional, social, and physical, are now shaped by smart and interactive

technologies that allow consumers to explore, evaluate and connect with products and brands (Andajani, 2015; Bustamante & Rubio, 2017).

Cultural and generational factors shape the perception and acceptance of technologies. According to Hofstede's framework, national culture affects attitudes concerning innovation and uncertainty. For example, Portuguese individuals display higher uncertainty avoidance compared to Danish people, who tend to be more individualistic and open to experimentation, as easily seen in the Country Comparison Tool from The Culture Factor Group. Millennials and Gen Z are the key generations for examining the technology adoption in fashion retail because of their higher levels of digital fluency and stronger predisposition for contactless and seamless service interactions (Lee & Leonas, 2020; Kim et al., 2021).

With this scenario in mind, it's crucial to comprehend the impact of ISTs on CX. By checking industry reports, it's clear that the success in the fashion retail sector is directly linked to customer experience and relies on the creation of relevant and tech-enabled experiences that explore and stimulate CX dimensions throughout the customer journey (Deloitte, 2025; McKinsey, 2024).

This research positions itself within this dynamic intersection between digital transformation, culture and generation, highlighting how Portuguese and Danish consumers experience and adopt in-store technologies within the fashion sector.

1.2. Problem Statement

Customer interaction and sensory experiences became crucial for the fashion retail sector, in which the digital transformation of the retail landscape created the increasing necessity of technology integration within physical stores (Alexander & Cano, 2019; Siregar & Kent, 2019). Even though ISTs, such as self-checkout systems, smart fitting rooms, and AI/AR tools, are gradually becoming more common in the customer's daily shopping journey (Grewal et al., 2019; Kim et al., 2016), there's still not enough information and data to understand how these technologies affect CX in physical environments (Bustamante & Rubio, 2017).

Most existing research applying the TAM addresses online technology adoption contexts, overlooking the multidimensional nature of CX (Marangunić & Granić, 2014; Bustamante & Rubio, 2017). Additionally, culture and generation are some of the characteristics that have been reported to have a significant impact on technology adoption from the consumer's side (Jan et al., 2022; Kim et al., 2021), however, they remain underexplored when it comes to the fashion retail sector.

Therefore, the present study attempts to bridge this gap by analysing how ISTs impact CX, specifically in the fashion retail environment, taking into account the moderating effect of cultural and generational settings.

1.3. Research Objectives and Questions

This section illustrates the objectives and questions that guide the research. Together, these components provide a structured approach for the investigation and create the basis for the empirical analysis developed in the later chapters.

1.3.1. Main Objectives

The primary goal of this study is to analyse the impact of in-store technologies on customer experience within the fashion retail sector, while also seeking to explain the correlation between the Technology Acceptance Model (TAM) and the multidimensional framework of CX. The TAM explains technology adoption through perceived usefulness (PU), perceived ease of use (PEOU), attitude toward using (ATT), and behavioural intention (BI), while the CX framework covers the cognitive, emotional, social, and physical dimensions.

This research also attempts to understand in which way the cultural and generational contexts influence the perceptions and acceptance of in-store technologies. The focus on two tech-savvy generations, as well as the focus on two different countries, such as Portugal and Denmark (when examined under the scope of Hofstede's dimensions), allows the analysis of how different cultural and generational contexts shape technology-driven shopping experiences.

In summary, this study aims to:

- Analyse how in-store technologies affect customer experience in fashion retail.
- Examine the relationships between TAM variables (PU, PEOU, ATT, BI) in the adoption of ISTs.
- Explore the moderating effects of culture and generation on the relationship between technology adoption and customer experience.

1.3.2. Research Questions

This study seeks to answer the following research questions:

RQ1: How do in-store technologies impact customer experience (cognitive, emotional, social, and physical dimensions) in the fashion retail sector?

RQ2: How do the Technology Acceptance Model variables (perceived usefulness (PU), perceived ease of use (PEOU), attitude toward using (ATT), and behavioural intention (BI)) explain the adoption of in-store technologies in fashion retail?

RQ3: How does cultural context (Portugal vs. Denmark) moderate the relationship between technology adoption and customer experience?

RQ4: How do generational differences (Millennials vs. Generation Z) influence consumer perceptions and adoption of in-store technologies?

2. Literature Review

This section provides a review of the existing literature concerning the conceptual framework of this study. Firstly, it begins with the Technology Acceptance Model (TAM) as the primary theoretical framework for understanding technology adoption. Secondly, a section follows that explores the role of in-store technologies (ISTs) in the fashion retail industry. Thirdly, the customer experience (CX) will be explored in its multidimensional nature based on the customer's interaction with technologies. Lastly, it takes into consideration the cultural context based on Hofstede's Theory, focusing on Portugal and Denmark, as well as considering the generational context of Millennials and Gen Z. Culminating in the proposed conceptual model for this study, based on the reviewed literature together with the hypothesis presentation.

2.1. Technology Acceptance Model (TAM)

There are a lot of frameworks that can be used to explain technology adoption by individuals, but the Technology Acceptance Model, usually referred to as TAM, is perhaps the best established of them all. This model, proposed by Davis (1989), states that the behavioural intention (BI) of using a particular system is determined by attitudes toward using (ATT) the technology, which are influenced by two key beliefs, such as perceived usefulness (PU) and perceived ease of use (PEOU). Notably, the TAM also suggests that PEOU influences PU, as the likelihood of a system being judged as useful is influenced by its ease of use. The explanatory power and widespread application of the model allowed it to become one of the most influential models in Information Systems (IS) research (Marangunić & Granić, 2014).

When applied to the retail context, TAM functions as a solid base to understand how consumers adopt and evaluate in-store technologies (Kim et al., 2016). Davis's model is

essential to the conceptual framework of this study due to the connection created between beliefs, attitudes and intentions, capturing the psychological processes that drive acceptance.

2.1.1. Evolution and Application of TAM

The Theory of Reasoned Action (TRA) developed by Fishbein and Ajzen (1975), which explains behaviour as a function of attitudes and behavioural intentions, was the key theory from which TAM was developed. Two system-specific belief constructs, PU "the degree to which a person believes that using a particular system would enhance his or her job performance," and PEOU "the degree to which a person believes that using a particular system would be free of effort." (Davis, 1989, p. 320) were introduced to adapt the TRA to the context of technology. This new model empirically demonstrated that the two constructs had a significant influence on the attitude and behavioural intention towards using technology, allowing it to become one of the most robust models for predicting user acceptance (Venkatesh & Davis, 2000). This causal relationship regarding the influence of PEOU in PU was confirmed in Davis's original study and later in Venkatesh & Davis's (2000) research. TAM became a foundation for later models such as TAM2 and the Unified Theory of Acceptance and Use of Technology (UTAUT), due to its origins in social psychology and its adaptability to different tech contexts.

TAM2 was a model proposed by Venkatesh and Davis (2000) that would integrate social influence factors (e.g. subjective norms, image) and cognitive processes (e.g. job relevance, output quality, result demonstrability) as predictors of PU and BI. Later, the UTAUT was introduced by Venkatesh et al. (2003), combining TAM with several other acceptance theories, emphasising performance expectancy, effort expectancy, social influence, and facilitating conditions. Evidence from decades of TAM research was consolidated in several reviews, such as Marangunić and Granić (2014), focusing on how robust it was, and at the same time raising awareness for the limitations regarding cultural and contextual moderators.

In the fashion retail sector, TAM proved to be particularly relevant, with Kim et al. (2016) applying the model to smart in-store technologies (SIST) such as self-checkouts and interactive mirrors, concluding that PU consistently predicted BI, highlighting its pivotal influence on consumers' technology adoption. Nevertheless, the effects of PEOU and ATT were less consistent depending on the type of technology studied. These findings demonstrate the utility of TAM in retail, while also indicating that cultural and experiential perspectives must be considered, which will be addressed in the present research by combining cultural and generational factors with TAM and customer experience.

2.2. In-Store Technologies in Fashion Retail

The retail sector has been affected by a significant transformation due to the fast integration of digital and interactive technologies, known as In-store Technologies (ISTs), a term that can encompass self-service and experience-enhancing tools that combine digital environment efficiency with sensory richness of traditional retail spaces (Grewal et al., 2019; Alexander & Cano, 2019).

ISTs were adopted in fashion retail to create seamless experiences that can strengthen brand identity and foster customer connection, given the experimental and symbolic nature of the sector (Siregar & Kent, 2019; Kim et al., 2020). These types of technologies have the capability to convert offline store environments into dynamic spaces where personalisation, immersion and interactivity are promoted (Boardman et al., 2020; Hilken et al., 2018).

Customer journeys become more seamless, convenient and autonomous thanks to IST's enhancement of efficiency and perceived value (Adapa et al., 2019; Willems et al., 2016). While tools such as self-checkout, click-and-collect, and digital signage foster functional performance, smart fitting rooms and AR/VR applications encourage emotional engagement and sensory exploration (Gagné et al., 2024; Jessen et al., 2020).

Vrontis et al. (2016) stated that smart retailing combines digital and physical aspects through value-based synergies that improve customer interaction. Physical retail environments evolved from a transactional space to an experiential touchpoint employing an omnichannel strategy (Alexander & Cano, 2019). This trend is supported by industry evidence as both Deloitte's (2025) Global Powers of Retailing and McKinsey's (2024) State of Fashion report emphasise that, more than ever, retailers' ability to deliver hybrid experiences combining convenience, sustainability, and engagement dictates their competitiveness.

In-store technologies serve as a strategic enabler of CX, able to connect human value creation with digital innovation, establishing the basis of the typology and analysis in the subsequent subsection.

2.2.1. Inventory of ISTs

In this subsection, an overview of the main ISTs identified across the literature review is presented, and these are classified based on their functional and experimental purposes in Table 2.1. Self-checkout, self-service kiosks, QR/barcode scanning, and click-and-collect systems are functional technologies which focus on enhancing operational efficiency and customer convenience. While click & collect systems, digital signage, smart fitting rooms/virtual mirrors

and AR and VR tools are experimental technologies due to their interactive and immersive features that enrich emotional and sensory engagement. Mobile apps and RFID systems combine efficiency with engagement; therefore, they don't fit any of the designations. They adopt a double approach since they range from simplifying tasks like checkout and inventory management to enabling personalisation and interactivity.

The classification aligns with previous studies, reflecting the balance between utilitarian and hedonic values within the fashion retail context, where functional technologies support convenience and task efficiency, where functional technologies support convenience and task efficiency, while experiential ones foster enjoyment, creativity, and emotional connection (Adapa et al., 2019).

Overall, ISTs appear as multifaceted enablers in customer experience, topic to be further developed in the next section.

Table 2.1 Classification of In-Store Technologies by Functional and Experimental Purpose

Technology	Description / Function	Type	Source
Self-Checkout	Enables customers to scan and pay independently, reducing waiting time and staff dependency.	Functional	Gagné et al. (2024); Lee & Leonas (2020); Lohrmann (2022)
Self-Service Kiosks	Facilitate product selection, payment, or service customization within the store.	Functional	Willems et al. (2016); Vrontis et al. (2016)
QR / Barcode Scanning	Allows mobile access to product details, stock availability, or online purchase links.	Functional	Willems et al. (2016); Adapa et al. (2019)
Click & Collect Systems	Bridge online and offline channels by allowing customers to pick up online purchases in-store.	Functional	Grewal et al. (2019); Deloitte (2025)
Digital Signage	Provides interactive and dynamic displays that promote engagement and brand storytelling.	Experiential	Kim et al. (2020); Alexander & Cano (2019)
Smart Fitting Rooms / Virtual Mirrors (AR/AI)	Allow customers to try on products virtually and receive personalized recommendations.	Experiential	Kim et al. (2016); Boardman et al. (2020); Jessen et al. (2020)
Augmented / Virtual Reality Applications	Offer immersive, gamified experiences that strengthen emotional connection and brand identity.	Experiential	Boardman et al. (2020); Hilken et al. (2018)
Mobile Apps / RFID Systems	Track inventory and personalize recommendations based on customer behavior and preferences.	Mixed (Functional & Experiential)	Willems et al. (2016); Vrontis et al. (2016); Kim et al. (2020)

Source. *The author's own elaboration.*

2.3. Customer Experience in Retail

Customer experience is the culmination of cognitive, emotional, physical and social responses that occur from the interactions between a customer and a brand across the purchase journey (Bustamante & Rubio, 2017). CX evolved into a strategic source of differentiation in physical retail by shifting the focus from product value to experiential value (Maklan & Klaus, 2011).

Fashion store experiences are built through brand storytelling, multi-sensory engagement, and social interaction (Andajani, 2015; Siregar & Kent, 2019). Nowadays, customers anticipate convenience, stimulation, and emotional connection in their store visits, consequently, interactive and digital elements are increasingly defining these encounters. Technologies such

as augmented reality, smart mirrors, and self-service tools can enhance immersion and co-creation, but they also reshape how customers perceive value and satisfaction.

As a result, CX evolved and is now understood as a dynamic interactional process involving both the retailer's design and the customer's participation, instead of being merely an outcome of service quality. This conceptualisation provides the foundation for analysing how in-store technologies affect the four experiential dimensions detailed in the next section.

2.3.1. Dimensions of Customer Experience

In retail, CX is a multidimensional construct that involves cognitive, emotional, physical, and social factors that together determine the quality of customer-store interaction (Bustamante & Rubio, 2017). The consumer's mental processes of evaluation, learning, and decision-making (e.g. ease of navigation and information processing within the store) refer to the cognitive dimension (Andajani, 2015). All the feelings and affective responses during the shopping experience (e.g. frustration, excitement or pleasure) encompass the emotional dimension (Maklan & Klaus, 2011). While design, lighting and layout of the store, meaning all the sensory and spatial stimuli, allude to the physical dimension (Bustamante & Rubio, 2017). Finally, the interaction and identification with others, meaning staff and other shoppers, reflect the social dimension that contributes to a sense of belonging and to engagement (Siregar & Kent, 2019).

Collectively, these four dimensions present a comprehensive perspective of how customers interpret and value their in-store experiences, establishing a conceptual foundation to understand how technological features can influence each dimension.

2.3.2. Technology and Customer Experience

The way customers engage with the shopping environment has been reshaped by the integration of digital and interactive elements within physical retail spaces. ISTs no longer serve only functional purposes, they serve as experiential touchpoints that streamline decision-making, evoke emotions and elevate the overall sense of connection with the brand (Kim et al., 2016; Bustamante & Rubio, 2017).

When it comes to fashion retail, AR and VR technologies are particularly fascinating from a conceptual standpoint, as they allow customers to visualise products interactively, bridging the gap between imagination and physical try-on (Boardman et al., 2020; Jessen et al., 2020). This ability to immerse oneself in a brand enhances emotional engagement and strengthens the connection between the consumer and the brand. Likewise, the cognitive and physical

dimensions are stimulated by ISTs such as RFID and mobile-based solutions that enable information access, autonomy and smoother store navigation (Willems et al., 2016). Simultaneously, digital interaction influences the social dimension of CX by reshaping the role of human contact. Siregar & Kent (2019) argue that technologies that balance automation with personalised assistance can foster both convenience and connection.

With this, it is concluded that technology acts as both an enabler and a shaper of retail experience, influencing how consumers perceive value, satisfaction, and engagement within the store environment.

2.4. Cultural and Generational Perspectives

Perceptions of usefulness or ease of use are not the only elements affecting technological adoption and customer experience, as TAM proposes. Culture and generation, broader contextual factors, influence how consumers interpret and engage with technology in retail environments (Jan et al., 2022; Kim et al., 2021).

From a cultural perspective, attitudes toward innovation and uncertainty are influenced by social norms and cultural values. Research based on Hofstede's framework indicates that national culture plays a moderating role in the TAM relationships through its effect on the assessment of usefulness, risk, and control when implementing new systems (Srite & Karahanna, 2006; Jan et al., 2022).

From a generational perspective, some generations, such as Millennials and Gen Z, exhibit distinguished digital habits and expectations. While Millennials usually value efficiency and functional benefits, Gen Z prioritises interactivity and personalisation (Lee & Leonas, 2020; Wang & Jiang, 2024).

This research adopts a contextualised understanding of technology acceptance and customers' experience by considering both the cultural and generational perspectives. The way consumers interpret innovation and uncertainty is influenced by cultural factors, while attitudes and preferences towards digital interactions in retail settings are shaped by generational traits. The following subsections explore these perspectives separately: Cultural Context examines national cultural differences between Portugal and Denmark, and Generational Context analyses the characteristics of Millennials and Generation Z within the fashion retail environment.

2.4.1. Cultural Context

Culture represents a key contextual element of how consumers perceive and adopt new technologies. National culture, according to Hofstede's framework, is defined as the shared programming of the mind that differentiates one society from another, moulding shared values, expectations, and behavioural patterns (Jan et al., 2022). Research connecting Hofstede's model and TAM has shown that uncertainty dimensions such as avoidance, individualism, and power distance have their impact when moderating relationships between PU, PEOU and BI (Srite & Karahanna, 2006; Jan et al., 2022).

In this research, technology adoption and customer experience, related to fashion retail, are explored under two contrasting cultural contexts, such as Portugal and Denmark. Data from the Culture Factor Group, more specifically from the Country Comparison Tool[1], indicate that Portugal has higher scores in Power Distance (63) and Uncertainty Avoidance (99), suggesting a culture with a tendency towards hierarchy, predictability, and structured interactions. In contrast, Denmark's lower scores in the same dimensions (Power Distance = 18 and Uncertainty Avoidance = 23) suggest egalitarianism, flexibility, and comfort with ambiguity.

Danish higher scores are attributed to Individualism (89) and Indulgence (70), meaning a self-directed and optimistic society valuing autonomy, enjoyment, and experimentation. The Portuguese culture illustrates a restrained attitude where social norms and control over gratification are more prevalent, with its moderate score in Individualism (59) and the lower score in Indulgence (33).

Consumer behaviour toward in-store technologies can be understood through the study of these cultural differences. This cultural orientation reflects a preference for guided, reliable, and clearly structured technological interactions in the Portuguese culture due to its high scores in uncertainty avoidance and power distance. While in the Danish culture, there's an openness to experimentation and autonomy in retail experiences due towards individualism and indulgence.

Consumers' attitudes and behavioural intentions can be shaped by the way they perceive the usefulness and ease of use of ISTs, which is influenced by cultural differences. Therefore, this study integrates the cultural context as a moderating variable, reinforcing the theoretical link between Hofstede's dimensions and the Technology Acceptance Model, as proposed and empirically supported by Srite and Karahanna (2006) and later expanded by Jan et al. (2022).

[1] *The comparison of Hofstede's cultural dimensions for Portugal and Denmark is presented in Annex C.*

2.4.2. Generational Context

How consumers perceive and engage with ISTs is also influenced by another context, such as generation. Age cohorts show distinct expectations and behavioural tendencies due to shared formative experiences and levels of digital literacy (Kim et al., 2021). For example, technology use is deeply integrated into the daily life of young consumers, shaping how convenience, interaction, and experience are interpreted when it appears in retail settings.

Individuals born between 1981 and 1996 are commonly referred to as Millennials and are characterised by their early exposure to digitalisation and their pragmatic approach toward technology use. When interacting with in-store systems, such as self-checkout or mobile payment options, this generation tends to value efficiency, autonomy, and convenience (Lee & Leonas, 2020). Millennials tend to prioritise perceived usefulness and functional benefits of technology over its novelty, reflecting a utilitarian orientation consistent with the Technology Acceptance Model (Lee & Leonas, 2020).

Representing the first fully digital-native cohort are those born between 1997 and 2012, usually identified as Generation Z (or most frequently as Gen Z). Their tech experience is highly visual, interactive, and emotionally charged. Studies show that Gen Z consumers have a preference for AR- and AI-based tools that merge physical and virtual environments because of the value they attribute to authenticity, immersion, and personalisation in their shopping experiences (Wang & Jiang, 2024; Jessen et al., 2020). This generation's expectations of retail experiences go beyond efficiency, entering the field of creativity, co-creation and brand alignment with personal values.

Even though both generations are technologically fluent, their motivations are quite different. For Millennials, IST adoption is related to their preference for convenience, while Gen Z looks at these kinds of technologies as extensions of identity and experience (Kim et al., 2021).

Fashion retailers can tailor their technological features to enhance cognitive and emotional engagement across consumer segments, based on the insights provided by the understanding of these generational differences. In this study, generation is treated as a contextual element, rather than a moderating variable, to support the interpretation of consumer differences. This approach allows a more comprehensive understanding of how distinct age cohorts may perceive and experience in-store technologies differently, even if they share the same cultural setting.

2.5. Conceptual Model and Hypotheses Development

The conceptual model represented in Figure 2.1 shows the integration of the Technology Acceptance Model with Consumer Experience, using Cultural Context as a moderating variable. It allows for exploring and further understanding how consumers perceive, adopt and experience in-store technologies in fashion retail environments.

The TAM constructs - Perceived Ease of Use, Perceived Usefulness, Attitude Toward Using, and Behavioural Intention to Use – serve as the model's base as suggested by Following Davis (1989) and Marangunić and Granić (2014). These TAM constructs are applied to in-store technologies, in line with Kim et al. (2016) studies, to understand consumer acceptance in physical fashion stores.

Bustamante and Rubio (2017) research on Customer Experience, encompassing cognitive, emotional, social, and physical dimensions, represents the experiential outcome of technology adoption. The conceptual model suggests that consumers with higher behavioural intention to use technology will have a more positive customer experience.

Based on Hofstede's framework and literature by Srite & Karahanna (2006) and Jan et al. (2022), the Cultural Context is presented as a moderating factor influencing relationships within TAM. The comparison between both cultures portrays the extent to which cultural values impose influences on perceptions and behaviours regarding IST.

Hypotheses:

H1. Cultural Context (Portugal vs. Denmark), based on Hofstede's framework, moderates the relationships within the Technology Acceptance Model.

H2. Perceived Ease of Use has a positive effect on Perceived Usefulness of in-store technologies.

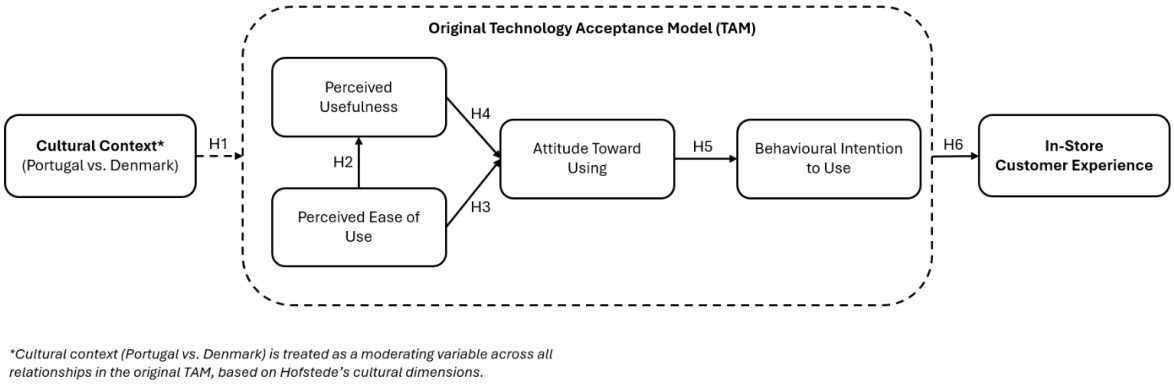
H3. Perceived Ease of Use has a positive effect on Attitude Toward Using in-store technologies.

H4. Perceived Usefulness has a positive effect on Attitude Toward Using in-store technologies.

H5. Attitude Toward Using in-store technologies has a positive effect on Behavioural Intention to Use.

H6. Behavioural Intention to Use in-store technologies has a positive effect on Customer Experience.

Figure 2.1 Proposed conceptual model representing The Impact of In-Store Technology on Customer Experience in Fashion Retail



Source. *Author's own elaboration based on Kim et al. (2016); Bustamante & Rubio (2017); Jan et al. (2024); Srite & Karahanna (2006); and Roggeveen et al. (2020).*

3. Research Methodology

This chapter presents the methodology used in this dissertation, examining how ISTs influence CX in fashion retail. A quantitative, deductive, and cross-sectional approach was followed in this research to test the relationships between theoretical constructs empirically

Based on validated constructs and scales from Kim et al. (2016) and Bustamante and Rubio (2017), an online survey was developed and distributed.[2] The constructs were adapted to the broader concept of interaction with ISTs instead of individual experience with one type only. The web survey was shared via digital social platforms such as WhatsApp, Instagram, LinkedIn, and Facebook. The collected data belongs to Portuguese and Danish consumers aged 18–44, representing Millennial and Gen Z cohorts.

The methodology is structured as follows:

- Section 3.1 presents the research design and theoretical approach.
- Section 3.2 describes the data collection process and survey structure.
- Section 3.3 outlines the sampling strategy and participant criteria.
- Section 3.4 discusses ethical compliance and data privacy.
- Section 3.5 acknowledges methodological limitations, including the unbalanced cross-national sample.

[2] The original measurement items can be found, respectively, in Annexe A and B.

This framework provides methodological consistency, theoretical alignment, and analytical rigour that align with detailed aims to understand the consumers' perceptions, adoption of and engagement with in-store technologies in fashion retail environments.

3.1. Research Design

A survey-based, quantitative, deductive and cross-sectional design was applied in this study to analyse how ISTs influence CX in fashion retail. Opposite to undertaking an exploratory approach, the chosen path allowed the testing of predefined hypotheses based on established theoretical frameworks

The research was conducted in English to fit both cultures in the analysis, as translation to each respective language could lead to changes in the meaning of the questions, possibly harming the results.

Although designed for cross-national comparison between Portugal and Denmark, the main analysis focuses on Portuguese respondents due to a smaller Danish subsample.[3]

3.2. Data Collection Methods

The data was collected via an online self-administered survey designed and hosted on Qualtrics. This collection method was preferred and chosen due to its accessibility, efficiency, and ability to reach respondents across different countries.

The survey was shared mainly through WhatsApp, Instagram, LinkedIn, and Facebook. Some limited use of Discord and Reddit also existed, but the response rate was very low, so these channels fell very soon in the process. Since Millennials and Gen Z consumers aged 18–44 were the targets of this study, it was important that the distribution method (digital) would suit these generations, who are mostly very active on these platforms.

3.2.1. Survey Design

The survey was composed of five sections in total.[4] The first section referred to screening (and demographic) questions. To ensure inclusion criteria, participants not meeting the mandatory conditions (Portuguese or Danish nationality, between 18 and 44 years old) were automatically filtered out, meaning that the survey would end very early (first two questions).

[3] Check chapter 3.5 for more details.
[4] The full version of the survey can be consulted in the Appendices.

The second section was composed of the adapted constructs from Kim et al. (2016), concerning the TAM. The third section focused on the adapted CX constructs from Bustamante and Rubio (2017).

In the fourth section, the goal was to examine interactions with ISTs, providing contextual understanding of participants' familiarity with the technologies studied. Respondents were asked if they had already used/seen technologies such as self-checkout systems, smart fitting rooms, digital signage, and AR/AI mirrors.

Finally, the fifth section collected the main demographic data – gender, education level, and approximate monthly net income (in euros, after taxes), supporting descriptive and segmentation analyses.

The items related to the TAM and CX constructs were all measures using a 7-point Likert scale (1 = strongly disagree; 7 = strongly agree) as presented in the already validated scales. The survey was designed to minimise participants' fatigue and to ensure smooth transitions between each section.

A summary of the adapted constructs is presented in Tables 3.1 and 3.2, detailing each construct's definition/focus, number of items, and scale type used in the survey.

Table 3.1. Constructs and Measurement Details of the Technology Acceptance Model (TAM)[5]

Construct	Definition / Focus	No. of Items	Scale Type
Perceived Ease of Use (PEOU)	Degree to which using in-store technologies is perceived as effortless.	4	7-point Likert
Perceived Usefulness (PU)	Extent to which in-store technologies enhance shopping effectiveness and productivity.	4	7-point Likert
Attitude Toward Using (ATT)	Consumer's overall evaluation of using in-store technologies.	7	7-point semantic differential
Behavioral Intention (BI)	Likelihood of using in-store technologies in future shopping experiences.	3	7-point Likert

Source. *Author's own elaboration based on Kim et al. (2016).*

[5] Constructs adapted from Kim, H. Y., Lee, J. Y., Mun, J. M., & Johnson, K. K. P. (2016). Consumer adoption of smart in-store technology: Assessing the predictive value of attitude versus beliefs in the technology acceptance model. International Journal of Fashion Design, Technology and Education, 10(1), 26–36. https://doi.org/10.1080/17543266.2016.1177737

Table 3.2. Customer Experience (CX) Dimensions and Measurement Details[6]

Dimension	Definition / Focus	No. of Items	Scale Type
Cognitive Experience	Mental stimulation and reflective engagement evoked by in-store technologies.	7	7-point Likert
Emotional Experience	Affective responses such as excitement, enjoyment, and satisfaction.	10	7-point Likert
Social Experience with Customers	Interactions and sense of community experienced with other customers.	5	7-point Likert
Social Experience with Employees	Perceived engagement and communication with store employees.	5	7-point Likert
Physical Experience	Sensory and environmental comfort influenced by in-store technologies.	5	7-point Likert

Source. *Author's own elaboration based on Bustamante and Rubio (2017).*

3.2.2. Pre-Test

To ensure clarity, structure and flow of the survey before its implementation, a pre-test was conducted between 29th July and 1st of August 2025. It involved a total of 16 participants, of whom 12 were Portuguese and 3 were Danish, and 1 was invalid.

The goal of the pre-test was to identify potential issues related to wording, question order, and total time for realisation. The feedback led to minor improvements: word adjustments to ensure a clear understanding, spelling corrections, and an intermediate section listing examples of ISTs was added to enhance participant understanding of the technologies referenced in later questions.

Overall, the pre-test confirmed the clarity and consistency of the survey instrument, validating it for the main data collection phase.

3.3. Sampling Strategy

The sampling strategy used for this survey was a mixed approach between convenience and snowball sampling, suitable for online data collection, where respondents are reached through social media. The target population included Portuguese and Danish consumers aged 18–44, representing Millennials and Generation Z.

Participants had to meet both nationality and age criteria to ensure sample relevance, with automatic filtering in Qualtrics excluding ineligible respondents.

The final dataset comprised 284 valid responses, of which 255 were Portuguese and 29 were Danish. The lower Danish participation may reflect cultural differences in engagement,

[6] Constructs adapted from Bustamante and Rubio (2017), Measuring customer experience in physical retail environments, Journal of Service Management, 28(5), 884–913. https://doi.org/10.1108/JOSM-06-2016-0142

consistent with Hofstede's framework. While the sample imbalance limited comparative analysis, the Portuguese data enabled statistical testing, and Danish results were retained for descriptive interpretation to preserve the international perspective of the study.

3.4. Ethical Considerations

All study procedures followed ethical standards and guidelines established by ISCTE Business School and European Union data protection laws (GDPR). Survey participation was voluntary and anonymous, based on an informed consent statement at the beginning of the survey.

Participants were informed of the study's purposes, approximate completion time, and how the data would be treated confidentially. No personal identifiers (e.g., name, email, and IP address) were used, allowing for complete anonymity. Participants were also able to withdraw from the survey at any time by closing their browser without submitting responses.

Data were stored securely on the Qualtrics platform, accessible only to the researcher, and used only for academic purposes. Ethical rigour was ensured by maintaining transparency, consent, and privacy protection throughout all research phases.

3.5. Methodology Limitations

Despite methodological rigour, several limitations must be acknowledged. Using a non-probability sampling technique reduces representativeness because the respondents were recruited online, which may not include the full diversity of the target population.

A primary limitation relates to the unequal distribution between Portuguese and Danish respondents. While the study was intended for international comparisons, the Danish sample was too small to perform statistical testing. Thus, the analysis will concentrate on the Portuguese responses and provide the Danish responses descriptively to maintain the international component of the study.

The design is cross-sectional and can only capture perceptions at one point in time, making it difficult to speak causally. Additionally, self-reported data may be subject to biases such as social desirability or overestimation of behavioural intentions. Finally, as the survey was conducted in English, some respondents, due to the fact of being non-native speakers, may not have fully understood certain questions, potentially leading to interpretation errors or response bias.

Overall, the study nonetheless provides interesting perspectives in terms of how Millennials and Gen Z experience and accept in-store technologies and will be beneficial in the comprehension of technology acceptance in a fashion retail context.

4. Presentation of Results

This chapter details the empirical results of the quantitative data analysis using SPSS based on the survey administered online. The inferential analyses were conducted exclusively on the Portuguese sample due to the unequal number of responses from Portugal and Denmark, which enhances the robustness of the analysis. The Danish results were provided descriptively to maintain the international context of the study and to provide a cultural context for the results.

The chapter is organised as follows:

- Section 4.1 offers an overview of the full sample, including descriptive results and construct factorability.
- Section 4.2 presents detailed findings for the Portuguese sample, including measurement validity, inter-construct relationships, and hypothesis testing. Section.
- 4.3 reports descriptive insights from the Danish sample.
- And 4.4 summarises the main findings and discusses their alignment with theoretical expectations.

4.1. Overview of the Full Sample

This section provides an overview of the full sample, consisting of a total of 284 valid answers collected in Portugal (n = 255) and Denmark (n = 29). Demographic characteristics, familiarity with in-store technologies, and an assessment of construct factorability are the analyses presented, respectively, in the sections 4.1.1, 4.1.2 and 4.1.3. The overall participant profile is described by these results, which also ensure the data's adequacy for subsequent inferential analyses, conducted separately for each country.

4.1.1. Respondents Profile

From the total of 284 valid answers collected, 89.8% were Portuguese and 10.2% were Danish. The sample was composed of 61.3% female respondents and 38.7% males. Nearly half of the participants (45.4%) were between 23 and 27 years old, followed by those aged 28-35 (28.2%), 36-44 (18.3%) and 18-22 (8.1%), covering both early and late segments of Generations Z and Millennials.

The majority of the respondents held a Bachelor's (47.5%) or Master's degree (29.9%), while 18% had completed high school. While the distribution in education levels was quite compact, the income levels were diverse, with 35.6% earning €1,000–€1,499 and 19.4% between €1,500–€1,999. These distributions indicate a predominantly young, educated and employed sample that aligns with the study's focus of fashion retail consumers. Table 4.1 presents a summary of the data involving these indicators.

Table 4.1. Respondents' Demographic Characteristics (Full Sample, N = 284)

Variable	Category	n	%
Nationality	Portuguese	255	89.8
	Danish	29	10.2
Gender	Female	174	61.3
	Male	110	38.7
Age Group	18–22 years	23	8.1
	23–27 years	129	45.4
	28–35 years	80	28.2
	36–44 years	52	18.3
Education Level	Less than high school	7	2.5
	High school diploma / equivalent	51	18.0
	Bachelor's degree	135	47.5
	Master's degree	85	29.9
	Doctorate (PhD)	2	0.7
	Other (specified)	4	1.4
Monthly Net Income (after taxes)	Less than €500	14	4.9
	€500 – €999	31	10.9
	€1,000 – €1,499	101	35.6
	€1,500 – €1,999	55	19.4
	€2,000 – €2,499	27	9.5
	€2,500 or more	30	10.6
	Prefer not to say	26	9.2

Source. *Author's own elaboration based on survey data (2025)*

The overall sample reflects the study's target audience of digitally savvy and fashion-oriented consumers, predominantly from Portugal. The age, educational and income composition ensure that participants are representative of the consumer segments that are most likely to engage with ISTs, providing a strong foundation for the subsequent analyses.

4.1.2. Familiarity with In-Store Technologies

Table 4.2 contains the distribution of the different levels of exposure to different ISTs. The most frequently used ISTs were self-checkout (86.6%), QR/barcode scanning (74.6%), and Click & Collect (73.6%). Digital signage (39.8%) and self-service kiosks (57.7%) presented moderate familiarity, and virtual mirrors and smart fitting rooms with AR/AI features remained the least known, with 60.2% of participants indicating they had never seen them in stores. The

results suggest a broad awareness of the more conventional technologies, but not as much experience with more innovative tech solutions.

Table 4.2. Familiarity with In-Store Technologies (Full Sample, N = 284)

In-Store Technology	"I have used it" (%)	"I have seen it, but never used it" (%)	"I have never seen it" (%)
Digital Signage	39.8	37.3	22.9
Virtual Mirrors & Smart Fitting Rooms (AR/AI)	13.7	26.1	60.2
QR Code / Barcode Scanning	74.6	12.7	12.7
Self-Checkout	86.6	6.7	6.7
Click & Collect	73.6	16.9	9.5
Self-Service Kiosks	57.7	23.6	18.7

Source. *Author's own elaboration based on survey data (2025)*

Data suggests that consumers are comfortable with practical, convenience-based technologies, but more sceptical when it comes to immersive or experimental technological tools.

4.1.3. Assessment of Construct Factorability

To verify the suitability of the dataset for factor analysis Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity were verified. The KMO value was 0.943, demonstrating excellent sampling adequacy.[7] Bartlett's test of sphericity was significant (χ^2 = 14,903.594, df = 1,225, p < .001), confirming that correlations among items were sufficiently large for factor analysis.

Table 4.3. KMO and Bartlett's Test of Sampling Adequacy (Full Sample, N = 284)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,943
Bartlett's Test of Sphericity	Approx. Chi-Square	14903,594
	df	1225
	Sig.	<,001

Source. *Author's own elaboration based on survey data (2025)*

These results demonstrate that the data gathered meet the statistical requirements for factor analysis and can proceed further to construct-level validation with the Portuguese sample.

[7] Values above 0.90 are considered superb according to Hair et al. (2019).

4.2. Findings for the Portuguese Sample

Due to sample size differences, the Portuguese sample became the focus of the study, and this section presents the statistical analyses applied. The analysis conducted includes: 4.2.1 demographic characteristics, 4.2.2. familiarity with in-store technologies, 4.2.3 measurement of reliability and validity. 4.2.4 examination of inter-construct relationships, 4.2.5 testing of the proposed hypotheses through regression analyses, and 4.5.6 exploratory analysis (generational differences in CX).

The outcomes offer empirical findings on the relationships of PEOU, PU, ATT, BI, and the CX dimensions in the scope of ISTs in the context of Portuguese fashion retail.

4.2.1. Respondents Profile

The sample of Portuguese participants corresponded to a total of 255 valid answers. The sample was mainly composed of female participants, corresponding to 63.5% of the total valid answers, with 36.5% identified as males. Data shows that Portuguese individuals who participated in the study held a Bachelor's degree (47.5%) or a Master's degree (30.2%) and reported monthly incomes between €1,000–€1,499 (38%) and €1,500–€1,999 (20%). Gen Z represented 56.9% of the samples, while Millennials accounted for 43.1%.

In order to ensure consistency with the analysis conducted in Section 4.2.6, where generational differences in the Portuguese sample are investigated, the age group variable was grouped into two broad categories: Generation Z and Millennials, corresponding to the target generation analysis of this study. This grouping was later used in the Danish sample (Section 4.3.1) to enhance methodological consistency and comparability across the two cultural contexts datasets. The summary table below displays all the results in question.

Table 4.4. Respondents' Demographic Characteristics (Portuguese Sample, N = 255)

Variable	Category	n	%
Gender	Female	162	63.5
	Male	93	36.5
Education Level	Less than high school	7	2.7
	High school diploma or equivalent	47	18.4
	Bachelor's degree	121	47.5
	Master's degree	77	30.2
	Doctorate (PhD)	1	0.4
	Other	2	0.8
Monthly Net Income (after taxes)	Less than €500	14	5.5
	€500–€999	30	11.8
	€1,000–€1,499	97	38.0
	€1,500–€1,999	51	20.0
	€2,000–€2,499	23	9.0
	€2,500 or more	16	6.3
	Prefer not to say	24	9.4
Generation	Generation Z	145	56.9
	Millennials	110	43.1

Source. *Author's own elaboration based on survey data (2025)*

In summary, the Portuguese sample demonstrates a balanced generational and educational profile, predominantly composed of young, educated consumers within the working-age population - in accordance with the analysis performed on the full sample.

4.2.2. Familiarity with In-Store Technologies

In Table 4.5, it's possible to check the summary data of the Portuguese participants' familiarity with ISTs. The outcomes indicate that the widely used technologies are Self-Checkout (87.1%) and QR/Barcode Scanning (74.9%), followed by Click & Collect (71.8%) and Self-Service Kiosks (57.6%), reflecting the broad adoption of these tools in Portugal's fashion retail context. Digital Signage (38.8%) shows moderate usage, and Virtual Mirrors and Smart Fitting Rooms incorporating AR and AI specs remain the least experienced technology (with only 11.8% having used them), emphasising their emerging rather than established role in physical retail settings.

Table 4.5. Familiarity with In-Store Technologies (Portuguese Sample, N = 255)

In-Store Technology	"I have used it" (%)	"I have seen it, but never used it" (%)	"I have never seen it" (%)
Digital Signage	38.8	36.9	24.3
Virtual Mirrors & Smart Fitting Rooms (AR/AI)	11.8	25.9	62.4
QR Code / Barcode Scanning	74.9	12.9	12.2
Self-Checkout	87.1	7.1	5.9
Click & Collect	71.8	18.4	9.8
Self-Service Kiosks	57.6	23.1	19.2

Source. *Author's own elaboration based on survey data (2025)*

These findings highlight a clear hierarchy in the adoption of in-store technologies among Portuguese consumers, where more established tools focused on efficiency and autonomy are more established and innovative and immersive technologies like Virtual Mirrors and Smart Fitting Rooms are still in the early stages of market penetration.

4.2.3. Measurement Reliability and Validity

Before conducting hypothesis testing, it was needed to confirm the reliability and validity of the measurement model to ensure that the constructs were reliable and theoretically sound. This sub-section provided the results of the analysis of internal consistency (using Cronbach's Alpha) and construct validity (via the factor analysis).

Reliability Analysis

Internal consistency reliability was assessed through Cronbach's Alpha, which evaluates the degree of correlation among items within each construct.[8] As shown in Table 4.6, all constructs demonstrated strong reliability, with Cronbach's Alpha values ranging from 0.861 (PEOU) to 0.965 (CX_Emotional). These results confirm that all measurement scales are internally consistent and suitable for further analysis. No items were removed, as all indicators contributed positively to their respective constructs.

[8] According to Hair et al. (2019), a Cronbach's Alpha value above 0.70 indicates acceptable reliability, while values above 0.90 reflect excellent internal consistency.

Table 4.6. Reliability Analysis of Constructs (Portuguese Sample, N = 255)[9]

Construct	No. of Items	Cronbach's α
Perceived Ease of Use (PEOU)	4	0.861
Perceived Usefulness (PU)	4	0.912
Attitude Toward Use (ATT)	7	0.938
Behavioural Intention (BI)	3	0.931
Customer Experience – Cognitive	7	0.940
Customer Experience – Emotional	10	0.965
Customer Experience – Social (Customer-to-Customer)	5	0.912
Customer Experience – Social (Customer-to-Employee)	5	0.918
Customer Experience – Physical	5	0.935

Source. *Author's own elaboration based on survey data (2025)*

Validity Analysis

To assess construct validity, the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity were conducted for both models (TAM and Customer Experience). These tests verify whether the data are suitable for factor analysis by evaluating sampling adequacy and the intercorrelations between items.[10]

Table 4.7. Construct Validity (KMO and Bartlett's Test Results)

Construct Group	KMO	Bartlett's Test (Approx. Chi-Square)	df	Sig.
TAM (PEOU, PU, ATT, BI)	0.903	3845.510	153	<0.001
CX (Cognitive, Emotional, Social-Customer, Social-Employee, Physical)	0.948	8845.020	496	<0.001

Source. *Author's own elaboration based on survey data (2025)*

Both models demonstrated a very good overall sampling adequacy, with KMO values above 0.90, which indicates that the data were suitable for factor analysis. Moreover, Bartlett's Test of Sphericity was significant ($p < .001$) for both models, indicating that the variables are

[9] Cronbach's $\alpha \geq 0.70$ indicates acceptable reliability; ≥ 0.80 is considered good, and ≥ 0.90 excellent (Hair et al., 2019).

[10] The KMO statistic ranges from 0 to 1, where values above 0.8 indicate meritorious sampling adequacy (Kaiser, 1974).

correlated and factor analysis is an appropriate statistical analysis for these constructs. These results validate the construct reliability and internal consistency of the measurement items.

Overall, the results for the reliability and validity analyses validate that the measurement model in this study is consistent and statistically valid. All constructs showed strong internal reliability, as indicated by Cronbach's Alpha scores well above the desirable cutoff of .70 for reliability and high levels of construct validity based on KMO values above .90 and significant Bartlett tests.

4.2.4. Inter-Construct Relationships

Analyses such as descriptive statistics and Pearson correlation were conducted to analyse the relationship between the constructs. The mean and variability of each construct are summarised by the descriptive statistics, while the strength and direction of associations among variables are assessed by the correlations. This analysis provides preliminary insights before hypothesis testing.

Descriptive Statistics

Overall, the descriptive statistics indicate generally positive perceptions across cooperation constructs. Perceived Ease of Use (M = 5.48) and Perceived Usefulness (M = 5.16) were the two highest mean scores among the technology acceptance variables, indicating that customers perceived ISTs as intuitive and beneficial for shopping. Likewise, Attitude toward Use (M = 5.14) and Behavioural Intention (M = 5.11) indicated overall positive evaluations of customers' attitudes toward these technologies, suggesting a desire to engage with them. The Cognitive (M = 4.44) and Emotional (M = 4.29) variables of CX displayed the highest means, while the CX Social Employee (M = 3.83) had the lowest mean, reflecting the possible lower likelihood of customers interacting with employees via ISTs. Overall means surpass the mid-point of the scale on all constructs, suggesting a positive attitude toward technology-enabled retail experiences.

Table 4.8. Descriptive Statistics for Main Constructs (Portuguese Sample, N = 255)

Construct	N	Minimum	Maximum	Mean	Std. Deviation
PEOU	255	1	7	5.48	1.19
PU	255	1	7	5.16	1.35
ATT	255	1	7	5.14	1.26
BI	255	1	7	5.11	1.44
CX_COGNT	255	1	7	4.44	1.38
CX_EMOT	255	1	7	4.29	1.25
CX_SOC_CUST	255	1	7	4.18	1.43
CX_SOC_EMP	255	1	7	3.83	1.47
CX_PHYS	255	1	7	4.16	1.33
CX_OVERALL	255	1	7	4.18	1.10

Source. *Author's own elaboration based on survey data (2025)*

Correlations

Table 4.9 illustrates the correlation matrix for all constructs. All variables presented positive and statistically significant correlations ($p < .05$). The strongest correlations were found between the CX dimensions and Overall CX ($r = .78$- $.85$), establishing internal consistency within the Customer Experience framework.

When analysing the TAM variables, it's possible to check that Perceived Usefulness and Perceived Ease of Use had a high correlation ($r = .68$, $p < .001$), which also correlated strongly with Behavioural Intention ($r = .53$ and $r = .35$), suggesting that consumers' intention to use in-store technologies primarily depends on perceptions of usefulness and ease of use. Moderate positive correlations between dimensions of TAM and CX were also observed, indicating that greater acceptance of ISTs was associated with more positive experiential outcomes.

Table 4.9. Correlation Matrix among Constructs (Portuguese Sample, N = 255)[11]

Constructs	PEOU	PU	ATT	BI	CX_COGNT	CX_EMOT	CX_SOC_CUST	CX_SOC_EMP	CX_PHYS	CX_OVERALL
PEOU	1	.684**	.287**	.345**	.238**	.320**	.136*	.145*	.275**	.273**
PU		1	.397**	.533**	.361**	.516**	.277**	.210**	.470**	.449**
ATT			1	.495**	.368**	.423**	.255**	.154*	.415**	.396**
BI				1	.388**	.532**	.375**	.226**	.519**	.501**
CX_COGNT					1	.630**	.451**	.506**	.559**	.781**
CX_EMOT						1	.506**	.417**	.753**	.809**
CX_SOC_CUST							1	.640**	.618**	.807**
CX_SOC_EMP								1	.501**	.775**
CX_PHYS									1	.847**
CX_OVERALL										1

Source. *Author's own elaboration based on survey data (2025)*

[11] Pearson correlations are shown. $p < .01$ (2-tailed), $p < .05$ (2-tailed).

Overall, the correlation analysis suggests that Portuguese consumers tend to view in-store technologies positively, with consistent patterns across all the constructs. The significant connections among the TAM and CX dimensions are in line with the assumptions in the conceptual model, providing a rationale to continue testing the hypotheses in the next section of this study.

4.2.5. Hypothesis Testing and Model Estimation

This section discusses the testing procedures for the proposed relationships within the Technology Acceptance Model and Customer Experience framework. Four regression models were estimated to investigate the causal effects among constructs: (1) PEOU → PU (H2); (2) PEOU & PU → ATT (H3–H4); (3) ATT → BI (H5); and (4) BI → CX (H6).

The cross-country comparison required by the moderating effect indicated in H1 (cultural context: Portugal vs. Denmark) cannot be statistically tested due to the limited sample size of Danish participants (N = 29). Therefore, this section restricts the analyses to the Portuguese respondents (N = 255), where N was sufficient for regression-based hypothesis testing. Descriptive results of the Danish sample follow in Section 4.3 in order to retain contextual information but still illustrate an international study.

H2: Effect of Perceived Ease of Use on Perceived Usefulness

To test H2, a linear regression analysis was conducted to assess if PEOU is a significant predictor of PU for Portuguese respondents.

The main results, including model fit, significance in ANOVA, and standardised regression coefficients, are illustrated in Table 4.10.

Table 4.10. Regression Summary — H2: PEOU → PU (Portugal, N = 255)

Dependent Variable	Predictor	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
PU	PEOU	.684	.468	.466	.98531	222.508	<.001	.774	.052	.684	14.917	<.001	1.000	1.000

Source. *Author's own elaboration based on survey data (2025)*

The regression model was statistically significant ($F(1,253) = 222.51$, $p < .001$), explaining 46.8% of the variance in PU ($R^2 = .468$). PEOU had a positive and significant effect on PU ($B = .774$, $\beta = .684$, $t = 14.917$, $p < .001$), confirming H2. This relationship aligns with previous studies on technology acceptance in retail environments, as shown by Davis (1989), Venkatesh and Davis (2000), and Kim et al. (2016).

H3–H4: Effects of Perceived Ease of Use and Perceived Usefulness on Attitude Toward Use

To evaluate H3 and H4, linear regression analyses were carried out to examine whether PEOU and PU significantly predict ATT of Portuguese respondents. The key findings, including model fit statistics, the ANOVA significance of the model, and the standardised regression coefficients, are shown in Table 4.11.

Table 4.11. Regression Summary — H3–H4: Predictors of Attitude Toward Use (Portugal, N = 255)

Hypothesis	Dependent Variable	Predictor	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
H3	ATT	PEOU	.287	.082	.079	1.20516	22.713	<.001	.302	.063	.287	4.766	<.001	1.000	1.000
H4	ATT	PU	.397	.157	.154	1.15492	47.223	<.001	.369	.054	.397	6.872	<.001	1.000	1.000

Source. *Author's own elaboration based on survey data (2025)*

Both regression models were found to be statistically significant ($p < .001$). For H3, PEOU reported for 8.2% of the variance in ATT ($R^2 = .082$) and had a positive and significant effect on the outcome variable ($\beta = .287$, $p < .001$). For H4, Perceived Usefulness accounted for 15.7% of the variance ($R^2 = .157$), and exhibited a stronger effect ($\beta = .397$, $p < .001$). The results support the claim that both variables are positively associated with their outcome variable, while PU has a greater effect, consistent with the TAM claim that usefulness is the most important predictor of attitudes toward adopting new technology (Davis, 1989; Kim et al., 2016).

H5: Effect of Attitude Toward Use on Behavioural Intention

H5 was assessed via regression analysis to determine if ATT predicts BI for Portuguese respondents. The key results, including the model fit, significance of ANOVA, and standardised regression coefficients, are shown below in Table 4.12.

Table 4.12. Regression Summary — H5: ATT → BI (Portuguese Sample, N = 255)

Hypothesis	Dependent Variable	Predictor	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
H5	BI	ATT	.495	.245	.242	1.24927	82.256	<.001	.566	.062	.495	9.069	<.001	1.000	1.000

Source. *Author's own elaboration based on survey data (2025)*

The regression model was statistically significant ($F(1,253) = 82.26$, $p < .001$), explaining 24.5% of the variance in BI ($R^2 = .245$). ATT had a positive and significant effect on BI ($B = .566$, $\beta = .495$, $t = 9.07$, $p < .001$), confirming H5. This finding suggests that respondents with

more favourable attitudes toward ISTs are more likely to intend to use them, aligning with prior TAM research (Davis, 1989; Kim et al., 2016; Venkatesh & Davis, 2000).

H6: Effect of Behavioural Intention on Customer Experience

To check H6, a simple linear regression was used to evaluate whether BI indicates a significant predictor of Overall CX (CX_OVERALL) from the perspective of Portuguese respondents. The primary output with results, including model fit, significance in ANOVA, and the standardised regression coefficients, can be checked in Table 4.13.

Table 4.13 Regression Summary — H6: BI → CX_OVERALL (Portuguese Sample, N = 255).

Hypothesis	Dependent Variable	Predictor	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
H6	CX_OVERALL	BI	.501	.251	.248	.95437	84.931	<.001	.385	.042	.501	9.216	<.001	1.000	1.000

Source. *Author's own elaboration based on survey data (2025)*

The regression model was statistically significant, $F(1,251) = 84.93$, $p < .001$, explaining 25.1% of the variance in Overall CX ($R^2 = .251$). BI had a positive and significant effect on CX ($B = .385$, $\beta = .501$, $t = 9.216$, $p < .001$), supporting H6. These results indicate that respondents with stronger behavioural intentions toward using ISTs reported a more positive overall customer experience. This finding aligns with previous studies highlighting the link between behavioural intention, engagement, and satisfaction in technology-enabled retail environments (Kim et al., 2016; Bustamante & Rubio, 2017).

4.2.6. Exploratory Analysis: Generational Differences in Customer Experience

The potential generational differences between Gen Z and Millennials regarding their perceptions towards ISTs (PEOU, PU, ATT, BI) as well as the CX dimensions (cognitive, emotional, social – customer, social – employee, physical, and overall) were explored in this section.

Table 4.14 provides the descriptive statistics of the TAM constructs by generational cohort. PEOU and PU indicate highly similar means, suggesting both generations view ISTs as favourable by perceiving them as easy to use and beneficial for their shopping experiences.

Table 4.14. Descriptive Statistics for Technology Acceptance Constructs by Generation

Variable	Generation	N	Mean	Std. Deviation
PEOU	Gen Z	145	5.448	1.224
	Millennials	110	5.511	1.152
PU	Gen Z	145	5.153	1.369
	Millennials	110	5.173	1.327
ATT	Gen Z	145	5.229	1.195
	Millennials	110	5.023	1.322
BI	Gen Z	145	5.163	1.519
	Millennials	110	5.046	1.321

Source. *Author's own elaboration based on survey data (2025)*

Table 4.15 summarises the descriptive statistics for the CX dimensions to further assess the CX customer perceptions. Both cohorts reported comparable mean values across all dimensions, with Millennials showing slightly higher scores in the Cognitive and Social–Employee dimensions. These outputs indicate that even though Gen Z tends to value efficiency and digital autonomy, Millennials might place a bigger importance on staff interaction and overall understanding of the store environment.

Table 4.15. Descriptive Statistics for Customer Experience Constructs by Generation

Variable	Generation	N	Mean	Std. Deviation
CX_COGNT	Gen Z	145	4.358	1.351
	Millennials	110	4.550	1.409
CX_EMOT	Gen Z	145	4.287	1.202
	Millennials	110	4.296	1.316
CX_SOC_CUST	Gen Z	145	4.177	1.504
	Millennials	110	4.179	1.322
CX_SOC_EMP	Gen Z	145	3.641	1.530
	Millennials	110	4.082	1.349
CX_PHYS	Gen Z	145	4.232	1.285
	Millennials	110	4.075	1.394
CX_OVERALL	Gen Z	145	4.139	1.102
	Millennials	110	4.236	1.101

Source. *Author's own elaboration based on survey data (2025)*

The independent samples t-tests, shown in Table 4.16, demonstrated no significant differences across generations for any of the TAM constructs ($p > .05$), indicating that both Gen

Z and Millennials perceive in-store technologies as equally easy to use, useful, and likely to encourage adoption.

Table 4.16. Independent Samples t-Test for Technology Acceptance Constructs

Variable	t	df	p (2-tailed)	Mean Difference
PEOU	-0.418	253	0.676	-0.063
PU	-0.113	253	0.910	-0.019
ATT	1.300	253	0.195	0.206
BI	0.648	253	0.517	0.118

Source. *Author's own elaboration based on survey data (2025)*

As noted in Table 4.17, however, there was only one significant difference in the CX constructs: the Social–Employee dimension ($t = -2.395$, $p = .017$), suggesting that Millennials have a preference to interact with staff in comparison with Gen Z, who feel more comfortable with self-service and digital experiences (less human contact).

Table 4.17. Independent Samples t-Test for Customer Experience Dimensions

Variable	t	df	p (2-tailed)	Mean Difference
CX_COGNT	-1.100	253	0.273	-0.191
CX_EMOT	-0.048	253	0.962	-0.008
CX_SOC_CUST	-0.010	253	0.992	-0.002
CX_SOC_EMP	-2.395	253	0.017	-0.440
CX_PHYS	0.936	253	0.350	0.158
CX_OVERALL	-0.694	253	0.488	-0.097

Note. * p < .05.

Source. *Author's own elaboration based on survey data (2025)*

While most p-values did not indicate statistically significant generational effects, small mean differences across the dimensions may still be interesting to interpret. Effect sizes analysis (Cohen's d, Hedges' g) showed that all differences were small ($|d| < 0.3$), which suggests that generational effects are limited and context dependent.

Hence, Gen Z and Millennials exhibit similar levels of technology acceptance and customer experience perceptions. There was only one noticeable difference found regarding the CX

constructs. The social employee dimension suggests a shift in human interaction, as Millennials appear to appreciate the direct contact with staff, contrasting with Gen Z, which is more autonomous in its technology-driven shopping experiences.

4.3. Insights from the Danish Sample

The Danish subsample (N = 29 was significantly smaller, yet the Danish results are referenced to help contextualise consumer beliefs and engagement with ISTs overall, in a different cultural setting. The following analyses are simply descriptive and do not offer any support for inferential conclusions as they are meant to demonstrate general patterns.

4.3.1. Respondents Profile

The Danish sample was composed of a total of 29 valid responses to the survey, where 58.6% of the participants were males and 41.4% females. A Bachelor's degree (48.3%) or a Master's degree (27.6%) were the education levels with more expression, indicating a highly educated sample. Nearly half of the participants (48.3%) reported a monthly income of €2,500 or more, indicating a wealthy group. The generational data collected for this sample indicated that 75.9% were Millennials and 24.1% were Gen Zs.

To ensure consistency with the analyses performed in the Portuguese Sample (Section 4.2.6), the age groups were consolidated into two groups – Millennials and Gen Zs. Summary Table 4.18 displays all the results collected.

Table 4.18. Respondents' Demographic Characteristics (Danish Sample, N = 29)

Variable	Category	n	%
Gender	Female	12	41.4
	Male	17	58.6
Education Level	High school diploma or equivalent	4	13.8
	Bachelor's degree	14	48.3
	Master's degree	8	27.6
	Doctorate (PhD)	1	3.4
	Other	2	6.9
Monthly Net Income (after taxes)	€500–€999	1	3.4
	€1,000–€1,499	4	13.8
	€1,500–€1,999	4	13.8
	€2,000–€2,499	4	13.8
	€2,500 or more	14	48.3
	Prefer not to say	2	6.9
Generation	Gen Z	7	24.1
	Millennials	22	75.9

Source. *Author's own elaboration based on survey data (2025)*

In general, Denmark's sample represents a well-educated and economically active section of society that would align with fashion retail consumers who are familiar with in-store technologies. The Danish sample is quite distinct from the Portuguese cohort, representing an older, wealthier and slightly more male-dominant group.

4.3.2. Familiarity with In-Store Technologies

A summary regarding Danish participants' familiarity with ISTs is represented in Table 22. The most widely used technologies were Click & Collect (89.7%) and Self-Checkout (82.8%), followed by QR Code/Barcode Scanning (72.4%) and Self-Service Kiosks (58.6%). The data showed that exposure to Digital Signage (48.3%) and Virtual Mirrors or Smart Fitting Rooms with AR/AI (31%) was more limited, indicating that Danish consumers are used to efficiency-driven technologies, while experiential or interactive solutions remain less prevalent.

Table 4.19. Familiarity with In-Store Technologies (Danish Sample, N = 29)

In-Store Technology	"I have used it" (%)	"I have seen it, but never used it" (%)	"I have never seen it" (%)
Digital Signage	48.3	41.4	10.3
Virtual Mirrors / Smart Fitting Rooms (AR & AI)	31.0	27.6	41.4
QR Code / Barcode Scanning	72.4	10.3	17.2
Self-Checkout	82.8	3.4	13.8
Click & Collect	89.7	3.4	6.9
Self-Service Kiosks	58.6	27.6	13.8

Source. *Author's own elaboration based on survey data (2025)*

These results illustrate an adoption gap between functional and experiential technologies in Denmark's retail context. Convenient technologies are well integrated into consumers' shopping routines, while the immersive type, such as Virtual Mirrors/Smart Fitting Room with incorporated AR/AI specs, remains at an early stage of acceptance. In comparison to the Portuguese study sample, Danish consumers seem a little more familiar with self-service and efficiency-oriented technologies, whilst the use of immersive and experiential technologies in stores appears comparably low among both countries.

4.3.3. Construct Descriptive Statistics

The descriptive statistics for the main constructs measured among Danish respondents are presented in Table 4.20. The findings, based on the means, indicate moderately favourable

perceptions across all variables, with the constructs PEOU (M = 5.31) and PU (M = 5.18) showing the highest scores. CX overall displayed a slightly lower mean (M = 4.19), but still above the mid-point of the scale. These results are reported for descriptive purposes only, without reliability or correlation testing due to the smaller sample size (N=29), aligning with the exploratory aim of this section.

Table 4.20. Descriptive statistics for the main constructs (Danish Sample, N = 29)

Construct	N	Minimum	Maximum	Mean	Std. Deviation
Perceived Ease of Use (PEOU)	29	1.00	6.50	5.31	1.08
Perceived Usefulness (PU)	29	1.00	7.00	5.18	1.46
Attitude Toward Use (ATT)	29	1.00	7.00	4.74	1.50
Behavioural Intention (BI)	29	1.00	7.00	4.56	1.61
Customer Experience (CX_OVERALL)	29	1.60	6.08	4.19	1.07

Source. *Author's own elaboration based on survey data (2025)*

These findings indicate that Danish participants generally have a positive perspective of IST, especially in the dimensions of ease of use and usefulness. Nevertheless, the overall impact on their experience is more moderate, indicating a more conservative interaction with technology-enabled retail contexts.

4.4. Summary of Hypotheses Testing Results

The statistical results of the hypothesis tested in this research are summarised in this section. Following the proposed conceptual model, six hypotheses were created to measure the relationship between the TAM constructs and the CX dimensions. As stated before, the moderating hypothesis (H1) related to the cultural context was not tested due to unequal sample sizes between the chosen countries. For that reason, the following summary focuses on the Portuguese sample (N = 255).

Table 4.21. Summary of Hypotheses Testing Results (Portuguese Sample, N = 255)

Hypothesis	Relationship Tested	Standardised Coefficient (β)	R^2	p-value	Supported
H1	Cultural context (Portugal vs. Denmark) moderates the model	—	—	—	Not tested
H2	Perceived Ease of Use (PEOU) → Perceived Usefulness (PU)	.684	.468	< .001	Supported
H3	Perceived Ease of Use (PEOU) → Attitude Toward Use (ATT)	.287	.507	< .001	Supported
H4	Perceived Usefulness (PU) → Attitude Toward Use (ATT)	.397	.507	< .001	Supported
H5	Attitude Toward Use (ATT) → Behavioural Intention (BI)	.495	.245	< .001	Supported
H6	Behavioural Intention (BI) → Customer Experience (CX_OVERALL)	.501	.251	< .001	Supported

Source. *Author's own elaboration based on survey data (2025)*

The results of all the tested hypotheses (H2–H6) showed they were statistically supported, confirming the theoretical assumptions of the TAM and its extensions towards CX. PEOU and

PU both showcased a positive impact on ATT, which had an influence on BI that, eventually, enhanced CX with ISTs. These results confirm the strength of the model under testing and provide empirical support for combining technology acceptance and experience constructs in the fashion retail context.

4.4.1. Discussion of Findings

This section outlines the empirical results from hypothesis testing regarding the theoretical framework established in Chapter 2. The confirmed relationships between the Technology Acceptance Model constructs and Customer Experience dimensions support that technology acceptance processes move beyond functional adoption processes and shape the experiential results of consumers' in-store interactions. These findings strengthen the relevance of utilising TAM to interpret CX engagement with ISTs in the fashion retail context.

Hypotheses:

H1. Cultural Context (Portugal vs. Denmark), based on Hofstede's framework, moderates the relationships within the Technology Acceptance Model.

H2. Perceived Ease of Use has a positive effect on Perceived Usefulness of in-store technologies.

H3. Perceived Ease of Use has a positive effect on Attitude Toward Using in-store technologies.

H4. Perceived Usefulness has a positive effect on Attitude Toward Using in-store technologies.

H5. Attitude Toward Using in-store technologies has a positive effect on Behavioural Intention to Use.

H6. Behavioural Intention to Use in-store technologies has a positive effect on Customer Experience.

TAM Core Relationships (H2–H5)

The findings support the principles of the Technology Acceptance Model originally proposed by Davis (1989) and further developed by Venkatesh and Davis (2000).

H2 studied the effect of Perceived Ease of Use on Perceived Usefulness, displaying a positive relationship ($\beta = .684$, $p < .001$). This result supports the idea that when in-store technologies are simple and intuitive, consumers are more likely to perceive them as beneficial to their shopping process. This aligns with previous work (Kim et al., 2016; Marangunić &

Granić, 2014), which argues that usability is an important contributor to perceived value and intentions to adopt in retail technology.

H3 and H4 assessed how Perceived Ease of Use and Perceived Usefulness influenced Attitude Toward Use. Both predictors were significant ($\beta = .287$ and $\beta = .397$, respectively, $p < .001$), with Perceived Usefulness being the strongest determinant of attitude. This data provides support to the theoretical hierarchy proposed by Venkatesh et al. (2003), where perceived utility tends to outweigh ease of use in shaping positive attitudes toward technology. These findings demonstrated that the consumer's perception of technological utility is key to understanding the consumer experience, specifically the role technology plays in the overall customer acceptance of smart retail tools, in accordance with empirical studies conducted by Kim et al. (2016). In terms of fashion retail, we could also assume that technology that incorporates convenience, personalisation, or efficiency—such as self-checkouts or AR-based fitting rooms positively enhances the consumer's affective evaluation of their experience.

H5, examining the relationship of Attitude Toward Use and Behavioural Intention, was also confirmed ($\beta = .495$, $p < .001$). TAM has had this notorious relationship for many years (Davis, 1989; Venkatesh & Davis, 2000), stating that a favourable attitude toward technology leads to stronger intentions to engage with it. This means that when shoppers perceive in-store technologies as easy, useful, and enjoyable, they are more likely to integrate them into their purchasing routines, as previously researched by other studies (Lee & Leonas, 2020; Adapa et al., 2019). Decision-making and convenience are enhanced through such intentions that reflect consumers' readiness to use interactive displays, self-service options, or AR mirrors.

Extension Toward Customer Experience (H6)

H6, meaning the positive and significant relationship between Behavioural Intention and Customer Experience Overall ($\beta = .501$, $p < .001$), is confirmed, and the results suggest that customers who intend to use in-store technologies perceive higher experiential value. Bustamante and Rubio (2017) and Andajani (2015) emphasised that experiential outcomes are strengthened when consumers actively engage with technological interfaces that provide efficiency, interactivity, and enjoyment. More recent retail studies (Alexander & Cano, 2019; Grewal et al., 2019) position technology as a central element in shaping the modern in-store journey, making the results resonate with the research.

Cross-Cultural and Generational Considerations (H1)

The conceptual relevance of H1 remains, although it was not possible to test the moderating effect of cultural context due to non-equivalent sample sizes between Portugal and Denmark. Cultural values influence how individuals perceive and adopt technology according to Hofstede's framework (Jan et al., 2022). The descriptive analysis from section 4.3 indicates that Danish respondents did exhibit slightly higher familiarity with more advanced in-store technologies, such as AR fitting rooms, in comparison with the Portuguese respondents. This tendency is consistent with Denmark's lower uncertainty avoidance and openness to innovation when compared to Portugal (The Culture Factor). Cultural differences will be further explored in Section 5.

Generational Differences in CX (Exploratory Analysis)

The exploratory analysis of generational differences (Section 4.2.6) revealed minimal differences between Gen Z and Millennials, with the main differentiation point being in the social–employee dimension of customer experience, where Millennials reported higher scores. Kim et al. (2021) stated in their findings that Generation Z consumers showcase a stronger preference for autonomous and contactless service interactions, but Millennials tend to value technology that enhances rather than replaces human service. In fashion retail, this could mean that Millennials enjoy having a mix between digital tools and assistance from employees, while Gen Z consumers are comfortable working with technology in a more independent way.

In summary, all tested hypotheses (H2–H6) were supported, confirming the robustness of the proposed model and the applicability of TAM to the fashion retail context. The findings demonstrate that the PEOU and the PU are important antecedents of the consumer's ATT and BI, which shows a positive influence on the overall CX. This empirical evidence supports the theoretical frame integration of technology acceptance and experiential frameworks (Davis, 1989; Bustamante & Rubio, 2017), showing that adopting technology, in a physical retail context, contributes not only to efficiency but also to enhancing enjoyment, engagement, and perceived value.

5. Conclusions

This chapter summarises the main findings of the study, declares its theoretical and practical contributions, presents its limitations, and provides recommendations for future research.

The objective is to integrate the empirical results presented in Chapter 4 with the broader conceptual and managerial implications of technology acceptance and customer experience in fashion retailing.

5.1. Recapitulation of Key Findings

Through the lens of the Technology Acceptance Model, the primary aim of this research was to analyse the impact of in-store technologies on customer experience within fashion retail. Secondly, it was also established that the goal was to compare perceptions between the Portuguese and Danish consumers, using cultural context, based on Hofstede's framework, as a potential moderating variable. Portuguese and Danish cultural contexts. The second goal was not tangible due to a limited Danish sample, which was just interpreted descriptively, while the inferential analysis was conducted on the Portuguese sample (N = 255).

Empirical results confirmed all theoretical relationships in the TAM–CX model (H2–H6). Perceived Ease of Use significantly predicted Perceived Usefulness, and both constructs positively influenced Attitude Toward Use. Further, Attitude Toward Use strongly predicted Behavioural Intention, which emerged as a significant predictor of overall Customer Experience. These results support the theoretical prediction that technology acceptance processes have an impact on experiential consequences in fashion retail settings.

In addition, the exploratory analysis of generational differences suggested little variance between Gen Z and Millennial consumers in their perceptions of ISTs, with the sole exception being the social–employee dimension of CX, with Millennials scoring higher. This suggests that both generational cohorts are equally receptive to digital interaction, though Millennials still value employee support when engaging with in-store technologies.

The descriptive cultural comparison between Portugal and Denmark revealed patterns consistent with Hofstede's framework. Portuguese consumers, marked by higher uncertainty avoidance and power distance, tend to value structure and reassurance when using in-store technologies. In contrast, Danish consumers, associated with greater individualism and indulgence, show more autonomy and openness to self-service or experimental tools. Notably, these cultural tendencies were also reflected during data collection: Portuguese participants were generally more responsive and engaged, while Danish respondents were more reserved. This difference may reflect Portugal's collectivist orientation and Denmark's individualistic culture.

Overall, the study demonstrates that integrating TAM and CX frameworks offers a comprehensive approach to understanding technology-mediated retail shopping experiences, particularly within omnichannel and fashion contexts.

Building on these key findings, the research questions were tackled as follows.

RQ1 – The results demonstrated that ISTs impact all CX dimensions (cognitive, emotional, social, and physical), and that consumers who perceive ISTs as easy to use and useful described higher levels of convenience, engagement and satisfaction.

RQ2 – ISTs adoption is primarily driven by PU and PEOU, creating positive ATT and BI towards ISTs, which increases the overall fashion shopping experience.

RQ3 – While it was not possible to empirically test RQ3, the descriptive comparisons aligned with Hofstede's framework, particularly concerning uncertainty avoidance and individualism, with Portuguese consumers preferring reassurance and structure when using ISTs, and Danish consumers exhibiting higher autonomy and openness to innovation.

RQ4 – Generational differences influence ISTs' adoption and perceptions through the expectations regarding human/technology interaction, with Millennials presenting more interest in some blended interaction with the presence of human contact in their IST encounters, whereas Gen Z prefers a more fully-digital experience, avoiding human contact.

5.2. Contributions to Research and Practice

This section presents the key contributions of the study to both academic research and managerial practice.

5.2.1. Theoretical Contributions

This study builds on existing research by combining the TAM with CX factors within a physical retail setting.

Although the TAM has been used extensively in online and mobile contexts (Davis, 1989; Venkatesh & Davis, 2000; Adapa et al., 2019; Vrontis et al., 2016), its application to analyse ISTs, with a focus on fashion retail, to explore CX and technology acceptance is limited.

The findings confirm that customer behavioural intention towards in-store technologies does positively impact overall customer experience and brings about a correlation between technology acceptance and experiential value. They also support recent perspectives (Grewal et al., 2019; Alexander & Cano, 2019), regarding the digital transformation of physical stores into immersive data-driven spaces.

In general, this research verifies TAM's usefulness in researching technology-driven innovation in physical retail settings.

5.2.2. Managerial Contributions

From a managerial perspective, the results provide actionable recommendations for fashion retailers who want to apply or enhance in-store technologies.

Findings indicate that ease of use is a powerful factor in shaping consumers' perceptions of usefulness and adoption, suggesting that streamlined, simple-to-use systems must be a priority. Technologies must also deliver clear functional and experiential benefits, such as convenience, efficiency, or engagement, to maximise customers' perceived value. The positive association between behavioural intention and consumer experience suggests that actively involving technology, either through staff assistance or some other interactive aspect, can positively contribute to satisfaction and overall brand experience.

Generational patterns further suggest that while both Millennials and Gen Z are open to the use of digital technologies, Millennials prefer a hybrid experience involving technology and human involvement, and Gen Zs are more comfortable interacting autonomously.

Overall, retailers should adopt flexible service designs capable of providing both digital and personal aspects to have an inclusive experience across generations and reinforce the strategic role of technology in enhancing the fashion retail experience.

5.3. Limitations

This study offers valuable insights and interesting research paths, but it is important to acknowledge some limitations:

I. Sample composition: The analysis focused primarily on Portuguese respondents due to the limited Danish sample, restricting cross-cultural generalisation.

II. Sampling method: The mixed use of convenience and snowball sampling may limit the representativeness of the broader population of fashion retail consumers.

III. Self-reported data: The answers are based on participants' personal opinions, which may be influenced by what they think is socially acceptable rather than their true feelings.

IV. Cross-sectional design: The study captures consumer perceptions at a single point in time, preventing assessment of behavioural change or longitudinal effects.

V. Geographic and cultural scope: The study focused exclusively on two European countries -Portugal and Denmark - which, despite their cultural contrasts, share certain regional similarities. Future research could extend this analysis to non-European contexts to explore how broader cultural diversity influences technology adoption and customer experience.

VI. Scope of technologies: The research considered a selected set of in-store technologies; future studies could examine additional or emerging tools such as AI-based styling assistants or VR-based store experiences.

These limitations do not undermine the validity of the findings but indicate areas where further empirical refinement could provide deeper insight.

5.4. Future Research Opportunities

The present findings could be expanded on by future research adopting broader and more diversified approaches. From a cross-cultural point of view, it would be interesting to include larger or additional country samples, allowing the test of cultural moderation effects under Hofstede's framework. Longitudinal research would also be useful to examine how consumers' perceptions shift when technologies become increasingly familiar and as innovation cycles become smaller.

On a methodological level would also be interesting to combine approaches that could provide richer insights into emotional and social factors shaping customer–technology interaction, such as a qualitative approach, interviews, and observations of in-store interactions with tech. Generationally speaking, applying a bigger scope could also bring interesting results into the discussion (either older or younger generations) due to what the contrasts may reveal. Further studies may also focus on specific ISTs instead of studying the broader perceptions, assessing their specific contributions to CX.

In conclusion, this study demonstrates that in-store technologies significantly shape the customer experience in fashion retail. The integration of the TAM with the CX dimensions reveals how cognitive and emotional mechanisms together drive technology adoption and satisfaction.

The findings contribute to both academic and managerial fields, offering a foundation for future research and for specialists seeking to enhance physical retail experiences.

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7. Annexes

Annex A. Measurement Items for the Technology Acceptance Model (TAM) adapted from Kim et al. (2016)

Table 3. Summary of measurement items.

Variable (source)		Items
Beliefs[a] Childers et al.'s (2001)	Perceived ease of use	• This technology would be clear and understandable • This technology would not require a lot of mental effort • This technology would be easy to use • This technology would allow me to shop the way I want to shop
	Perceived usefulness	• This technology would improve my shopping productivity • This technology would improve my shopping ability • This technology would be useful in buying what I want • This technology would enhance my effectiveness in shopping
	Perceived enjoyment	• Shopping with this technology would make me feel good • Shopping with this technology would be enjoyable • Shopping with this technology would be exciting • Shopping with this technology would be fun for its own sake • Shopping with this technology would involve me in the shopping process • Shopping with this technology would be interesting
Attitude[b] Lee et al. (2006)		• Bad–Good • Inferior–Superior • Unpleasant–Pleasant • Boring–Interesting • Poor –Excellent • Not worthwhile–Worthwhile • Not useful–Useful
Intention[a] Lee et al. (2006)		• I would use this technology for apparel shopping • I would visit a store that provides this technology for its apparel shoppers • I would purchase apparel from a store that provides its shoppers with this technology

[a]Anchored with 7-point Likert-type scale descriptors, from 1 = 'Strongly disagree' to 7 = 'Strongly agree'.
[b]7-point semantic differential scales.

Source. *Kim, H. Y., Lee, J. Y., Mun, J. M., & Johnson, K. K. P. (2016). Consumer adoption of smart in-store technology: Assessing the predictive value of attitude versus beliefs in the technology acceptance model. International Journal of Fashion Design, Technology and Education, 10(1), 26–36. https://doi.org/10.1080/17543266.2016.1177737.*

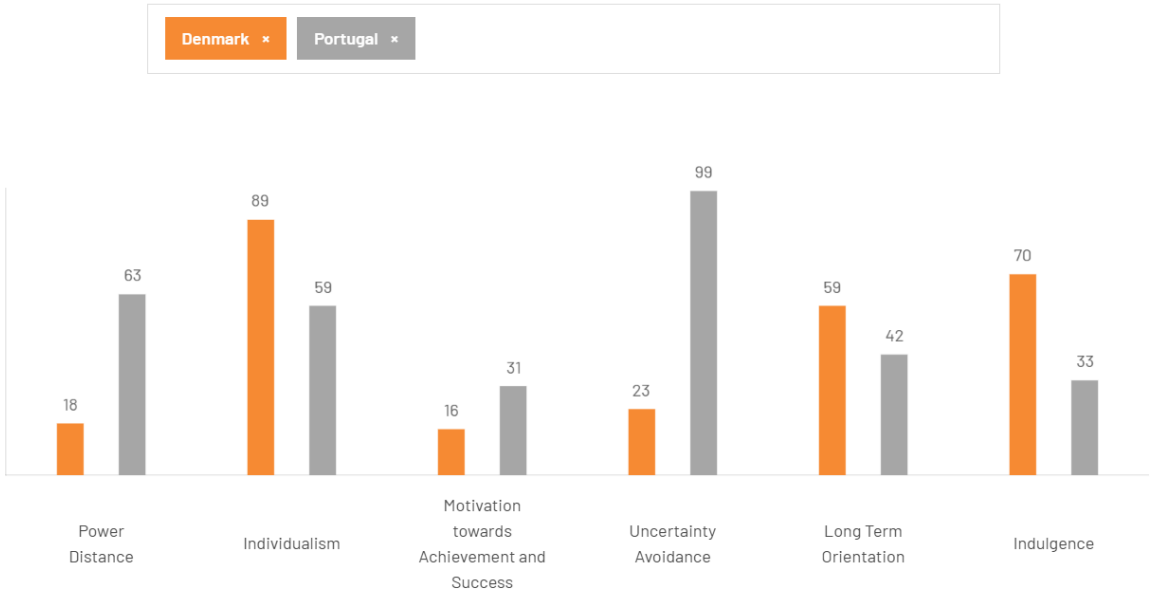
Annex B. Exploratory Factor Analysis and Internal Consistency of Customer Experience Dimensions adapted from Bustamante and Rubio (2017)

Experiential component	Items	Factor loadings	Cronbach's α
Cognitive	*The environment of this retail store, the display of its products, services, etc.:*		
	Make me think and reflect (CE2)	0.67	0.92
	Teach me interesting things (CE4)	0.66	
	Awaken my curiosity (CE5)	0.63	
	Awaken my creativity (CE6)	0.74	
	Bring interesting ideas to mind (CE7)	0.73	
	Inspire me (CE9)	0.69	
	Interest me (CE10)	0.62	
Affective	*The environment of this retail store, the display of its products, services, etc., make me feel:*		
	In a good mood (AE1)	0.77	0.96
	Contented (AE2)	0.81	
	Happy (AE3)	0.82	
	Optimistic (AE4)	0.82	
	Hopeful (AE5)	0.77	
	Enthusiastic (AE6)	0.78	
	Thrilled (AE7)	0.80	
	Surprised (AE8)	0.66	
	Amazed (AE9)	0.68	
	Astonished (AE10)	0.69	
Social experience with customers	*Of social interaction in this store:*		
	I advise customers who ask my opinion on this store's products/services (SEC1)	0.82	0.90
	I ask the opinions of customers who shop at this store (SEC3)	0.81	
	I share opinions with this store's customers (SEC5)	0.78	
	I interact with this store's customers (SEC6)	0.85	
	I consider myself a member of the community of customers who shop at this store (SEC7)	0.84	
Social experience with employees	*Of social interaction in this store:*		
	I give my opinion to this store's employees (SEE1)	0.61	0.91
	I receive advice from this store's employees (SEE2)	0.83	
	I ask the opinions of this store's employees (SEE3)	0.83	
	I share my opinions with this store's employees (SEE4)	0.78	
	I interact with this store's employees (SEE5)	0.79	
Physical	*The environment of this retail store, the display of its products, services, etc., make me feel:*		
	Energy (PE1)	0.70	0.93
	Vitality (PE2)	0.70	
	Comfort (PE3)	0.93	
	Relaxation (PE4)	0.90	
	Well-being (PE5)	0.62	

Table I. Exploratory factor analysis and internal consistency

Source. *Bustamante, J. C., & Rubio, N. (2017). Measuring customer experience in physical retail environments. Journal of Service Management, 28(5), 884–913. https://doi.org/10.1108/JOSM-06-2016-0142*

Annex C. Comparison of Hofstede's Cultural Dimensions: Portugal vs. Denmark[12]



Source. *Adapted from The Culture Factor – Country Comparison Tool (https://www.theculturefactor.com/country-comparison-tool?countries=denmark%2Cportugal).*

[12] The figure illustrates the six Hofstede cultural dimensions for Portugal and Denmark, highlighting national differences in Power Distance, Individualism, Motivation towards Achievement and Success (Masculinity), Uncertainty Avoidance, Long-Term Orientation, and Indulgence.

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8. Appendices

The following table presents the coding structure applied in SPSS for demographic variables and survey constructs. This scheme ensures data consistency and facilitates quantitative analysis.

Appendix 1 Coding Scheme for SPSS Data Analysis

Variable Code	Construct / Example Items	Scale
Q1	Nationality	12 = Portuguese; 13 = Danish
Q2	Age group	2 = 18–22; 3 = 23–27; 4 = 28–35; 5 = 36–44
Q3_1–Q3_4	*Perceived Ease of Use* (e.g., "Easy to use", "Clear and understandable")	7-point Likert[1]
Q4_1–Q4_4	*Perceived Usefulness* (e.g., "Improves productivity", "Enhances effectiveness")	7-point Likert[1]
Q5_1–Q5_7	*Attitude Toward Use* (e.g., "Bad–Good", "Poor–Excellent")	7-point Semantic Differential[2]
Q6_1–Q6_3	*Intention to Use* (e.g., "I would use these technologies")	7-point Likert[1]
Q7_1–Q7_7	*Cognitive Experience* (e.g., "Makes me think", "Awakens curiosity")	7-point Likert[1]
Q8_1–Q8_10	*Emotional Experience* (e.g., "Makes me feel happy", "Optimistic")	7-point Likert[1]
Q9_1–Q9_5	*Social Experience – Customers* (e.g., "Share opinions with customers")	7-point Likert[1]
Q10_1–Q10_5	*Social Experience – Employees* (e.g., "Interact with employees")	7-point Likert[1]
Q11_1–Q11_5	*Physical Experience* (e.g., "Relaxed", "Comfortable")	7-point Likert[1]
Q12_1–Q12_6	*Familiarity with In-Store Technologies* (Digital signage, AR fitting rooms, self-checkout, etc.)	1 = I have used it; 2 = I have seen it but never used it; 3 = I have never seen it
Q13–Q15	Demographics (Gender, Education, Income)	Various categories[3]

[1] *1 = Strongly Disagree; 2 = Disagree; 3 = Somewhat Disagree; 4 = Neither Agree nor Disagree; 5 = Somewhat Agree; 6 = Agree; 7 = Strongly Agree*

[2] *1 = Strongly aligns with left adjective; 2 = Moderately aligns with left adjective; 3 = Slightly aligns with left adjective;*
4 = Neutral; 5 = Slightly aligns with right adjective; 6 = Moderately aligns with right adjective; 7 = Strongly aligns with right adjective

[3] *Gender (Q13): 1 = Female; 2 = Male; 3 = Other / Prefer not to say.*
Education level (Q14): 1 = Less than high school; 2 = High school diploma or equivalent; 3 = Bachelor's degree; 4 = Master's degree; 5 = Doctorate (PhD); 6 = Other (text).
Monthly net income (Q15): 1 = Less than €500; 2 = €500–€999; 3 = €1,000–€1,499; 4 = €1,500–€1,999; 5 = €2,000–€2,499; 6 = €2,500 or more; 7 = Prefer not to say.

The following Appendix presents the overall structure of the survey, providing a clear overview of the survey used in the study, ensuring transparency regarding the constructs and items included for data collection. Any doubts regarding the scales of each item, please refer to Table 3.1. Constructs and Measurement Details of the Technology Acceptance Model (TAM) and 3.2. Customer Experience (CX) Dimensions and Measurement Details.

Appendix 2 Survey Structure

Introduction & Consent (Informed Consent Statement)

Welcome, and thank you for taking the time to participate in this survey.

This study is part of a Master's thesis in *International Management* at ISCTE Business School (Portugal).

It examines how in-store technologies, such as Digital Signage, Virtual Mirrors and Smart Fitting Rooms with Augmented Reality (AR) and Artificial Intelligence (AI), QR Code/Barcode Scanning, Self-Checkout, Click and Collect, and Self-Service Kiosks, impact customer experience in the fashion retail sector.

The research specifically focuses on individuals aged 18 to 44 (Gen Z and Millennials) with Portuguese or Danish nationality.

Your participation is entirely voluntary and anonymous. No personally identifiable information is collected, and all responses will be kept strictly confidential and used solely for academic purposes.

The survey will take approximately 7–10 minutes to complete.

By clicking on the arrow "→", you confirm that you have read this information and agree to participate in the study.

Clarification

In this study, the term "in-store technologies" refers to digital solutions implemented inside physical fashion retail stores to enhance or support the shopping experience.

Examples include (but are not limited to):

Digital Signage - Screens inside the store that show videos, promotions, or product images to create a more engaging shopping environment.

Virtual Mirrors and Smart Fitting Rooms with Augmented Reality (AR) and Artificial Intelligence (AI) - Interactive mirrors or screens that let you see how products look on you without physically trying them on. These tools may also offer personalised suggestions based on your preferences or behaviour.

QR Code / Barcode Scanning - Using your phone to scan a product's QR code or barcode in-store to see more information, check availability, or explore similar items.

Self-Checkout - Machines that let you scan and pay for your items on your own, without needing to go to the cashier.

Click and Collect - A service that lets you collect in the store something you've already bought online, usually from a pick-up counter or machine/kiosk.

Self-Service Kiosks - Touchscreens available in-store that let you browse products, check stock, get information, or place an order.

When answering the following questions/statements, please reflect on your overall experience with in-store technologies as a whole, rather than evaluating each type individually.

The goal is to understand your overall perceptions and feelings about these technologies in fashion retail.

Screening Questions

Q1. Nationality: Portuguese / Danish / Other → (End if "Other").

Q2. Age Group: Under 18 / 18–22 / 23–27 / 28–35 / 36–44 / 45+ → (End if <18 or >44).

Technology Acceptance Model (TAM)

When answering the following statements, please reflect on your overall experience with in-store technologies as a whole, rather than evaluating each type individually.

The goal is to understand your general perceptions and feelings about the use of these technologies in fashion retail settings.

Q3. Please indicate your level of agreement with each of the following statements regarding how easy it is to use in-store technologies.

1. These technologies are clear and understandable.
2. These technologies would not require a lot of mental effort.
3. These technologies would be easy to use.
4. These technologies would allow me to shop the way I want to shop.

Q4. Please indicate your level of agreement with each of the following statements regarding how useful you find in-store technologies in fashion retail stores.

1. These technologies would improve my shopping productivity.
2. These technologies would improve my shopping ability.
3. These technologies would be useful in buying what I want.
4. These technologies would enhance my effectiveness in shopping.

Q5. Please indicate your overall attitude toward using in-store technologies in fashion retail stores by rating each pair of opposite words below.

For each row, please select the option that best represents your opinion on a scale from 1 to 7, where 1 means you completely agree with the word on the left, and 7 means you completely agree with the word on the right.

Example: If you find in-store technologies pleasant to use, you would select 7 on the "Unpleasant–Pleasant" row. If you're neutral, you would select 4.

Bad -- Good

Inferior -- Superior

Unpleasant -- Pleasant

Boring -- Interesting

Poor -- Excellent

Not worthwhile -- Worthwhile

Not useful -- Useful

Q6. Please indicate your level of agreement with the following statements regarding your intention to use in-store technologies in fashion retail stores.

1. I would use these technologies for apparel shopping.
2. I would visit a store that provides these technologies for its apparel shoppers.
3. I would purchase apparel from a store that provides its shoppers with these technologies.

Customer Experience (CX)

The following statements refer to your overall experience with in-store technologies as a whole, rather than evaluating each type individually, when interacting with in-store technologies in fashion retail stores, such as Digital Signage, Virtual Mirrors and Smart Fitting Rooms with AR and AI, QR Codes/Barcode Scanning, Self-checkout, Click and Collect, and Self-Service Kiosks.

The goal is to understand your general perceptions and feelings about the use of these technologies in fashion retail settings."

Q7. These statements refer to your cognitive experience when interacting with in-store technologies in fashion retail stores

1. These technologies make me think and reflect.
2. These technologies teach me interesting things.
3. These technologies awaken my curiosity.
4. These technologies awaken my creativity.
5. These technologies bring interesting ideas to mind.
6. These technologies inspire me.
7. These technologies interest me.

Q8. These statements refer to your emotional experience when interacting with in-store technologies in fashion retail stores.

1. These technologies make me feel in a good mood.
2. These technologies make me feel contented.
3. These technologies make me feel happy.
4. These technologies make me feel optimistic.
5. These technologies make me feel hopeful.

6. These technologies make me feel enthusiastic.

7. These technologies make me feel thrilled.

8. These technologies make me feel surprised.

9. These technologies make me feel amazed.

10. These technologies make me feel astonished.

Please answer the following statements based on your experiences when interacting with other customers and store employees in fashion stores that use in-store technologies, such as Digital Signage, Virtual Mirrors and Smart Fitting Rooms with AR and AI, QR Codes/Barcode Scanning, Self-checkout, Click and Collect, and Self-Service Kiosks.

If you've never had such experiences, feel free to select 'Neither Agree nor Disagree'."

Q9. The statements refer to your social experience with other customers when shopping in fashion stores that use these technologies.

1. I advise customers who ask my opinion on products/services in fashion stores that use in-store technologies.

2. I ask the opinions of customers who shop at fashion stores that use in-store technologies.

3. I share opinions with customers of stores that use in-store technologies.

4. I interact with customers of fashion stores that use in-store technologies.

5. I consider myself a member of the community of customers who shop at stores that use in-store technologies.

Q10. The statements refer to your social experience with store employees when shopping in fashion stores that use in-store technologies.

Please indicate your level of agreement.

1. I give my opinion to employees of stores that use in-store technologies.

2. I receive advice from employees of stores that use in-store technologies.

3. I ask the opinions of employees of stores that use in-store technologies.

4. I share my opinions with employees of stores that use in-store technologies.

5. I interact with employees of stores that use in-store technologies.

Q11. In-store technologies in fashion stores make me feel...

1. Energised

2. Full of vitality

3. Comfortable

4. Relaxed

5. A general sense of well-being

In-Store Technologies (Familiarity)

The following question aims to understand your level of familiarity with different in-store technologies used in fashion retail stores.

This will help to better interpret your previous answers.

Please answer as accurately as possible, based on your own experience.

To remind you, here's a description of each technology:

Digital Signage - Screens inside the store that show videos, promotions, or product images to create a more engaging shopping environment.

Virtual Mirrors and Smart Fitting Rooms with Augmented Reality (AR) & Artificial Intelligence (AI) - Interactive mirrors or screens that let you see how products look on you without physically trying them on. These tools may also offer personalised suggestions based on your preferences or behaviour.

QR Code / Barcode Scanning - Using your phone to scan a product's QR code or barcode in-store to see more information, check availability, or explore similar items.

Self-Checkout - Machines that let you scan and pay for your items on your own, without needing to go to the cashier.

Click and Collect - A service that lets you collect in the store something you've already bought online, usually from a pick-up counter or machine/kiosk.

Self-Service Kiosks - Touchscreens available in-store that let you browse products, check stock, get information, or place an order.

Q12. What is your level of familiarity with the following in-store technologies in fashion retail stores?

• Digital Signage

• Virtual Mirrors and Smart Fitting Rooms with Augmented Reality (AR) and Artificial Intelligence (AI)

• QR Code / Barcode Scanning

• Self-Checkout

• Click and Collect

• Self-Service Kiosks

Demographics

This final section contains a few background questions to help analyse the data by demographic segments.

Your responses are fully anonymous and will be used for academic purposes only.

Q13. Gender: Female / Male / Other or Prefer not to say.

Q14. Education: Less than high school / High school / Bachelor's / Master's / Doctorate / Other.

Q15. Monthly Net Income (€): < 500 / 500–999 / 1,000–1,499 / 1,500–1,999 / 2,000–2,499 / ≥ 2,500 / Prefer not to say.

End of Survey

Thank you for completing this survey.

Your input is extremely valuable and will contribute to the successful completion of a Master's thesis in International Management at ISCTE Business School.

If the survey felt unusually short, it's possible that you did not meet the criteria for participation — in that case, the questionnaire ended automatically after the initial screening.

If you have any questions or would like to receive a summary of the study's results, feel free to contact me at Daniela_Paiva_Borges@iscte-iul.pt.

Thank you again for your time and support.