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Mirror, Mirror in the Store

Consumer Privacy Concerns and Adoption of Smart Fitting Room

Margarida Pereira Mendrico Garcia

Master Thesis

presented as partial requirement for obtaining a Master's Degree in Information Management

NOVA Information Management School

Instituto Superior de Estatística e Gestão de Informação

Universidade Nova de Lisboa

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Consumer Privacy Concerns and Adoption of Smart Fitting Room

by

Margarida Pereira Mendrico Garcia

Master Thesis presented as partial requirement for obtaining the Master's degree in Information Management, with a specialization in Business Intelligence

Supervised by

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July, 2025

STATEMENT OF INTEGRITY

I hereby declare having conducted this academic work with integrity. I confirm that I have not used plagiarism, any form of undue use of information or falsification of results along the process leading to its elaboration. I further declare that I have fully acknowledged the Rules of Conduct and Code of Honor from the NOVA Information Management School.

Lisbon, 15 July 2025

Margarida Pereira Mendrico Garcia

DEDICATION

There are far too many people who have inspired and supported me throughout the writing and development of this thesis. However, I would like to thank all my friends, with a special mention to Carolina, whose patience in listening to my frustrations was essential throughout this journey, and to Bernardo, for the countless late nights spent studying together and working on our theses. His knowledge and insight will remain a constant source of inspiration.

I dedicate this thesis above all to those who support me unconditionally, my parent, Helena and José, for their support, not only financial, but above all emotional. They never demanded more than I could give, but always believed in my future (and for all the days they spared me from doing the dishes). Whoever I become, I owe it entirely to them.

To my buddy, and in her spare time, grandmother, Margarida, to whom I owe the name and the stubbornness. Finally, I must not forget to mention my cousins, Sandra and Tiago, and the most recent addition, Gonçalo, without their presence, I would not have moved forward with such confidence. I am grateful for the books, the knowledge, and the understanding.

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Uncertain if I will have another chance to express my appreciation, I am using this chapter to recognize his contributions as both a researcher and an educator. It has truly been an extraordinary journey.

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ABSTRACT

This research evaluates the influence of consumer privacy concerns on consumers' intention to use the Smart Fitting Room technology within the physical retail fashion environment. As the fashion industry progressively adopts digital innovations, it becomes imperative to understand barriers to technology acceptance, with privacy concerns being identified as a major factor. This study incorporates additional constructs to the Technology Acceptance Model, related to privacy, trust, and hedonic motivations, providing an analysis of the factors influencing the adoption or non-adoption of the Smart Fitting Room. The research was conducted using a quantitative approach, collecting data via survey with a sample of 217. The collected data was analyzed using SPSS, allowing to infer the relationships between variables. The findings indicate that privacy concerns have a negative effect on consumers' intention to use Smart Fitting Room technologies and that perceived ease of use serves as a moderating variable. Certain hypotheses, however, were not supported by the data, suggesting areas for further investigation. The results of this study emphasized the importance of transparent privacy policies and user-centered design principles. These insights underscore the necessity for retailers to foster consumer trust and confidence by adopting transparent privacy practices and designing technologies that prioritize user comfort and security.

KEYWORDS

Smart Fitting Room; Privacy Concerns; Consumer Behavior; Technology Adoption; Physical Retail; Intention to Use

Sustainable Development Goals (SDG):

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LIST OF ABBREVIATIONS AND ACRONYMS

AI	Artificial Intelligence
AR	Augmented Reality
PEJ	Perceived Enjoyment
PEOU	Perceived Ease of Use
PU	Perceived Usefulness
RFID	Radio-frequency Identification
SFR	Smart Fitting Room
SOR	Stimulus-organism-response
TAM	Technology Acceptance Model
TRA	Theory of Reasoned Action

1. INTRODUCTION

In the Fashion sector, falling behind in digital transformation or neglecting to invest in technology development can reduce cash flow by 23% (McKinsey & Company, n.d.). End-to-end value chain management, in-store technology, and personalization are three areas where digital innovation may have significant improvements (McKinsey & Company, n.d.), so it is crucial to carry on investigating those domains and their innovations. One of them, mixing in-store technology with personalization, is the Smart Fitting Room (Guha et al., 2021). The integration of this technology serves to improve customer satisfaction (Kronheim et al., 2024), but despite the benefits, these technological developments also bring up serious issues, especially in light of the expanding privacy risks connected to technology use (Gonzales et al., 2023).

There hasn't been much research conducted on sociodemographic traits, on consumers' opinions of technology, specifically Smart Fitting Rooms, and how they could affect their privacy issues (Kronheim et al., 2024). Understanding how Smart Fitting Rooms can be effectively integrated into retail environments is essential to improve consumer trust as well as encourage broader adoption (Ameen et al., 2021).

This thesis will focus on answering the question, "What impact do privacy concerns have on the consumers' intention to use Technologies, particularly Smart Fitting Rooms, in the Physical Fashion Retail context?" It will explore how customers respond when interacting with Smart Fitting Rooms, considering the issues associated with these technologies in the fashion industry. This research tries to understand consumer attitudes toward privacy concerns and interpret the relationship between consumer tech-savviness and the reasons for adopting Smart Fitting Rooms.

Through a quantitative analysis of customer experience, the study attempts to evaluate consumer concerns in technology, specifically Smart Fitting Rooms, by using a survey targeting customers from various sociodemographic categories.

By addressing these issues, businesses may better control expectations and decrease negative opinions about technology, especially those covered by this study. This project can give a more knowledgeable and favorable view of the potential contribution of such technical developments to modern society. Additionally, this strategy will offer a more profound understanding of how customers feel and think about this technology in an in-store scenario.

After this brief introduction, the dissertation begins with a Literature Review addressing key topics, including the evolution and history of the fashion industry, with an emphasis on physical retail and technological innovations. It then looks into the customer experience and privacy concerns associated with technology use. Next, the concept of trust is explained, and then the effects of perceived enjoyment, personalization, and ease of use are subject to analysis. This is followed by the conceptual model, describing the variables, moderators, and

mediators that constitute the study's foundations. The Methodology chapter outlines the research strategy followed along with the Results and their interpretation. Finally, the conclusion summarizes the key findings, and the discussion of the limitations offers suggestions for future research.

2. LITERATURE REVIEW

This section will first define the concept of physical retailing, followed by an exploration of its historical development, to provide the background on the fashion retail industry. The identification of technological advancements is followed by an emphasis on Smart Fitting Rooms. This includes a description and appraisal of the Smart Fitting Room concept, as well as an analysis of the technologies that underpin its operation.

Then, a review of consumer experience is conducted, including subjects like privacy concerns and trust, a more thorough explanation of the significance of these issues, and their manifestations. The literature review concludes with personalization, perceived enjoyment, ease of use, and a review of the TAM. The conceptual model, whose schema illustrates the connections between the constructs and the hypothesis produced, is presented.

2.1. FASHION INDUSTRY – PHYSICAL RETAILING

Retailing is the exchange of products or services with consumers for their use. It dates to the 1800s, initially selling a wide variety of goods, (McCormick et al., 2014), however, many of these merchants started to specialize as a result of the difficulties faced, turning their establishments into targeted retailers (McCormick et al., 2014). Over time, retailers have controlled supply development despite the evolution, but competition increases and affects not only individuals, but also their partnerships and the entire chain (Bulovic & Covic, 2019).

Nowadays, digital advancements are driving a deep transformation in the retail industry (Bulovic & Covic, 2019). To remain competitive, these industries integrate new technologies, making it possible to diversify during the evolution of retailing (Kronheim et al., 2024). The clear distinction between physical and online is blurring as businesses start using new technologies, expanding their fulfillment options, and recognizing patterns (McCormick et al., 2014). The business approach has evolved, prioritizing the trade over the previous focus on consumers or manufacturers (McCormick et al., 2014).

These developments have some drawbacks for the industry, since consumer power has increased along with their expectations and level of knowledge. Customers of today want higher quality, personalization (Grewal & Roggeveen, 2020), quicker deliveries, broader pre- and post-purchase services, frequent updates, and individualized attention (McCormick et al., 2014).

However, physical retailers continue to provide certain benefits. To compete with online shopping, the store must be positioned as the destination and improve its physical experience elements (Blázquez, 2014). According to studies, layout, color, and music are sensory factors that help develop a “store-as-a-brand” approach. Retailers may create unique shop settings that affect customer behavior, shape perception, and prompt responses (McCormick et al., 2014), may also bring up emotions (Poncin & Ben Mimoun, 2014).

Creating hedonistic and engaging surroundings increases buying intentions in the fashion retail industry because apparel is a form of experiential consumption. These immersive environments improve customer interactions, promote extended in-store visits, and reinforce brand identity. Digital technologies have evolved from mere aesthetic features to influential tools that shape consumer expectations and behaviors (Obermeier & Auinger, 2019). As mentioned by Caboni & Hagberg, (2019), "(…) a monitor and video could be sufficient to engage the shopping experience in a more digitalized retail store." By consolidating ambient and sensory design elements, these technologies improve the shopping experience (Caboni & Hagberg, 2019). M-commerce, visualization tools, and omnichannel strategies can be the division of technology integration, showing a complete strategy to meet the demands of the digital era while preserving the characteristics of physical retail, as shown in the schema presented below (McCormick et al., 2014).

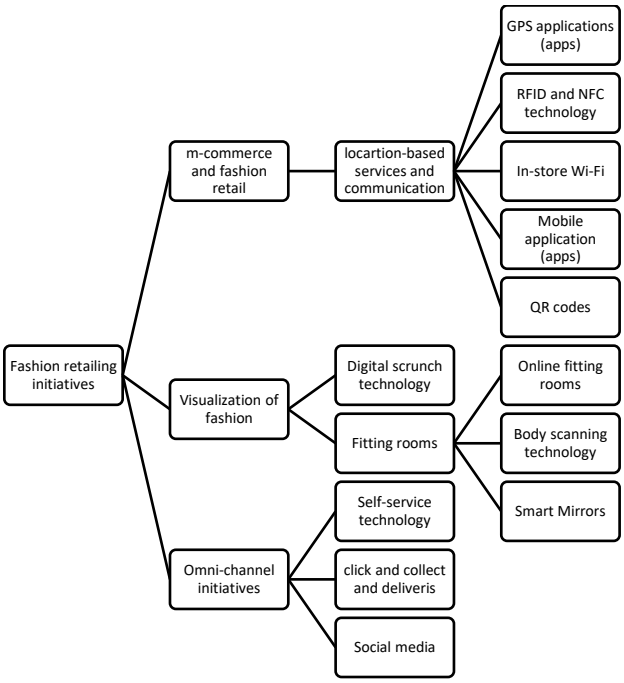

Figure 2-1 - Illustration of possible fashion technology subdivision

To increase their intelligence and provide better consumer experiences, businesses are using AI-powered goods and combining them with technology (Canhoto et al., 2024). Smart Fitting Rooms and others offer interactive experiences, frequently combining social media, digital scanning, and physical retail, providing customization (Obermeier & Auinger, 2019).

2.2. TECHNOLOGY IN PHYSICAL RETAIL

The physical fashion retail industry, much like other markets, is recognizing the necessity of fostering new forms of interaction between brand and consumer, (Wang et al., 2023), that is why in 2019 retailers have increased the value spent on in-store technology by 60% (Souka et al., 2024).

Technology has been offering applications in the field in study, including fashion assistance and recommendations, fraudulent logo or clothing detection, sentiment analysis (Goti et al., 2023), more specifically, robot assistance, biometric payment systems (Souka et al., 2024), and clothes fitting (Goti et al., 2023). The last one will be explored in greater depth in the following subsection.

2.2.1. SMART FITTING ROOMS

Customers are now shopping both online and in physical stores, with some items being returned – an estimated 70% due to issues with fit or style (Karadayi-Usta, 2024). Achieving precise fitting and style assessment remains a distinctive advantage of physical stores. The Smart Fitting Room is an innovation that uses devices with augmented reality and artificial intelligence to enable customers to try on products on the screen without the need to remove clothing (Kronheim et al., 2024). One example, used nowadays, is Burberry, which, with RFID (Radio-frequency identification) tags, activates the fitting room mirrors when customers enter (Kotler et al., 2017).

Terms such as Magic Mirrors, AR Fitting Room, Smart Mirrors, Interactive Fitting Room, Interactive Mirror, Digital Mirror and Smart Fitting Room are often overlapping in meaning, verified during this research. As Battistoni et al., (2022), wrote, the Mirror can be taken as part of the Fitting Room, so it will be used the "Smart Fitting Room" as an umbrella term for all the concepts. The technology is a combination of hardware, such as projector and interactive displays, and software that ensures simulation. A possible design on the Smart Fitting Room process, an end-to-end platform is going to be shown in the following schema, that makes possible to understand the complexity of the technology, that uses AR and AI (Fatima et al., 2024).

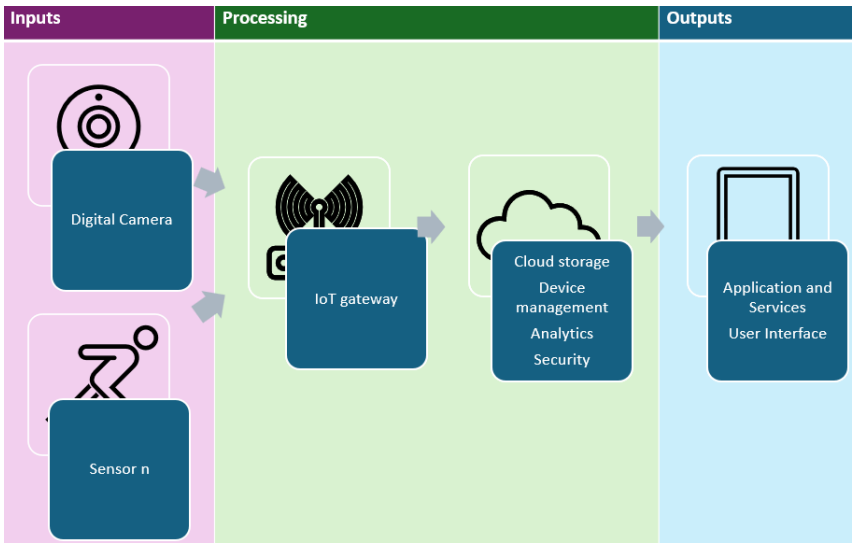

Figure 2-2 - Smart Fitting Room processing Schema

The main drawbacks on using the Smart Fitting Room technology relies on challenges with calibration and motion limitations (Saakes et al., 2016), which consequently contribute to

hesitations among retailers (Zhang & Wang, 2023). Despite this, there are numerous advantages, including reducing decision-making time (Caboni & Hagberg, 2019) and enhancing multi-sensory engagement. They create immersive experience with great impact on consumers by stimulating visual, auditory, tactile, and olfactory senses (Wang et al., 2023). With this is possible to increase the personalization level by enabling the customer to design and customize directly the product (Saakes et al., 2016).

With the integration of AI-driven sentiment analysis, the possibilities got even wider, offering more tailored recommendations based on real-time emotional feedback (Kronheim et al., 2024; Sekhavat, 2017), but the interaction does not end there, with availability to take pictures and videos and share for feedback directly, transforms the shopping into a shared experience (Caboni & Hagberg, 2019; Grewal et al., 2023).

It is possible for the customer to obtain information about their body shape in relation to the clothes they want to buy (Caboni & Hagberg, 2019), be in pair with new fashion trends (Liu et al., 2016) and bring a new selection (Grewal et al., 2023). Fashion retailers must ensure that this technology is easy to use as it will affect the overall customer encounter (Kronheim et al., 2024). With all the Smart Fitting Room characteristics, it seems possible to reduce frustration and even support frictionless shopping (Grewal et al., 2023).

2.2.1.1. Artificial Intelligence and Augmented Reality

In this subchapter, two key technologies used in Smart Fitting Rooms are described that should have particular focus: Artificial Intelligence and Augmented Reality.

Artificial Intelligence (AI) is one of the most complex technologies, englobing advancement in big data, machine learning, and intelligent systems (Shankar, 2018), this makes it able to process and analyze large amounts of data with accuracy (Harika et al., 2022). Unlike human intelligence, based on experience and emotion, AI's evolution is based on data-driven processing and adaptive algorithms (Ameen et al., 2021), this divergence allows AI to offer a unique form of intelligence that has been transforming industries (Harari, 2024), with various application, such as voice recognition, driverless vehicles, or even, predictive analytics have entered mainstream use, in all sectors including fashion retail (Costa & Aparicio, 2023). The advances keep growing to automate processes, optimize costs and get deeper customer-machine relationships (Gera & Kumar, 2023).

Augmented Reality complements Artificial Intelligence merging digital content with the physical world. It overlays into the real-world environment the digital elements, as 3D models, text or images, creating interactive experiences (Yaoyuneyong et al., 2014). AR became essential in different areas making users engage with digital content in a more intuitive and contextualized manner (Battistoni et al., 2022). The Smart Fitting Room represents a groundbreaking innovation, merging AI and AR technologies to reimagine the fitting room experience (Battistoni et al., 2022).

2.3. CONSUMER EXPERIENCE

The adoption of new technologies, like AI and AR, has reshaped interaction machine-customer (Grewal & Roggeveen, 2020). The customer journey is structured in three phases: pre-purchase, purchase, and post-purchase (Schweidel et al., 2022), each one involves a blend of cognitive, emotional and social interactions (Obermeier & Auinger, 2019) and, nowadays, it can be done through multiple channels at the same time, including physical stores, e-commerce, and social media (Lemon & Verhoef, 2016). The experience that each consumer have is their spontaneous response to the stimulus of the journey (Moore et al., 2022).

Customers have the necessity to engage in differentiated experiences, with a constant update (Moore et al., 2022), this is explained by the responses that consumers want to engage, not only to buy the product, and are disposed to pay more for that (Alexander & Blazquez Cano, 2020).

Satisfaction with the decision-making process, satisfaction with transaction's outcome, and customer engagement are key factors to determine a positive experience using technology. The SOR paradigm (Stimulus-organism-response) shows that the environment can be explained with three emotional states, feeling of Pleasure or not, feeling aroused or not and feeling dominant, that direct implicates the shopping experience and the approach to the technology (Poncin & Ben Mimoun, 2014).

However, these interactions also present challenges, such as privacy concerns and technophobia (Grewal & Roggeveen, 2020).

2.3.1. PRIVACY ISSUES

Privacy is a fundamental right, with humans often wanting to keep their information private, technological advances are now challenging this right by reducing control and creating enhanced privacy risks (Evans et al., 2023), but technologies rely heavily on customers' personal information (Hu & Min, 2023). Privacy issues can be defined as worries about the capacity to control the collection of personal information (Kurniawan et al., 2023) as well as its usage in the future (Okazaki et al., 2009). Some threatened feelings are due to identity theft, tracking, phishing, discrimination, and manipulation (Hu & Min, 2023).

They can have behavior effect, called the watching-eye effect, that evokes to the customer a sense of being seen, people feel uncomfortable, of perceived privacy invasion, when the customer view an AI device with "eyes" as another social entity that occupies a shared space, they may feel watched and thus experience privacy concerns and uneasiness (Hu & Min, 2023).

Such privacy concerns can be barriers to customers' willingness to use (Souka et al., 2024). It is necessary to reduce the impact that this may have on the shopping experience, like an open approach to the topic of privacy, but even this can contribute to the undesired effect (Souka et al., 2024). Another position to be taken into consideration would be a fair equilibrium.

Risks may increase customers' privacy concerns, mitigating their trust (Hu & Min, 2023) and benefit from innovative in-store technologies (Souka et al., 2024), this effect is proportional with the feeling of sensitive information, meaning that the more sensitive is the perspective of the information provided the greater the feel of lack of control over what is being shared (Canhoto et al., 2024).

2.3.2. TRUST

Reliability and belief on integrity are two main characteristics of trust feeling, relevant for every industry (Chen et al., 2022), and has been used as a mediator in consumers toward using and the privacy concerns (Evans et al., 2023). Trust has its relevance underlined because of its effect on consumers commitment to continued purchases and loyalty to the brand (Eastlick et al., 2006), and even to the proper technology acceptance (Mustofa et al., 2025).

This term is directed to positive emotions (Canhoto et al., 2024), and this relationship has to come from retailers first, to have a proper reaction (Chen et al., 2022).

2.3.3. PERCEIVED ENJOYMENT

PEJ or Perceived Enjoyment is a variable very often identified to be influential on the use of technology (Lee et al., 2019), increasing interactions, in other words, measures the perception of fun. Enjoyment affects how interested the consumer is, how open they are to captivate and how attracted they feel about the technology itself (Balog & Pribeanu, 2010).

Studies shows that the perspective of enjoyment shapes perception of ease of use and the attitude towards adoption, it is important to stand that there is a different between actual use and the idea of using (Hornbæk & Hertzum, 2017). Following Chang & Chen, (2021), perceived enjoyment "can be seen as a hedonic motivation for consumers to be immersed in an enjoyable environment".

2.3.4. PERCEIVED EASE OF USE

The Perceived Ease of Use can be described as one of the positive aspects affecting intention to use technology, affecting consumers trust and intention to purchase (Wistedt, 2024). Studies confirmed that the Perceived Ease of Use on a technology mediated the effect on the consumer attitude in an e-commerce business context (Ashraf et al., 2016), so it could be relevant to analyze this under a physical retail environment.

2.3.5. PERSONALIZATION

Personalization tailors a service or a product, accommodating the individual need. Generally, personalization cannot be achieved without some loss of privacy of consumers (Sekhavat, 2017). The challenge of constantly keeping up with the demands that customers have are now getting even more specified, and using AI and Machine Learning technologies, retailers are able to get and analyze individual interests and actions, to provide a more personalized experience (Obermeier & Auinger, 2019)

Several studies on customer experience have mentioned personalization's impact on customer experience. A survey of US shoppers found that 70% of the respondents believed that a personalized experience would encourage them to make more purchases in the future (Kronheim et al., 2024).

2.4. TECHNOLOGY ACCEPTANCE MODEL

The TAM (Technology Acceptance Model), developed by Davis (1989), is the most used model of acceptance and usage of technology (Aljarrah et al., 2016). Originated from the TRA (Theory of Reasoned Action) (Lee et al., 2019) this model follows a set of constructs, namely, behavioral intention, attitude, perceived usefulness, and perceived ease of use, which will be assessed within the scope of this dissertation's topic: Smart Fitting Rooms (Masrom, 2007).

TAM explains the direct influence on individuals' attitudes toward using the technology with perceived usefulness and perceived ease of use (Almeida et al., 2025), and has been used to test innumerous studies based on a common principle, as possible to verify in Figure 2-3, PU and PEOU are influenced by External Variables, like previous experiences, that shape the attitude towards using and consequently the intention.

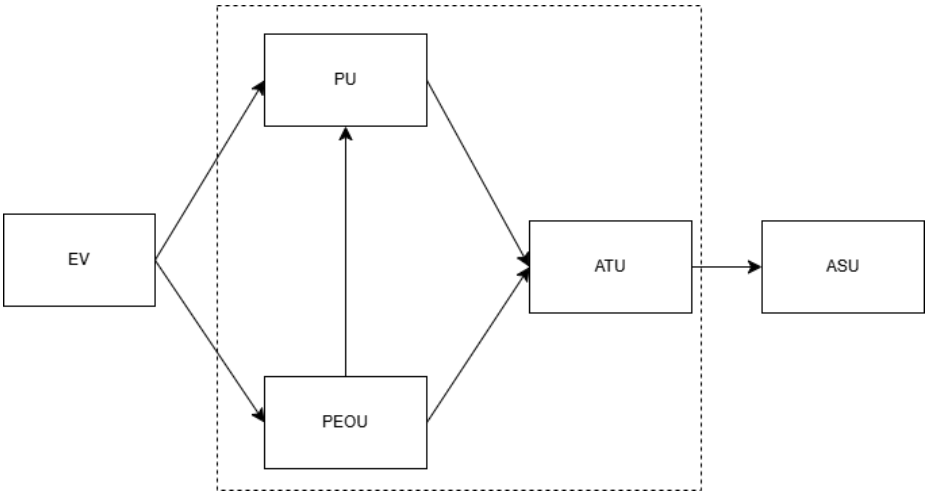

Figure 2-3 - Technology Acceptance Model - developed by Davis, (1989)

As mentioned in the previous chapters, the study analyses perceived enjoyment and perceived ease of use, incorporating an adaptation of the original model, in the Conceptual Model and Hypotheses Development that follows, consumer privacy concerns are introduced as the external variable, leading to a different approach to the constructs, concluding with their influence on the attitude toward using.

2.5. CONCEPTUAL MODEL AND HYPOTHESES DEVELOPMENT

Developing hypotheses is relevant to understand the main objective that this thesis proposes, to clarify the relation between privacy concerns and the willingness to use Smart Fitting Room technology. This step is crucial for guiding the research direction and to establish the frame

for the conceptual model. The base for this construction is defined as the Consumer Privacy Concerns to be the Independent Variable, the Attitude Toward Using the technology of the Smart Fitting Room, the Dependent Variable, with Personalization and Perceived Ease of Use as Moderators, and finally, as Mediators, the Perceived Enjoyment and Trust.
Literature makes it clear that there is a negative relationship between private information and the perceived risk with the intention toward using technologies in an in-store context (Souka et al., 2024).

Hypothesis 1: Consumer Privacy Concerns will negatively influence the Intention to use the Smart Fitting Room technology.

Persuing the analysis, after the formulation of the hypothesis relating the dependent variable and the independent variable, it would be interesting to mediate this relationship, knowing that enjoyment and the perception of it can be a decisive factor on the consumer decision on using or not the technology that is presented to them (Lee et al., 2019).

Hypothesis 2: Perceived Enjoyment reduces with the increase of Consumer Privacy Concerns that is unfavorable to the attitude towards using the Smart Fitting Room.

As Chen et al., (2022) found, trust mediated the relationship between the consumer and the technology, concluding that a high privacy concern triggers the reaction and perception of trust that leads to a reduction on the intention to purchase, this can act on web, but is possible to be verified under the physical retail environment.

Hypothesis 3: Consumer Privacy Concerns leads to decrease on the will to use the Smart Fitting Room, with a relationship in trust reduction.

TAM or Technology Acceptance Model is based on behaviors that justify the attitude towards an intention to use, leading or not to the actual use of the system, and one of the constructs evaluated is precisely the Perceived Ease of Use, that depending on the motivation can be a moderator between the concern and the will to use (Hornbæk & Hertzum, 2017).

Hypothesis 4: The negative effect that privacy concerns have on the attitude towards using the Smart Fitting Room is weaker when perceived ease of use is higher.

The interactivity of Smart Fitting Rooms extends beyond personalization. Displays can compare multiple garments, offer trend insights, and suggest complementary items, providing additional value to the customer (Zhang et al., 2008; Liu et al., 2016).

Hypothesis 5: Personalization weakened the negative impact consumer privacy issues have on the attitude toward using the technology.

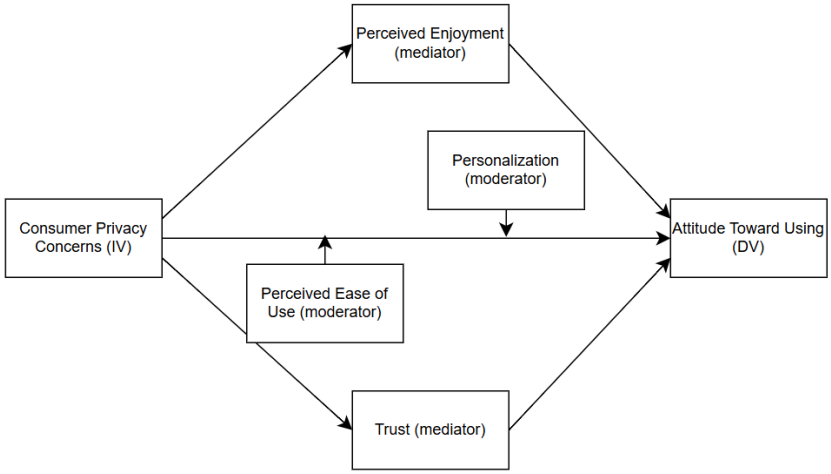

Figure 2-4 - Conceptual Model Schema

3. METHODOLOGY

3.1. METHODOLOGICAL POSITION

This investigation aims to assess how Smart Fitting Rooms are perceived in the physical retail environments, focusing especially on in-store shoppers, not considering e-atmosphere. The study employs a quantitative research framework to collect data, exploring the topic and potentially contributing to answering the question: "What impact does consumer privacy concerns, particularly on Smart Fitting Rooms, have on consumers' attitude towards using it, in physical fashion retail?". The objective was to have a very broad approach, ensuring a sociodemographically diversified sample. Knowing this is a descriptive quantitative research, the design chosen was the survey, that has the benefit of allowing a more reliable generalization on the broader population, being more accurate on its reflection (Ghanad, 2023). Despite the drawbacks, such as possible decrease in number of samples, that can lead to a decrease of the representation power of the answers coming from the survey, the study was pursued with all this under consideration (Gürbüz, n.d.).

With the objective in mind of having the most answers to the survey, the dissemination was taken in multiple channels, social media, email, messages and even word-of-mouth using QR codes, knowing this already delimitates the population that has smart phones or access to the internet. Besides this there was ensured that the population had the trustability that none of their data was being used besides academic purposes.

3.2. MEASUREMENT

The methodology to measure that was chosen was the Likert scale, originally developed in 1932, having many variations. For this project, it was found more appropriate to establish the 5-Likert scale to have condensed categories for analysis with four groups if the "neutral" option is taken out of consideration (Joshi et al., 2015). Using that scale, with a rating from 1 to 5, where the first is the weakest and the fifth the strongest, the survey is constructed based on an adaptation of existing scales that are going to be shown in the following table, and then the respondents are asked for physical fashion consumption habits and their sociodemographic characteristics. Besides those, there were added attention calls in the middle of the survey that would ensure the care being taken from the inquiries.

Table 3-1 - Constructs and Measurement Scales

Construct	Measurement scale	Source
Perceived Enjoyment	I think using Smart Fitting Room for in-store shopping would be entertaining. I think using Smart Fitting Room for in-store shopping would be pleasant.	Adapted from (Schrage et al., 2022)

	I think using Smart Fitting Room for in-store shopping would be exciting. I think using Smart Fitting Room for in-store shopping would be fun.	
Ease of Use	I think Smart Fitting Rooms technology would be easy to use. In my opinion, Smart Fitting Room technology would not require any special skills to operate it. I would easily learn the features of Smart Fitting Room technology as needed. I would find it easy to get the Smart Fitting Room technology to do what I want to do.	Adapted from (Mustofa et al., 2025) and (Schrage et al., 2022)
Trust	I believe the Smart Fitting Room technology can be trusted. I think the Smart Fitting Room technology would have high integrity. I believe I would be able to trust the Smart Fitting Room technology completely. I think I would be treated fairly and honestly by the Smart Fitting Room technology. I think the Smart Fitting Room technology would keep my best interests in mind.	Adapted from (Eastlick et al., 2006) and (Evans et al., 2023)
Personalization	I feel the service provided by the Smart Fitting Room would be personalized to my preferences. I would feel sufficiently rewarded for providing information to the Smart Fitting Room. I think the interactions with the Smart Fitting Room are going to be tailored. The Smart Fitting Room will adapt to my individual needs. The value I would receive for providing information to the Smart Fitting Room would be more than fair.	Adapted from (Evans et al., 2023) and (Gong, 2025)

Privacy concerns	I would be concerned that my personal and biometric data could be accessed insecurely when using Smart Fitting Room technology. I would be hesitant to use and provide information to the Smart Fitting Room due to potential misuse by others. All things considered the use of Smart Fitting Room can cause serious privacy problems. I would be concerned that a person could find my private data on the Internet.	Adapted from (Fortes & Rita, 2016) and (Kim & Zo, 2025)
Intention to use	I intend to use the Smart Fitting Room technology in the future. I predict that I will use the Smart Fitting Room technology in the future. It is likely that I use the Smart Fitting Room technology in the future. It is possible that I use the Smart Fitting Room technology in the future. It is probable that I use the Smart Fitting Room technology in the future.	Adapted from (Schrage et al., 2022) and (Fortes & Rita, 2016)

3.3. DATA COLLECTION

The developed survey was constructed based on the previous information and was then putted together in Qualtrics, with both English and Portuguese options to select. The first question was to explain the purpose of the study and have the confirmation that the audience accepts to participate in this investigation, after this there are two questions that only people that buy in physical shops are answering positively and are able to pursue the survey.

Then there is an explanation on the Smart Fitting Room technology, providing information on what is being evaluated, passing on to the constructs mentioned previously, with a 5-likert scale questions.

Finishing with the sociodemographic survey, searching for age groups, gender, country of residence, academical habilitation and marital status.

After answering data is collected and passed to the process of cleaning the raw data, this was made with Power Query, guaranteeing the codification of data, cleaning of missing values, organization of the constructs and the transformation of the inverted scales. After checking

and validating the consistency of the data and handled the categories, was then time to extract the information on SPSS for the statistics.

It is possible to conclude that the primary data collection was supported using the online survey tool Qualtrics, and the results analysis was carried out with the help of SPSS and Power BI for a more simplified analysis, after being treated using Power Query.

4. EMPIRICAL STUDY

As previously mentioned, the survey was developed by Qualtrics, both in English and in Portuguese. This had 319 responses, during the span of approximately 20 day-active period. The final dataset had 217 valid replies. This elimination was carried out in Power Query, passed on to Power BI for the future analysis, better understandable visuals. This elimination was made, for people that did not agree to participate, who left the survey unfinished, who fell into the attention call, and the population that had never bought anything and only shopped in online stores.

4.1. SAMPLE CHARACTERIZATION

Starting with the Sociodemographic analysis, there were questions related to age group, gender, education level, employments status, marital status, and country of residence. The age group, as possible to verify in the following table, the mode resides in the 18-24 age group representing 30% of the sample population. The following were the remaining groups, by this order, 25-34 with 25,8%, tied with 15,7%, 35-44 and 45-54, then 55-64 with 10,1%, then totaling 2,8%, 65-74 (1,4%), 75-84 (0,9%), 85+ (0,5%), meaning an underrepresentation of the elders, possibly affecting the generalization of that age group ($\bar{x}$=2,6; S.D.=1,503).

Table 4-1 - Sample Population: Age Group Distribution

	Frequency	**Percentage**
18-24	65	30%
25-34	56	25,8%
35-44	34	15,7%
45-54	34	15,7%
55-64	22	10,1%
65-74	3	1,4%
75-84	2	0,9%
85+	1	0,5%
Total	217	100%

Relating to the Gender distribution there is a little overrepresentation of the female gender with 56,7%, not very significant, with the male gender with 40,6% and Non-binary/third gender and people that Preferred not to say totaling 2,8% ($\bar{x}$=1,48; S.D.=0,632). The following

graph shows perfectly the spoken overrepresentation for each age group, having the male gender surpassed the female only for the age between 45-54.

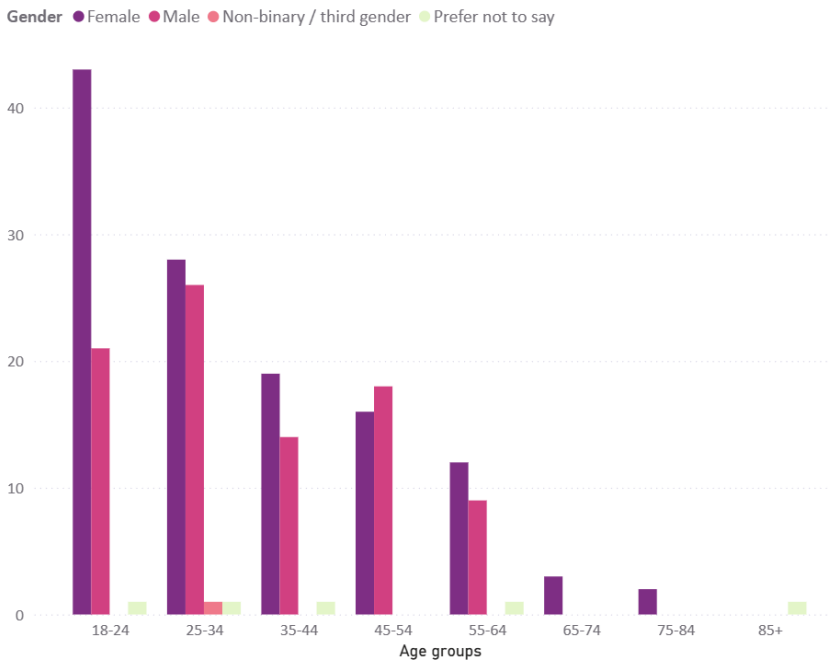

Figure 4-1 - Age group distribution analysis per Gender

About the education level, there is a predominance of people with Bachelor's degree representing 46,5% of the population, followed by the High school with a 26,3% of representation. Only a reduced portion has primary education or lower (4,1%) and even lower (1,4%) with a Ph.D. or higher. This can lead to an errant generalization of these last groups ($\bar{x}$=3,62; S.D.=1,002).

Table 4-2 - Sample Population: Education Level Group Distribution

	Frequency	**Percentage**
Primary school or lower	9	4,1%
Middle School	17	7,8%
High school	57	26,3%
Bachelor's degree	101	46,5%
Master's degree	30	13,8%
Ph.D./Doctorate or higher	3	1,4%
Total	217	100%

Continuing now analyzing the employment status composed mainly of full-time employees, followed by a significant proportion of students (18,9%), this indicates that the sample is mainly economically active, this is possible to verify in greater detail in the following table with a mean of approximately, 2,46 and a standard deviation of 1,924.

Table 4-3 - Sample Population: Employment Status Group Distribution

	Frequency	**Percentage**
Full-time employee	126	58,1%
Part-time employee	12	5,5%
Unemployed	13	6%
Retired	6	2,8%
Student	41	18,9%
Working Student	18	8,3%
Person with a disability	1	0,5%
Total	217	100%

In terms of marital status, the largest category is single with a percentage of approximately 41%, followed by the married with approximately 32%, the rest of those as in minority which suggests, as predicted, being the majority of the population young,, having a relatively young to mid-life sample ($\bar{x}$=3,96; S.D.=2,19).

Table 4-4 - Sample Population: Marital Status Group Distribution

	Frequency	**Percentage**
Married	69	31,8%
Widowed	4	1,8%
Divorced	17	7,8%
In a relationship	39	18%
Single	88	40,6%
Total	217	100%

The vast majority of the participants in the sample are form Portugal (87,6%), followed by a small presence from Italy (7,4%), Spain (1,4%), France (1,4%), Brazil (0,9%), Colombia (0,5%), and the United Arab Emirates (0,9%), this gives a generalized findings on a national context ($\bar{x}$=4,88; S.D.=0,59).

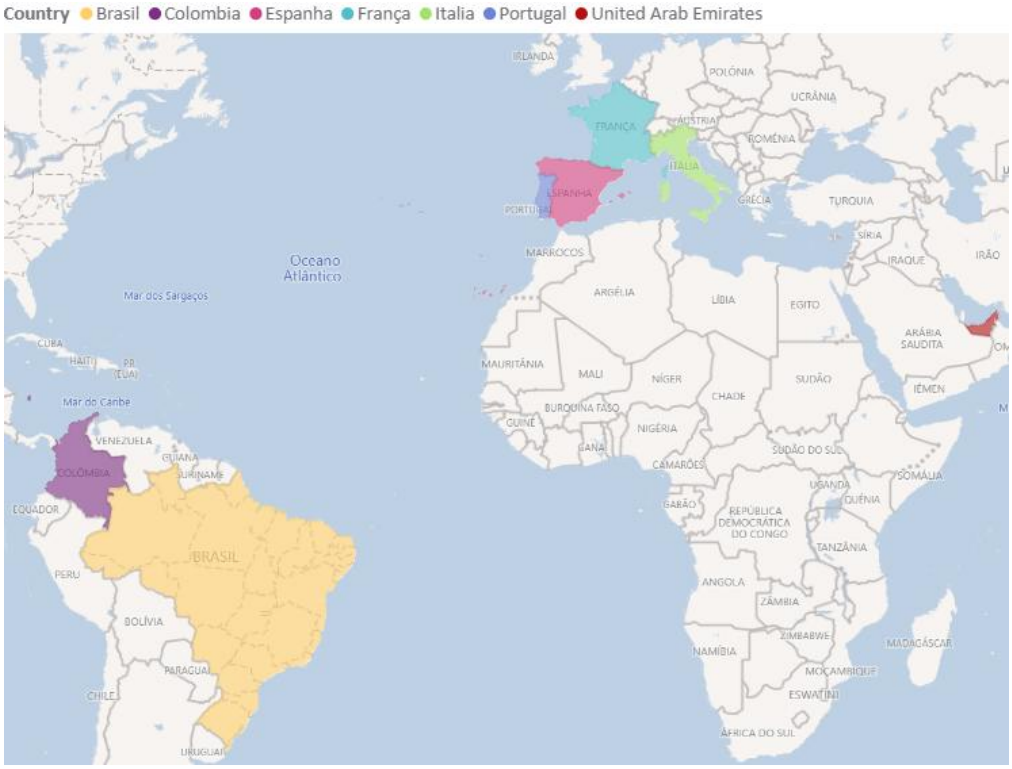

Figure 4-2 - Sample Distribution per Country

4.2. FASHION CONSUMPTION PROFILE

To get to know the shopping habits of the population sample, questions were previously asked about how frequently people shopped for fashion, knowing that those who never buy anything were previously eliminated. As a result, there is a more spaced-out consumption pattern, with most of the sample buying two to five times a year (36,4%) or once a month (33,6%). This may indicate a more consumerist perspective, with a tendency toward less frequent shopping.

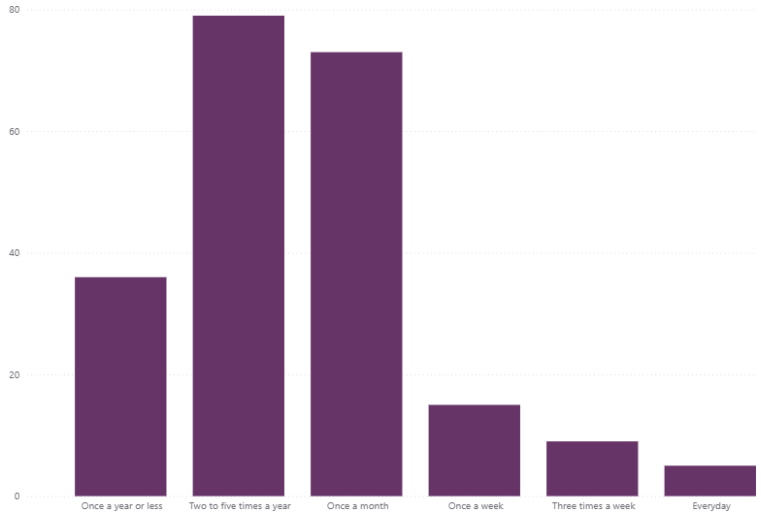

Figure 4-3 - Shop frequency distribution analysis

As said in the previous evaluation, also the shopping preferences were taken into consideration, being eliminated the ones that only bought in online shopping. With this, it is possible to verify a majority of respondents that mostly shop at physical stores, suggesting still a strong preference for traditional retail, but having a significant portion of uses of both equally with almost 30% of the sample.

Table 4-5 - Types of Shopping preferences Distribution

	Frequency	**Percentage**
Only Physical Stores	24	11,1%
Mostly Physical Stores	95	43,8%
I use both in the same amount	62	28,6%
Mostly Online Stores	36	16,6%
Total	217	100%

After this there was given a short understanding of the concept being studied, in this case the Smart Fitting Room and the subjects were asked if they were already familiarized with the concept, interesting to know if it is the first time getting in contact with this matter, having 53,92% of the respondents never heard of the concept, 26,27% were not so sure and only 19,82% had heard of the concept ($\bar{x}$=2,34; S.D.=0,79).

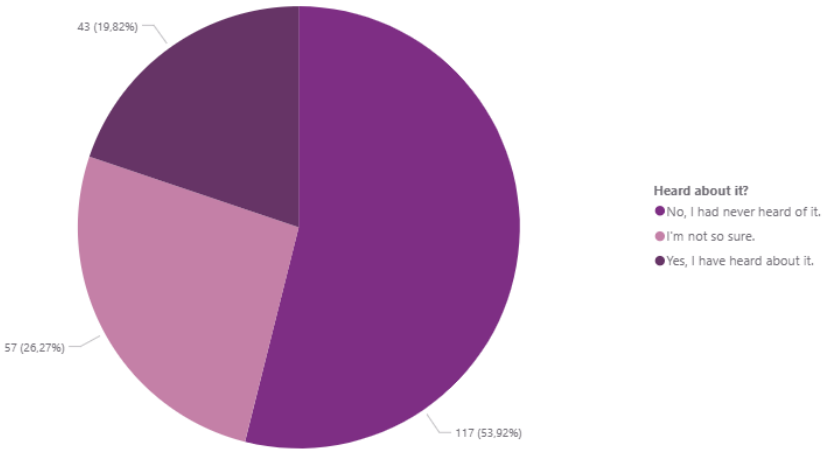

Figure 4-4 - Distribution of Sample with Previous knowledge on the Smart Fitting Room technology

Knowing that the sample is young and still prefers the physical buying experience, and the majority had never heard of the concept of the Smart Fitting Room, may help understand how they would react when they encounter it.

4.3. VARIABLE ASSESSMENT AND RELIABILITY

To evaluate if the Variables are trustworthy, the Cronbach's Alpha analysis was used for each variable and the mean of each variable. It was possible to conclude that the Perceived Enjoyment variable had a score of 0,943, indicating high reliability. Ease of Use had a score of 0,926, also indicating great reliability. Trust achieved a reliability of 0,954 out of 1, personalization scored 0,915, privacy concerns reached 0,944, and finally, intention to use had a score of 0,971. Since Cronbach's Alpha above 0.9 signifies good reliability, it is possible to conclude that all the variables are reliable with each other.

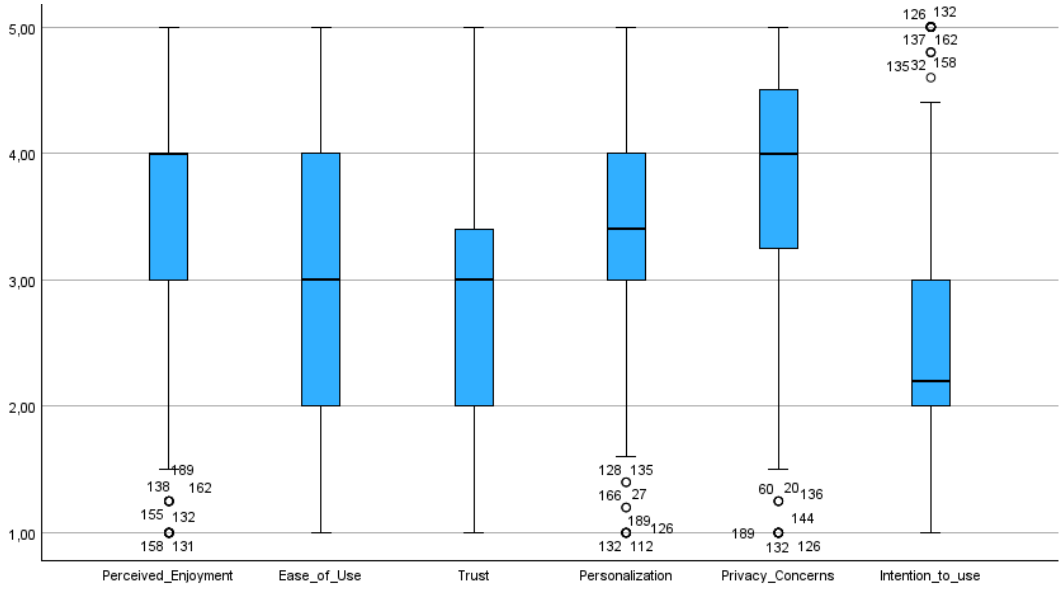

Figure 4-5 - Box Plot Constructs Distribution Representation

A box plot was generated showing the mean of each variable to assess distribution. Perceived Enjoyment had a median of 4, indicating overall positive user perception, with a negative skew and outliers below 2, suggesting a minority of respondents with low enjoyment. The ease-of-use variable shows a symmetrical distribution with a median of 3, indicating ambiguity regarding user differences. The distribution is uniform without outliers.

The trust variable had a median of approximately 3, with a slight positive skew that may suggest some positive reactions. Most values were between 3,5 and 2. Personalization scores ranged mainly between 3 and 4, indicating a very positive view, with some outliers between 1 and 2, showing extreme reactions to personalization. The same pattern appears for privacy concerns and the intention to use, which had medians of 4 and about 3, respectively. The intention to use also had many outliers above 4, indicating a small group willing to use.

4.4. INITIAL STATISTICAL TESTS

Knowing that *n* is higher than 50 (217) it was then done the Kolmogorov-Smirnov analysis for every variable in the model, the results demonstrated value with the significance under 0,001 in each case, indicating that p<0,05 meaning they don't follow a normal distribution. It was then considered to be made a correlation analysis between the dependent and the independent variable to verify if the privacy concerns and the intention to use are inferior linear, it was then created a Spearman correlation analysis that gave a result of a negative correlation, with a p = -0,224, p <0,001, meaning that augmenting the privacy concerns the intention to use tends to be less. Besides the correlation being strong, the statistical significance point is that this relation is consistent among the respondents.

The regression model indicated that the privacy issues are a significant predictor of the intention to use, F(1,215) = 26,619, P<0,001. That suggests that the model is pretty efficient in explaining a significant part of the variation in the intention to use. With this, it justifies the first hypothesis of the growing of the Privacy Concerns would affect the Intention to use the Smart Fitting Room technology.

Table 4-6 – Analysis of ANOVA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	26,884	1	26,884	26,619	<,001[b]
	Residual	217,139	215	1,010		
	Total	244,022	216			

a. DV: Intention to Use

b. Predictors: Privacy Concerns

4.5. ADVANCED ANALYSIS MODELS

The initial analysis indicated a negative relation between privacy concerns and usage intention, so the direct effect of Privacy Concerns was not statistically significant (β = -0.094, p = 0.067). On the other hand, the Perceived Enjoyment variable showed a strong positive and highly significant impact on usage intention (β = 0.811, p < 0.001).

Table 4-7 - Analysis of Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	**Std. Error**	**Beta**	**t**	**Sig.**
1	**(Constant)**	0,768	0,191		4,018	<0,001
	Privacy Concerns	-0,094	0,051	-0,094	-1,839	0,067
	Perceived Enjoyment	0,827	0,052	0,811	15,845	<0,001

a. DV: Intention to Use

Using the PROCESS model, the mediation analysis was put under evaluation to verify that Perceived Enjoyment and Trust mediate the relationship between the variables. Starting with the Perceived Enjoyment, the results gotten a significant effect under Privacy Concerns (B= 0,5052, p < 0,001), and Perceived Enjoyment had a negative effect over Intention to Use (B=-08255, p<0,001).

The direct effect of the Privacy Concerns over the Intention to Use was not significant and the indirect effect indicated a mediation of the relation between the variables. This does not confirm the second hypothesis.

For the Trust, the effect of the Privacy Concerns over the Trust had a coefficient of 0,0770, t=1,12, p=0,2640, there was no evidence of privacy issues impacting the trust, meaning that the mediator is not affected significantly by the independent variable. From the trust to the Intention to Use, it was expected to have a positive significance, but the negative sign shows that the higher the trust the less the intention to use. It is possible to conclude that the third Hypothesis could not be verified, meaning that there is no mediation from Trust between Privacy Concerns and the Intention to Use.

It was then tried to verify if the Trust could be a good moderator, and it was tested using the PROCESS model 1, and it got a result of moderating significantly the relationship between the Privacy Concerns and the Intention to Use (b=0,02363, p<0,001). Trust can neutralize the negative impact of Privacy Issues.

Table 4-8 - Analysis of PROCESS Model 1 (Personalization)

Variable	Coef. (B)	p-valor	IC 95%
Privacy Concerns	-0,1419	0,2619	[-0,3907 ; 0,1068]
Personalization	-0,9355	<0,001	[-1,2314 ; -0,6396]
Interaction Privacy Concerns x Personalization	+0,0367	0,3572	[-0,0416 ; 0,1149]

Moderation analysis revealed that personalization does not moderate the relationship between privacy concerns and usage intention (b = 0.0367, p = 0.357). Although perceived personalization has a significant direct negative effect on usage intention (b = -0.9355, p < 0.001), no evidence was found that it influences how privacy concerns affect usage intention. Personalization has then a negative direct effect over the intention to use, meaning that the higher the perception of personalization less is the intention to use. This is a non-intuitive that can reflect the perception of the personalization has being a characteristic of the technology, having a non-effect on the privacy concerns. Being that it does not moderate the relationship between Privacy Concerns and the Intention to use.

Table 4-9 - Analysis of PROCESS Model 1 (Ease of Use)

Variable	Coef. (B)	p-valor	IC 95%
Privacy Concerns	-0,8875	<0,001	[-1,1623 ; -0,6126]
Ease of Use	-1,1426	<0,001	[-1,5084 ; -0,7767]
Interaction Privacy Concerns × Ease of Use	+0,2410	<0,001	[+0,1440 ; +0,3381]

A significant interaction between privacy concerns and perceived ease of use was identified in predicting intention to use (β = 0.24, p < .001). Conditional effects analysis revealed that when ease of use is high, the negative effect of privacy disappears. This suggests that making a system easier to use can mitigate the negative effects of privacy concerns on intention to use, confirming H4, that this would have an impact on the Attitude toward using the Smart Fitting Room.

5. RESULTS AND DISCUSSION

This research had a main objective of provide insights into consumers' intention to use the Smart Fitting Room technology in a physical retail environment, especially regarding potential and predicted privacy concerns. After conducting the literature review on the topic, hypotheses were developed, and a conceptual model was created to support the theory. A survey was then conducted to test and draw conclusions.

Table 5-1 - Summary of Hypotheses and Results

Hypothesis	**Description**	**Result**
H1	Consumer Privacy Concerns will negatively influence the Intention to use the Smart Fitting Room technology.	Confirmed
H2	Perceived Enjoyment reduces with the increase of Consumer Privacy Concerns that is unfavorable to the attitude towards using the Smart Fitting Room	Not Confirmed
H3	Consumer Privacy Concerns leads to decrease on the will to use the Smart Fitting Room, with a relationship in trust reduction.	Not Confirmed
H4	The negative effect that privacy concerns have on the attitude towards using the Smart Fitting Room is weaker when perceived ease of use is higher	Confirmed
H5	Personalization weakened the negative impact consumer privacy issues have on the attitude toward using the technology.	Not Confirmed

As previously mentioned, the general population was not normalized and did not represent a nation or a specific sample, first by having a population that shopped in physical stores and not only online, and that had already bought something in their lives. Being most of the young population, with an underrepresentation of the elders, same with the gender, with a majority females. Higher education is also a trend in this analysis, above a Bachelor's degree, which can already be taken as a limitation due to the sample. People are spread in the globe although there is a clear accentuation on Portuguese population almost, representing 87,6% of the sample. These examples illustrate that this evaluation does not accurately represent the reaction of the regular consumer. Regarding the first hypothesis, that Consumer Privacy Concerns will negatively influence the Intention to use the Smart Fitting Room technology, well-supported by the existing literature on the topic, such as in Souka et al., (2024), the findings confirmed that issues with privacy in an in-store environment can decrease the willing of use the object.

On the other hand, and against all expectations, hypotheses 2, 3, and 5 were not confirmed. Hypothesis 2 showed a counterintuitive mediation effect, the expected was not confirmed, meaning that the results showed that Perceived Enjoyment increased with Consumer Privacy Concerns, which could be interpreted as an interpretation failure or a non-direct association with the Consumer Concern.

Hypotehsis 3 and 5 on the contrary, didn't have a significant conclusion, they were not taken as confirmation of the theory but didn't contradict it. Hypotehsis 3 regariding, the Consumer Privacy Concerns leading to decrease on the will to use the Smart Fitting Room, with a relationship in trust reduction did not yield a statistically significant effect and could not be considered, possibly having an interpretation of trust differentiated, this is not congruent with (Chen et al., 2022), which concluded the mediating relationship of trust in different environments. Hypotehsis 5, similarly, suggested that personalization didn't have any impact on the relationship between privacy concerns and the willing to use the technology on this environment, suggesting that could have been perceived as intrusive, potentially intensifying pricacy concerns, contrasting with findings, for example, on personalized characteristics like fashion trends (Liu et al., 2016).

In contrast, following hypotehsis 1, hypotehsis 4 was supported, showing that presenting the technology in a more user-friendly and accessible way can have a possible positive impact in reducing privacy issues, this aligns with Hornbæk & Hertzum, (2017) findings, suggesting that user motivation (and ultimately technology adoption), is strongly motivated by the perception of a Smart Fitting Room ease to use and with a clear design.

6. CONCLUSIONS AND FUTURE RESEARCH

This study aimed to investigate how privacy concerns affect consumers intention to use Smart Fitting Room technology in a physical fashion retail environment. In a time when technological innovation is becoming more relevant for competitiveness in the fashion industry, understanding its barriers is also crucial for businesses. Businesses cannot fall behind digital transformation not neglect to invest in this type of technology (McKinsey & Company, n.d.), and Smart Fitting Rooms power with Artificial Intelligence and Augmented Reality represent an advancement interesting to invest in, combining personalization in an in-store scenario.

The findings of this research confirm that privacy concerns play a significant role in reducing consumers' willingness to adopt SFR technology. This aligns with prior literature, however, the study also revealed that a user-friendly and accessible design can help reduce these concerns, encouraging adoption. Moving to practical contributions that this investigation brought, it can be noticed that for a company wanting to adopt this technology Consumer Privacy as to be a topic to have great attention as it can clearly affect their willingness to use.

A perception of the technology to be ease and intuitive to use is a topic that was showed to be relevant to the customer on this sample, therefore in a future implementation it could be taken into consideration. Speaking only on privacy concerns, that needs to be ensured by the company, that will positively impact the security on using the Smart Fitting Room.

The present research had some limitations, there were underlined during the process. Primarily, the sample representation of 217 valid replied is a small population to considerate as a parallelism of the society, not only this but the non-consistency of the sample, with mainly younger individuals, highly educated and mostly from Portugal limits a cultural generalization.

There is also the fact that this problem is merely a product of imagination, as no physical experience was involved. This familiarity with the technology itself could affect the reliability of the responses. Finally, considering the results obtained from some hypotheses, the fact that this was a construction based on consumers' interpretation of their actions means the construct might not have been as clear as desired, especially given that the respondent had no background on the topic.

It could be interesting to explore the physical environment with a lab to analyze consumer behavior in relation to the technology itself and not a mere hypothetical scenario, as Saakes et al. (2016) explored. For qualitative analysis, a larger and more diverse sample could be tested to provide more insights, using models already developed, like TAM (Fortes & Rita, 2016), and attempting to adapt them to new variables and constructs.

A cross-sectional analysis might also be conducted using the Smart Fitting Room environment, focusing on a single technology within it, such as voice assistance. All of this can contribute to a more comprehensive and advanced analysis of the topic, making it broader and increasingly

relevant. Essentially, strategies to enhance consumers' trust or reduce their privacy concerns and reactance are very important (Chen et al., 2022), impacting not only the intention to shop but also the decision to use.

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APPENDIX A

ETHICS COMMITTEE REPORT

This is to certify that

Project No.: **OTHER2025-1-183967**

Project Title: **The Impact of Smart Fitting Rooms on Consumer Privacy Concerns in Physical Fashion Retail**

Principal Researcher: **Margarida Garcia**

according to the regulations of the Ethics Committee of NOVA IMS and MagIC Research Center this project was considered to meet the requirements of the NOVA IMS Internal Review Board, being considered **APPROVED** on 1/18/2025.

It is the Principal Researcher's responsibility to ensure that all researchers and stakeholders associated with this project are aware of the conditions of approval and which documents have been approved.

The Principal Researcher is required to notify the Ethics Committee, via amendment or progress report, of

- Any significant change to the project and the reason for that change;

- Any unforeseen events or unexpected developments that merit notification;

- The inability of the Principal Researcher to continue in that role or any other change in research personnel involved in the project.

Lisbon, 1/18/2025

NOVA IMS Ethics Committee

ethicscommittee@novaims.unl.pt

APPENDIX B

QUALTRICS SURVEY QUESTIONS – ENGLISH VERSION

Introduction:

The purpose of this survey is to collect data on the consumers' privacy concerns and the use of Smart Fitting Rooms in physical fashion retail environments, as part of a NOVA Information Management School - IMS Master's Dissertation.

This study explores how technologies, particularly Smart Fitting Rooms, influence Fashion Retail, and how they relate to consumers' privacy issues. Participation in this study is entirely voluntary, and you may withdraw at any time without consequence. Please note that this research does not involve the processing of sensitive personal data (such as ethnicity, genetic, political opinions, and sexual lifestyle) nor geolocation and confidential information beyond the initial consent. It is designed to be non intrusive and will not cause any psychological stress, discomfort, anxiety or cause harm or negative consequences. The survey will approximately take 8 minutes to complete. Your responses will be kept confidential and anonymous.
If you have any questions, please feel free to contact me at 20230127@novaims.unl.pt
Clicking on the button below, "Yes, I agree to participate." declares that you:

- Have read the above information
- Voluntarily agree to participate
- Are not being offere any financial compensation or gift to participate
- Are at least 18 years of age.

◯ Yes, I agree to participate.

◯ No, I do not agree to participate.

Q1.

How frequently do you shop for fashion?

◯ I never buy anything

◯ Once a year or less

◯ Two to five times a year

◯ Once a month

◯ Once a week

◯ Three times a week

◯ Everyday

Q2.

What is your most used channel to shop for Fashion?

◯ Only Physical Stores

◯ Mostly Physical Stores

◯ I use both in the same amount

◯ Mostly Online Stores

◯ Only Online Stores

Q3.

The Smart Fitting Room is a retail IoT (Internet of Things) technology that enhances the shopping experience by integrating Augmented Reality, and Artificial Intelligence. It allows customers to try on clothes without physically changing, while continuously analyzing data to provide personalized recommendations and interactions. These fitting rooms include voice recognition, gesture-based design customization, and social sharing capabilities, transforming shopping into an immersive process. It can do real-time comparisons, give fit recommendations, and possibly garment customization.

Were you familiarized with this concept previously?

◯ Yes, I have heard about it.

◯ I'm not so sure.

◯ No, I had never heard of it.

Please provide your responses to the following questions on a scale of 1 to 5, where 1 means "Strongly Disagree" and 5 means "Strongly Agree".

Q4.

I think using Smart Fitting Room for in-store shopping would be…

	1 (strongly disagree)	*2 (disagree)*	*3 (neutral)*	*4 (agree)*	*5 (strongly agree)*
entertaining	○	○	○	○	○
pleasant	○	○	○	○	○
exciting	○	○	○	○	○
fun	○	○	○	○	○

Q5.

In my opinion, Smart Fitting Rooms technology…

	1 (strongly disagree)	*2 (disagree)*	*3 (neutral)*	*4 (agree)*	*5 (strongly agree)*
Would be easy to use.	○	○	○	○	○
Would not require any special skills to operate it.	○	○	○	○	○
Would be easy to get to do what I want to do.	○	○	○	○	○
Would be easily learned as needed.	○	○	○	○	○
Attention call – click on 4	○	○	○	○	○

Q6.

I think that…

	1 (strongly disagree)	*2 (disagree)*	*3 (neutral)*	*4 (agree)*	*5 (strongly agree)*
The smart fitting room technology can be trusted.	○	○	○	○	○

The smart fitting room technology would have high integrity.	○	○	○	○	○
I would be able to trust the Smart Fitting Room technology completely.	○	○	○	○	○
I would be treated fairly and honestly by the Smart Fitting Room technology.	○	○	○	○	○
The Smart Fitting Room technology would keep my best interests in mind.	○	○	○	○	○

Q7.

About the personalization characteristic…

	1 (strongly disagree)	*2 (disagree)*	*3 (neutral)*	*4 (agree)*	*5 (strongly agree)*
I feel the service provided by the Smart Fitting Room would be personalized to my preferences.	○	○	○	○	○
I would feel sufficiently rewarded for providing information to the Smart Fitting Room.	○	○	○	○	○
I think the interactions with the Smart Fitting Room	○	○	○	○	○

are going to be tailored.					
The Smart Fitting Room will adapt to my individual needs.	○	○	○	○	○
The value I would receive for providing information to the Smart Fitting Room would be more than fair.	○	○	○	○	○

Q8.

All things considered…

	1 (strongly disagree)	*2 (disagree)*	*3 (neutral)*	*4 (agree)*	*5 (strongly agree)*
I would be concerned that my personal and biometric data could be accessed insecurely when using Smart Fitting Room technology.	○	○	○	○	○
I would be hesitant to use and provide information to the Smart Fitting Room due to potential misuse by others.	○	○	○	○	○
The use of Smart Fitting Room can cause serious privacy problems.	○	○	○	○	○
I would be concerned that a person could	○	○	○	○	○

find my private data on the Internet.	

Q9.

I think…

	1 (strongly disagree)	*2 (disagree)*	*3 (neutral)*	*4 (agree)*	*5 (strongly agree)*
I intend to use the Smart Fitting Room technology in the future.	◯	◯	◯	◯	◯
I predict that I will use the Smart Fitting Room technology in the future.	◯	◯	◯	◯	◯
It is likely that I use the Smart Fitting Room technology in the future.	◯	◯	◯	◯	◯
It is possible that I use the Smart Fitting Room technology in the future.	◯	◯	◯	◯	◯
It is probable that I use the Smart Fitting Room technology in the future.	◯	◯	◯	◯	◯

Q10.

Please select the gender you identify as from the options below.

◯ Female

◯ Male

◯ Non-binary / third gender

◯ Prefer not to say

Q11.

Please select the age group you belong to from the options below.

◯ 18-24

◯ 25-34

◯ 35-44

◯ 45-54

◯ 55-64

◯ 65-74

◯ 75-84

◯ 85+

Q12.

Please select the highest level of education you have accomplished.

◯ Primary school or lower

◯ Middle school

◯ High school

◯ Bachelor's degree

◯ Master's degree

◯ Ph.D./Doctorate or higher

Q13.

Please select your current employment status from the options below.

◯ Full-time employee

◯ Part-time employee

◯ Unemployed

◯ Retired

◯ Student

◯ Working Student

◯ Person with a disability

Q14.

Please select your marital status from the options below.

◯ Married

◯ Widowed

◯ Divorced

◯ Separated

◯ In a relationship

◯ Single

Q15.

Please choose your current country of residence from the list below.

Portugal

We thank you for your time spent taking this survey.

Your response has been recorded.

QUALTRICS SURVEY QUESTIONS – PORTUGUESE VERSION

Introdução:

O objetivo deste inquérito é recolher dados sobre as preocupações com a privacidade dos consumidores e a utilização de Smart Fitting Rooms em ambientes físicos de retalho de moda, no âmbito de uma Dissertação de Mestrado da NOVA Information Management School - IMS. Este estudo explora como as tecnologias, particularmente as Smart Fitting Rooms, influenciam o Retalho de Moda e como se relacionam com as questões de privacidade dos consumidores. A participação neste estudo é inteiramente voluntária, podendo retirar-se a qualquer momento sem consequências. Por favor, note que esta pesquisa não envolve o processamento de dados pessoais sensíveis (tais como, etnia, opiniões genéticas, políticas e de estilo de vida sexual) nem geolocalização e informações confidenciais além do consentimento inicial. É concebido para ser não intrusivo e não irá causar qualquer stress psicológico, desconforto, ansiedade ou causar danos ou consequências negativas. O inquérito levará aproximadamente 8 minutos a ser concluído. As suas respostas serão mantidas confidenciais e anónimas.

Se tiver alguma dúvida, não hesite em contactar-me em 20230127@novaims.unl.pt Clicando no botão abaixo “Sim, concordo em participar.” declara que:

- Leu a informação acima
- Concorda voluntariamente em participar.
- Não estão a ser oferecidas quaisquer compensações financeiras ou presentes para participar
- Tem pelo menos 18 anos de idade.

◯ Sim, concord em participar.

◯ Não, não concordo em participar.

Q1.

Com que frequência compra moda?

◯ Nunca compro nada

◯ Uma vez por ano ou menos

◯ Duas a cinco vezes por ano

◯ Uma vez por mês

◯ Uma vez por semana

◯ Três vezes por semana

◯ Todos os dias

Q2.

Qual é o seu canal mais utilizado para comprar Moda?

◯ Apenas Lojas Físicas

◯ Principalmente Lojas Físicas

◯ Eu uso ambos na mesma quantidade

◯ Principalmente Lojas Online

◯ Apenas Lojas Online

Q3.

O Smart Fitting Room é uma tecnologia IoT (Internet of Things) de retalho que potencia a experiência de compra integrando Realidade Aumentada e Inteligência Artificial. Permite aos clientes experimentar roupas sem mudar fisicamente, enquanto analisam continuamente os

dados para fornecer recomendações e interações personalizadas. Estes provadores incluem reconhecimento de voz, personalização de design baseada em gestos e capacidades de partilha social, transformando as compras num processo imersivo. Pode fazer comparações em tempo real, dar recomendações de ajuste e possivelmente personalização de vestuário.

Estava familiarizado com este conceito anteriormente?

◯ Sim, ouvi falar disso.

◯ Não tenho a certeza.

◯ Não, nunca tinha ouvido falar disso.

Forneça as suas respostas às seguintes perguntas numa escala de 1 a 5, onde 1 significa "Discordo totalmente" e 5 significa "Concordo totalmente".

Q4.

Acho que usar Smart Fitting Room para compras na loja seria…

	1 (discordo totalmente)	*2 (discordo)*	*3 (neutro)*	*4 (concordo)*	*5 (concordo totalmente)*
Envolvente	◯	◯	◯	◯	◯
Agradável	◯	◯	◯	◯	◯
Emocionante	◯	◯	◯	◯	◯
Divertido	◯	◯	◯	◯	◯

Q5.

Na minha opinião, a tecnologia Smart Fitting Room…

	1 (discordo totalmente)	*2 (discordo)*	*3 (neutro)*	*4 (concordo)*	*5 (concordo totalmente)*

Seria fácil de usar.	○	○	○	○	○
Não necessitaria de competências especiais para o seu funcionamento.	○	○	○	○	○
Seria fácil conseguir fazer o que eu quero fazer	○	○	○	○	○
Seria facilmente aprendida conforme necessário.	○	○	○	○	○
Chamada de atenção – clique no 4	○	○	○	○	○

Q6.

Eu acho que…

	1 (discordo totalmente)	*2 (discordo)*	*3 (neutro)*	*4 (concordo)*	*5 (concordo totalmente)*
A tecnologia de Smart Fitting Room pode ser confiável.	○	○	○	○	○
A tecnologia de Smart Fitting Room teria uma elevada integridade.	○	○	○	○	○
Poderia confiar completamente na tecnologia Smart Fitting Room.	○	○	○	○	○
Eu seia tratado de forma justa e honesta pela tecnologia Smart Fitting Room.	○	○	○	○	○

A tecnologia Smart Fitting Room teria em mente os meus melhores interesses.	○	○	○	○	○

Q7.

Sobre a característica de personalização…

	1 (discordo totalmente)	*2 (discordo)*	*3 (neutro)*	*4 (concordo)*	*5 (concordo totalmente)*
Acho que o serviço prestado pelo Smart Fitting Room seria personalizado de acordo com as minhas preferências.	○	○	○	○	○
Eu sentir-me-ia suficientemente recompensado por fornecer informações ao Smart Fitting Room.	○	○	○	○	○
Acho que as interações com o Smart Fitting Room vão ser adaptadas.	○	○	○	○	○
O Smart Fitting Room adapta-se às minhas necessidades individuais.	○	○	○	○	○
O valor que eu receberia por fornecer informações ao Smart Fitting Room seria mais do que justo.	○	○	○	○	○

Q8.

Considerando tudo…

	1 (discordo totalmente)	*2 (discordo)*	*3 (neutro)*	*4 (concordo)*	*5 (concordo totalmente)*
Preocupa-me que os meus dados pessoais e biométricos pudessem ser acedidos de forma insegura quando se utiliza a tecnologia Smart Fitting Room.	○	○	○	○	○
Eu estaria hesitante em usar e fornecer informações ao Smart Fitting Room devido ao potencial uso indevido por outros.	○	○	○	○	○
O uso do Smart Fitting Room pode causar sérios problemas de privacidade.	○	○	○	○	○
Preocupa-me que uma pessoa pudesse encontrar os meus dados privados na Internet.	○	○	○	○	○

Q9.

Penso que…

	1 (discordo totalmente)	*2 (discordo)*	*3 (neutro)*	*4 (concordo)*	*5 (concordo totalmente)*
Pretendo usar a tecnologia Smart	○	○	○	○	○

Fitting Room no futuro.					
Suponho que vá usar a tecnologia Smart Fitting Room no futuro.	◯	◯	◯	◯	◯
É previsível que eu use a tecnologia Smart Fitting Room no futuro.	◯	◯	◯	◯	◯
É possível que eu use a tecnologia Smart Fitting Room no futuro.	◯	◯	◯	◯	◯
É provável que eu use a tecnologia Smart Fitting Room no futuro.	◯	◯	◯	◯	◯

Q10.

Selecione o género com que se identifica nas opções abaixo.

◯ Feminino

◯ Masculino

◯ Não binário/terceiro género

◯ Prefiro não dizer

Q11.

Por favor, selecione a faixa etária a que pertence nas opções abaixo.

◯ 18-24

◯ 25-34

◯ 35-44

◯ 45-54

◯ 55-64

◯ 65-74

◯ 75-84

◯ 85+

Q12.

Por favor, selecione o nível mais alto de educação que tem.

◯ Ensino primário ou inferior

◯ Ensino Médio

◯ Ensino Secundário

◯ Licenciatura

◯ Mestrado

◯ Ph.D./Doutoramento ou superior

Q13.

Por favor, selecione o seu estado de emprego atual nas opções abaixo.

◯ Trabalhador a tempo inteiro

◯ Trabalhador a tempo parcial

◯ Desempregado

◯ Aposentado

◯ Estudante

◯ Trabalhador-estudante

◯ Pessoa com deficiência

Q14.

Por favor, selecione o seu estado civil nas opções abaixo.

◯ Casado

◯ Viúvo

◯ Divorciado

◯ Separado

◯ Numa relação

◯ Solteiro

Q15.

Selecione o seu país de residência atual na lista abaixo.

Portugal

Agradecemos a sua participação neste inquérito.

A sua resposta foi registada.

NOVA Information Management School
Instituto Superior de Estatística e Gestão de Informação

Universidade Nova de Lisboa