ANALYSIS OF ONLINE AND IN-STORE CLOTHES SHOPPING EXPERIENCES TAKING A USER JOURNEY APPROACH

A THESIS SUBMITTED TO
THE GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES
OF
MIDDLE EAST TECHNICAL UNIVERSITY

BY

ZEYNEP YILMAZ ÜNLÜ

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR
THE DEGREE OF MASTER OF SCIENCE
IN
INDUSTRIAL DESIGN

JANUARY 2022

Approval of the thesis:

ANALYSIS OF ONLINE AND IN-STORE CLOTHES SHOPPING EXPERIENCES TAKING A USER JOURNEY APPROACH

submitted by **ZEYNEP YILMAZ ÜNLÜ** in partial fulfillment of the requirements for the degree of **Master of Science in Industrial Design, Middle East Technical University** by,

Prof. Dr. Halil Kalıpçılar
Dean, Graduate School of **Natural and Applied Sciences** _____

Prof. Dr. Gülay Hasdoğan
Head of the Department, **Industrial Design** _____

Prof. Dr. Bahar Şener-Pedgley
Supervisor, **Dept. of Industrial Design, METU** _____

Examining Committee Members:

Prof. Dr. Gülay Hasdoğan
Dept. of Industrial Design, METU _____

Prof. Dr. Bahar Şener-Pedgley
Dept. of Industrial Design, METU _____

Assist. Prof. Dr. Aslı Günay
Dept. of Media and Visual Arts, Koç University _____

Date: 20.01.2022

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

Name Last name: Zeynep Yılmaz Ünlü

Signature:

ABSTRACT

ANALYSIS OF ONLINE AND IN-STORE CLOTHES SHOPPING EXPERIENCES TAKING A USER JOURNEY APPROACH

Yılmaz Ünlü, Zeynep
Master of Science, Industrial Design
Supervisor: Prof. Dr. Bahar Şener-Pedgley

January 2022, 158 pages

In parallel to advancements in information and communication technologies (ICT), shopping has evolved as one of the most commonly carried out daily activities in people's lives. Different ways of shopping have emerged leading to reshaping shopping experiences. The research presented in the thesis particularly focuses on the changes in online and in-store clothes shopping experiences along with people's shopping channel and medium preferences. Therefore, after reviewing the literature, two-phase fieldwork is carried out. In the first phase, an online questionnaire is administered to 132 people to discover their preferences for clothes shopping channel and medium, as well as their level of embracing new technologies to achieve their goals. In the second phase, one-to-one interviews are conducted to gain in-depth knowledge of users clothes shopping experiences regarding their needs, expectations, and frustrations by taking a user journey approach. Consequently, insights and suggestions to design for enhanced future clothes shopping experiences are presented.

Keywords: User Experience, User Journey, Clothes Shopping Experience.

ÖZ

KULLANICI YOLCULUĞU YAKLAŞIMINI BENİMSEYEREK ÇEVRİM İÇİ VE MAĞAZA İÇİ KIYAFET ALIŞVERİŞİ DENEYİMLERİNİN ANALİZİ

Yılmaz Ünlü, Zeynep
Yüksek Lisans, Endüstriyel Tasarım
Tez Yöneticisi: Prof. Dr. Bahar Şener-Pedgley

Ocak 2022, 158 sayfa

İnsanların günlük yaşamlarında en yaygın faaliyetlerden biri olan alışveriş, bilgi ve iletişim teknolojilerindeki gelişmelere bağlı olarak gelişmiştir. Farklı alışveriş biçimleri ortaya çıkmış ve alışveriş deneyimlerinin yeniden şekillenmesine yol açmıştır. Bu çalışma, özellikle kıyafet alışverişi deneyimindeki değişimlerle birlikte insanların alışveriş kanalı ve aracı tercihlerine odaklanmaktadır. Çalışmanın amacı çevrim içi ve mağaza içi kıyafet alışveriş deneyimlerini keşfetmek ve analiz etmektir. Araştırmanın ilk aşamasında, giyim alışveriş kanalını ve mecra tercihlerini ve hedeflerine ulaşmak için yeni teknolojileri benimseme ve kullanma eğilimlerini keşfetmek için 132 kişinin katılımıyla çevrimiçi bir anket gerçekleştirilmiştir. Araştırmanın ikinci aşamasında, kullanıcı yolculuğu yaklaşımı benimsenerek, kullanıcıların kıyafet alışveriş deneyimleri, ihtiyaçları, beklentileri ve hayal kırıklıkları hakkında derinlemesine bilgi sahibi olmaya yönelik bire bir görüşmeler yapılmıştır. Sonuç olarak, gelecekteki kıyafet alışveriş deneyimlerini geliştirmeye dair öngörüler ve öneriler sunulmuştur.

Anahtar Kelimeler: Kullanıcı Deneyimi, Kullanıcı Yolculuğu, Kıyafet Alışveriş Deneyimi

To my beloved family

ACKNOWLEDGMENTS

First and foremost, I would like to express my gratitude to my thesis supervisor Prof. Dr. Bahar Şener-Pedgley, for her endless support, understanding, patience, and encouragement in every stage of this thesis. Her motivative attitude, inspiring advice and kind attention made this thesis possible. I'm grateful for having the chance to work with her.

I would also like to thank to the members of the thesis committee Prof. Dr. Gülay Hasdoğan and Assist. Prof. Dr. Aslı Günay for their valuable comments, time, and effort.

I am thankful to my thesis buddy, Batuhan, for all his contributions to this study, along with motivational talks that made this challenging process much bearable. I am also thankful to my workmate, Melis, for her understanding and support. I owe a special thanks to Zeynep and Alp for sharing their experiences, endless support, and inspiring talks. I would like to give my warmest thanks Özge for her friendship, optimism, and support.

I am also thankful to all my 132 participants for allocating their valuable time to participate in the study.

Finally, I would like to thank my beloved family for their endless love and support, I feel blessed to have them. Last but not least, I want to thank my best friend and partner, Serhat, for always being there for me. His endless support, tolerance and love made my hard days bearable.

TABLE OF CONTENTS

LIST OF TABLES

TABLES

LIST OF FIGURES

FIGURES

LIST OF ABBREVIATIONS

ABBREVIATIONS

AI	Artificial Intelligence
AR	Augmented Reality
CJM	Customer Journey Map
CX	Customer Experience
HMD	Head Mounted Displays
ICT	Information and Communications Technology
IoT	Internet of Things
MR	Mixed Reality
NFT	Need for Touch
NFTs	Non-Fungible Tokens
QR Code	Quick Response Code
RFID	Radio-frequency identification
TAM	Technology Acceptance Model
TRI	Technology Readiness Index
UX	User Experience
VR	Virtual Reality

CHAPTER 1

INTRODUCTION

1.1 Background

Shopping is a regular activity in our daily lives, and the shopping experience has evolved from brick-and-mortar shops to mobile applications in our pockets. Thanks to this transformation, people can locate the stores where the products they want to buy, or they can order online without even knowing the physical location of the store.

This transformation, which also leads people to get what they want independently of a specific time and place, takes the shopping experience to a whole new level. It generates different interactions with our physical and digital environment through devices. However, with the COVID-19 pandemic, our physical interaction with the environment is restricted by lockdowns, closed places, prohibitions, and new regulations. Accordingly, people's daily routine, especially habits, had to transform inevitably with rapid acceleration, in both positive and negative ways.

Disease outbreaks and pandemics have reshaped societies, influenced people's lives, and altered world throughout history (Snowden, 2019). Comparing data on online activity both before and during COVID-19 is especially valuable for estimating the ongoing and potential changes for future (Conway et al., 2020; Mouratidis et al., 2021). Therefore, the pandemic situation is considered as a starting point for this research.

The researcher's personal motivation is to have better understanding on how shopping experience would evolve when interactions are reshaped, namely discovering its potential transformation. Particularly, 'clothes shopping' is chosen as an experience to focus on this research to understand how clothes shopping occurs

when it is not possible to see, touch, and try on the clothes; that is, the senses of sight and touch are restricted.

Although the abovementioned sensory restrictions during shopping have risen during the COVID-19 pandemic period, such restrictions also apply whilst shopping in online mediums. Therefore, the topic has relevance during the pandemic, the scope extends beyond. Thus, the analysis and discussions carried out throughout the thesis are not specific to pandemic restrictions.

1.2 Aim and Objectives

This research investigates both online and in-store clothes shopping experiences by taking a user journey approach. It aims to identify people's needs and expectations and to explore opportunities that can be utilized to design for enhanced future clothes shopping experiences.

The research sets the following objectives:

- To understand users' preferences and strategies on clothes shopping along with their needs and expectation
- To examine how the selection of mediums (devices) affects users' clothes shopping process
- To provide insights for designers aiming to design for enhanced clothes shopping experiences

1.3 Scope of the Study

The focus of the research is to analyze users' clothes shopping experiences in online and in-store shopping contexts. Therefore, the fieldwork requires the participation of users, who have experienced both in-store and online clothes shopping. The research intends to explore everyday clothes shopping experience of people who shop for themselves. For this reason, people who shop for others or for multiple (e.g., family

members, friends etc.) who may have different shopping requirements, needs and concerns are kept outside the scope of this research. Accordingly, through different shopping channels, including offline and online tools, young adults, aged between 18-40, were targeted as the participants due to their potential familiarity with, and regular use of, the online tools.

1.4 Research Questions

Considering the research aim and objectives mentioned previously, three main questions were formed together with the following sub-questions.

- Which channels do users prefer to shop for clothes currently? Why?
    - How does channel preferences shape users' clothes shopping experience?
- What are the potential touchpoints in the clothes shopping experience for online and in-store clothes shopping?
    - In which stages do they differ from each other?
    - What are the pain points of the online and in-store shopping in terms of user experience?
    - In which aspects do they dissatisfy the needs and expectations of users?
- In which ways can designing for clothes shopping experience be enhanced?
    - Which technologies can be benefited from?

1.5 Structure of Thesis

The thesis consists of the following chapters.

Chapter 1, *Introduction,* gives background information about the changes in the clothes shopping experience recently, explains researcher's personal motivation for

the research, presents the aims and objectives of the research, followed by the scope of the research, and research questions.

Chapter 2, *Literature review,* examines the shopping activity along with shopping channels and current trends. Then emerging and existing technologies used in shopping and the technology acceptance phenomenon are investigated. Following that, an inquiry into the user experience is presented with considering it as a part of the clothes shopping experience—lastly, the chapter examines customer journey map (CJM) approach.

Chapter 3, *Methodology,* introduces the proposed methodology for the present research and fieldwork set-up. It includes data collection and data analysis tools and methods, and participant sampling.

Chapter 4, *Results and Analysis of the Fieldwork,* presents and discusses the results and analysis of the fieldwork.

Chapter 5, *Conclusions,* presents the overall conclusions and insights into the research through revisiting the research questions. The limitations of the research, along with recommendations for further studies are also discussed in the chapter.

CHAPTER 2

LITERATURE REVIEW

Before attempting to analyze users' in-store and online clothes shopping experiences, it is important to investigate the literature about shopping experiences in a broader view. Therefore, this chapter presents definition of shopping along with shopping channels, trends, technologies affecting it, and the effect of the COVID-19 pandemic.

As clothes shopping experience is the focus of this research, people's motivations, sensory experiences during shopping, technological advancements, user experience and its relevance to current research are examined. Lastly, the clothes shopping experience is tackled as a user journey, and users shopping journey is mapped in detail.

2.1 Shopping Activity

In its simplest form, shopping can be defined as "the activity of looking for things to buy from shops" in the Cambridge Dictionary. Throughout the history, the definition of the shops has changed as well as their appearance. For example, the first shops were bazaars or trading posts on the silk route, then they turned into brick-and-mortar shops in the neighborhood, and in today's world, they were not only physical but also online. Despite all changes, shopping activity has remained its popularity, and it is still a fundamental daily activity for people in the modern world (Karunarathna et al., 2014). In fact, as the location is no longer an advantage, the convenience of shopping has gained importance, followed by customer experience and value-added services (Sheth, 2021).

With the fast digitalization and rapid improvements in information and communications technology (ICT), the way people shop has also remarkably altered, and several shopping channels have emerged (Hsiao, 2009; Mouratidis & Papagiannakis, 2021), for example showrooming, and webrooming. In the following section, these shopping channels are presented.

2.1.1 Shopping Channels

In this study, the term shopping channel refers to any channel that serves people regarding their shopping purposes.

Purchasing items from a physical store while physically being present is expressed in several terms, such as ‘traditional shopping', ‘physical shopping', ‘physical store shopping', ‘brick-and-mortar store shopping', ‘in-store shopping', or ‘offline shopping' (Y. P. Chang & Li, 2022; Kacen et al., 2013; Punj, 2022). Although shopping from a store may be the first thing that come into mind, nowadays the channels that people shop through has considerably changed. With the help of advancements in information and communications technologies (ICT), people can now carry out their daily shopping activities from virtual means rather than physically. This new form of shopping, which can be named as e-shopping, online shopping, web-based shopping or internet shopping, frees people from visiting the stores physically (Hsiao, 2009; Mouratidis & Papagiannakis, 2021).

However, shopping does not have to be carried out through solely online or offline channels. In fact, people usually combine the benefits of both channels that results in cross-channel phenomenon (Campo & Breugelmans, 2015). The cross-channel phenomenon can be discussed under four headings: i) showrooming, ii) webrooming, and iii) cross-channel shopping.

i) Showrooming. Showrooming is defined as the practice of searching products in the physical stores, yet ultimately purchasing online (Flavián et al., 2020; Kang, 2018). Arora and Sahney (2018) point out that people's attitudes toward

showrooming are influenced by the social factors of shopping such as people's social environment and characteristics. Similarly, Arnold and Reynolds (2003) emphasize that people, who like to spend time with their friends and relatives by walking around the stores, tend to switch to a different shopping channel, especially in the purchasing stage. Therefore, seeking for social interaction through shopping can result in showrooming preference (Kang, 2018). In addition, Wolny and Charoensuksai (2014) claim that showroomers seek for product information, particularly examine the product attributes physically to minimize perceived risks against product.

ii) Webrooming. Opposite to showrooming, webrooming is described as doing an online search for products and purchasing them from physical stores (Flavián et al., 2020; Kang, 2018). The internet provides people information along with the tools for searching, choosing, comparing, and reviewing (Häubl & Trifts, 2000). Regarding this, Flavián et al. (2016) claim that after searching online and getting information about the product, webroomers can make decisions on what to purchase with a high confidence, as the information they gather reduce uncertainties. On the other hand, Walsh and Mitchell (2010) argue that information overload can cause people to feel confused and anxious as they have a limited cognitive capacity. Therefore, people may prefer to go to a physical store to ensure the information and decrease the level of uncertainty and concern. Besides, as reaching information through internet may save time and effort while searching for product information, people may prefer to search online and buy from the store (Flavián et al., 2020; Heitz-Spahn, 2013). Consequently, people may prefer to use different channels at different stages of shopping due to different drivers regarding their needs and expectations.

iii) Cross-channel shopping. During the shopping process, people may use different shopping channels to search, validate and make purchase, and this phenomenon is called cross-channel shopping (Flavián et al., 2016). As part of cross-channel shopping, multi-channel shopping refers to the use of various channels during the shopping process (Wolny & Charoensuksai, 2014). At the beginning of the 2000s, it referred to the combination of online, offline, and traditional marketing channels like catalogs (Verhoef et al., 2015).

However, with the increasing number of channels and media use in different stages of the shopping process, *multi-channel* has become a free route where the channels do not overlap. On the other hand, this increase also causes the disappearance of the borders between online and offline channels (Grewal et al., 2017). Accordingly, cross-channel shopping has started moving from multi-channel shopping to omni-channel shopping, which includes even more channels with blurred boundaries (Verhoef et al., 2015).

Nguyen et al. (2022) emphasize that *omni-channel* shopping has become popular thanks to digitalization and newly arising technologies, and it currently shapes the way of searching and purchasing. Furthermore, with the opportunity to switch between the channels, omni-channel shopping provides a seamless experience that enables people to shop anywhere and at any time (Juaneda-Ayensa et al., 2016). This seamlessness is vital particularly for omni-channel shoppers and it can be regarded as an experience-oriented concept (Chang & Li, 2022).

2.1.2 Current Trends in Shopping Channel Preferences

Cao et al. (2012) point out that the internet usage affects online shopping activities in a way that the more people become online, the more online shopping activities occur. According to Sheth (2021), online shopping has increased remarkably at 23% per year between 2012 and 2019, and it has been risen quickly due to the pandemic along with the restrictions and lockdowns. In fact, it is expected to continue to grow after the pandemic subsides.

According to the survey amongst people aged 14 and over, conducted by eMarketer (2017) between the years 2014 and 2017, the number of digital buyers is expected to raise and reach nearly 2.14 billion in 2021 (see Figure 2.1). The digital buyers are internet users who made at least one digital purchase in the recent year.

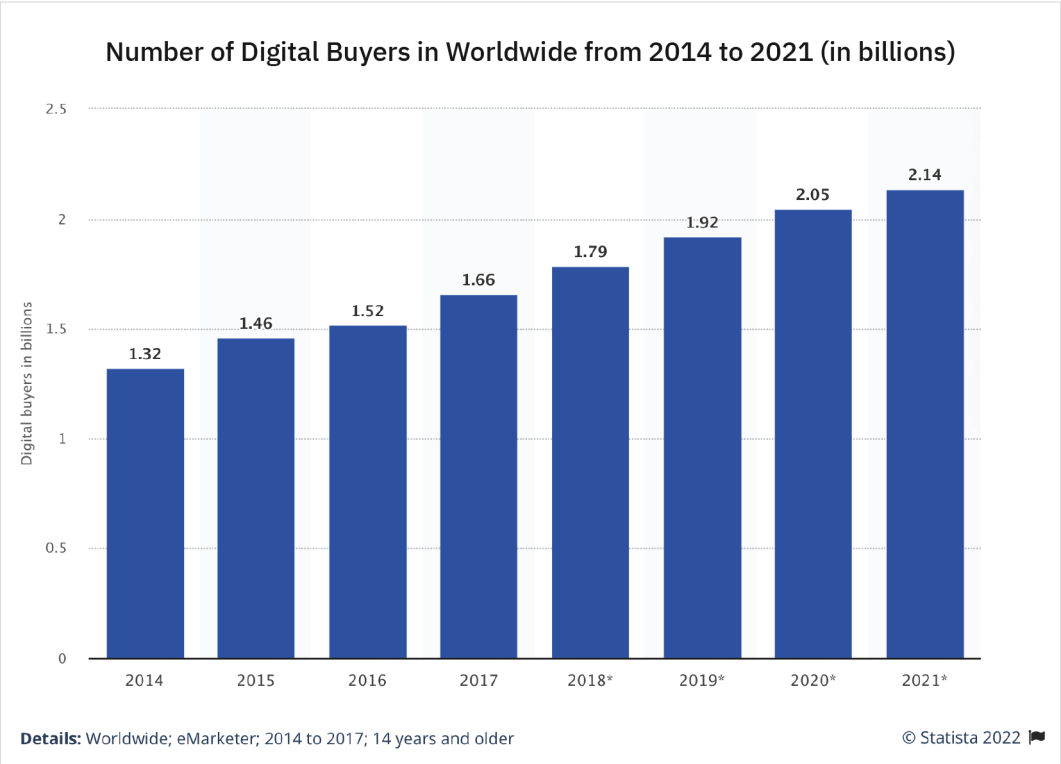


Figure 2.1 Number of digital buyers worldwide from 2014 to 2021 (in billions) (Retrieved from: https://www.statista.com/statistics/251666/number-of-digital-buyers-worldwide/)

Goyal (2021) presents a report conducted by Buildfire, and points out that 79% of people make online shopping through mobile devices. Since mobile devices enable search and review the products through many online channels (e.g, mobile apps, websites), they assist people to find what they look for (Gensler et al., 2017; Singh & Jang, 2020). However, Punj (2022) argues that assisting capability of mobile devices depends on the type and amount of information people can access, and their shopping goals. In omni-channel context, for example, people benefit from mobile devices by making search on price information to compare in different stores, and coupons opportunities to use when they are in the stores (Chang & Li, 2022).

As mentioned previously, the usage of different channels at the same time describes omni-channel shopping, and it is a popular trend. Related to this inference, Manzano et al. (2016) suggest, people's channel preference is affected by the level of touch

they need. In this regard, as suggested by Van Kerrebroeck et al. (2017), various technologies can help to overcome challenges caused by lack of haptic information.

2.1.3 Existing and Emerging Technologies in Shopping

New and more established technologies and concepts such as the Internet of things (IoT), virtual reality (VR), augmented reality (AR), mixed reality (MR), chatbots, virtual assistants and metaverse have a great impact on shaping and transforming the shopping experiences (Hoyer et al., 2020). In order to have a better understanding of how these technologies affect the shopping experience, especially clothes shopping, they will be further explained in the following sections.

Internet of Things (IoT)

Internet of Things (IoT) is described as a concept for connected objects that gather, analyze and share data with each other (Koohang et al., 2022). IoT is also considered as a technological innovation that enriches our environment in digital ways (Fagerstrøm et al., 2020). Its applications are grouped under four main categories: healthcare, transportation, personal and social, and smart environments (Atzori et al., 2010). In addition to these wide range application areas, IoT is also considered as the biggest emerging technology trend among others such as AI and robotics (Nord et al., 2019). Accordingly, the use of IoT devices dramatically increased from 8.7% to 50.1% between the years 2012 and 2018. Particularly, as one of the IoT devices, smartphones have an important impact on this increase (Bansal et al., 2021)

However, several other technologies play a role in its growth. In shopping context, for example, IoT technologies such as touchscreens in stores, smart shopping carts and mobile applications allow people to connect and take an advantage of various services provided by stores during shopping (Fagerstrøm et al., 2020). For instance, Amazon's smart shopping chart, named Dash Cart, becomes active after customers sign in the Amazon app through the QR code on the cart, and customers can place their bags and start shopping. These smart carts provide a quick grocery shopping by

allowing customers to skip checkout lines as the system in the store automatically identifies the carts through the sensors (see Figure 2.2).

Figure 2.2 Illustration of shopping trip with Amazon's Dash Cart (Retrieved from: https://www.amazon.com/b?ie=UTF8&node=21289116011)

Besides, IoT has a potential to increase social interaction and social value by providing background information about customers to salesperson in physical shopping (Hoyer et al., 2020).

In a recent study, Hoyer et al. (2020) tackle customers' shopping experience in three stages: pre-transaction, transaction, and post-transaction, and claim that IoT is particularly important for the pre-transaction stage since it provides rich information which can be used in this stage and might bring richer experiences considering the whole process.

Overall, the importance of IoT technologies is widely mentioned in the literature. It is expected to be broadly used in a variety of areas, along with the various other technologies mentioned in further sections.

Augmented Reality (AR)

Meegahapola and Perera (2017) explain AR as the digital information layered on the physical world. Hoyer et al. (2020) define it as the technology blending the real and the virtual by enabling interactive experiences in physical world through computer-generated information, which can be in the form of still images, text, moving images, etc.

AR technology is well-developed to be easily used on smartphones. Smartphones perceive the physical environment along with objects there and display augmentations of this environment (Meegahapola & Perera, 2017). AR might be used in retail, medical training, repair, design, business logistics, tourism education public safety and many other areas (Paine, 2018). For example, in entertainment industry, various AR applications can be seen. Most of them are well-known and used by people every day such as Instagram and Snapchat filters (Figure 2.3). This 'filtering' is not only considered as a feature of social media platforms; in fact, much other software requiring camera usage provides 'filters' such as Skype and Zoom (see Figure 2.4). Through the filters, users can touch-up or change their appearance and their backgrounds. For example, the filters can add makeup or users can wear clothes virtually (see Figures 2.5).

Figure 2.3 Instagram (on the left) and Snapchat filters (on the right)

Figure 2.4 People using different Zoom filters (Retrieved from: https://blog.zoom.us/filters-reactions-lighting-features-zoom-meetings-2/)

Figure 2.5 Different Snapchat filters enabling wearing clothes virtually

In shopping context, 'IKEA Place' is one of the mobile apps using AR technology (Figure 2.6). The app allows users to augment 3D models of IKEA products in the given environment. According to study conducted by Alves and Luís Reis, (2020), AR experience that IKEA Place app provide, helps users to try out the products before they purchase and to make decisions much easily.

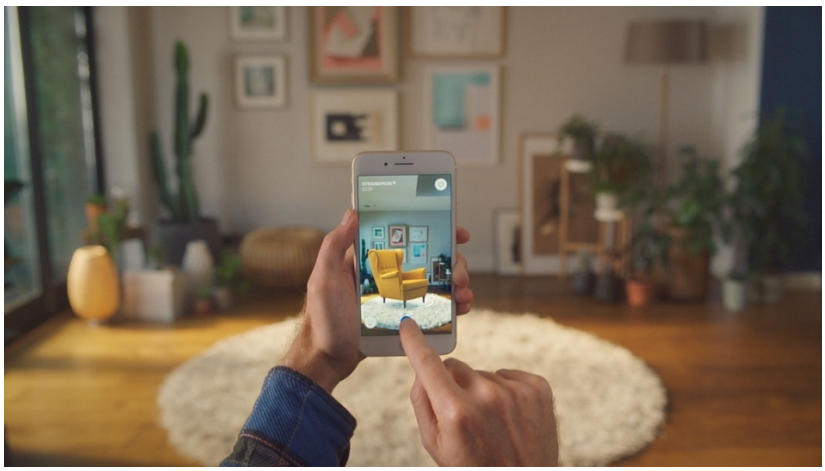


Figure 2.6 IKEA Place app example (Retrieved from: https://about.ikea.com/en/newsroom/2017/09/12/ikea-launches-ikea-place-a-new-app-that-allows-people-to-virtually-place-furniture-in-their-home)

In this way, AR applications enhance online shopping experience by bringing the in-store shopping experience to online. AR is also used for enhancing in-store shopping experiences. As Meegahapola and Perera (2017) state AR provides customers with interactive and personalized experience in the physical store. An in-store example of AR technology is Topshop's virtual fitting room (see Figure 2.7). This virtual room is created by using AR and Microsoft Kinect, technology recognizing human gestures (Bruce, 2011;Biswas & Basu, 2011). In this example, while AR allows users to select the clothes from the racks and augment clothes on themselves without actually trying them on, Kinect allows users to control virtual fitting room through hand gestures.

Figure 2.7 Topshop's virtual fitting room (Retrieved from: https://www.retail-innovation.com/topshop-in-moscow-had-a-virtual-fitting-room-on-trial)

The well-known fashion brand ZARA uses AR to bring virtual models to the physical stores around the world for two weeks, back in April 2018. To achieve this,

window displays were left empty, no clothes and no mannequins. The empty space turned into an AR display that shoppers were able to see AR projections of the real models wearing clothes (see Figure 2.8 and Figure 2.9). AR activations can be done through ZARA app, downloadable by provided Wi-Fi networks in the stores, QR codes and website of ZARA.

Figure 2.8 ZARA window display replaced with AR display (Retrieved from: https://vrscout.com/news/zara-ar-fashion-looks-stores/)

Figure 2.9 ZARA AR app usage in the physical store (Retrieved from: https://www.refinery29.com/en-us/2018/04/196382/zara-augmented-reality-app)

The AR applications still need to be improved. For example, in the fitting room concept, size of the augmented clothes is estimated quite close to users, yet the improvements are necessary for the accuracy of sizes as the sizes do not perfectly fit to the users (Chandra et al., 2018; H.-T. Chang et al., 2013).

Virtual Reality (VR)

Virtual Reality is a computer-generated environment where users can interact with and concluding real time simulation of users' senses (Guttentag, 2010). As it is seen in Figure 2.10, VR set includes head-mounted displays (HMD), 360-treadmills, and motion-tracked controllers, along with the other wearables, makes people's visions closer to reality and enhances various experiences (Zhang et al., 2014; Margetis et al., 2019). VR is actively used in areas like as education, healthcare, entertainment, research, and shopping (Flavián et al., 2019). Accordingly, Cowan and Ketron (2019) point out among all industries, shopping is considered as one of the most promising application areas for VR technology.

Figure 2.10 A person wearing VR headset (Retrieved from: https://www.blippar.com/blog/2016/05/12/whats-difference-between-virtual-reality-and-augmented-reality)

Moes and van Vliet (2017) conducted a study to understand to what extend shopping experience can be created through online materials, namely a regular photo of the store, a VR photo, and a 360-degree photo. They concluded that VR was more successful in presenting an in-store shopping experience on an online platform than others. In fact, they claimed that using VR in a world, where online shopping is becoming a trend while in-store shopping is losing its popularity, is a very reasonable step to take.

In another study analyzing feasibility of VR technologies in shopping, Purwantono et al. (2021) reported that VR technology is preferable for luxury items and furniture shopping as users expect more furniture items in online shopping and try to understand whether the item fit in their apartment or not. Accordingly, (Serrano et al., 2016) highlight that with the help of VR technology, space and time limitations of shopping environments can be solved as it provides accessibility to users at anytime and anywhere. Therefore, VR has the potential to bring more realistic and enhanced experiences in the contexts of online shopping and fashion.

Mixed Reality (MR)

Although MR is considered as an extension of AR, it blends virtual objects with the real world (Hoyer et al., 2020). From a broader view, MR combines virtual and physical worlds to create new visual environments where elements in both worlds can be interacted with in real-time (Milgram & Kishino, 1994)(see Figure 2.11). Therefore, among these technologies, MR has a unique potential to bridge the gap between offline and online environments and to provide omni-channel and ultimately seamless shopping experiences (Jain et al., 2021). According to Flavián et al. (2019), thanks to MR and wearable devices it required embodiment increases. For example, fully immersive VR equipment that includes head-mounted display (HMD) and gloves provides a sense of embodiment since these components feel like a part of users' bodies. Furthermore, Biocca (1997) states that this embodiment enables to involve human senses, so it plays an important role in providing

immersive experiences. The comparison of VR, AR, and MR can be seen in Figure 2.12.

Figure 2.11 Visualizing mixed reality with a person wearing Microsoft HoloLens (Retrieved from: https://gdmissionsystems.com/products/emerging-technologies /micro soft-hololens)

As Foster and McLelland (2015) claim people seek interactive, multi-sensory, and enhanced shopping experiences. By taking this claim into account, it can be said that MR has a great potential to be used while designing for clothes shopping experiences and services.

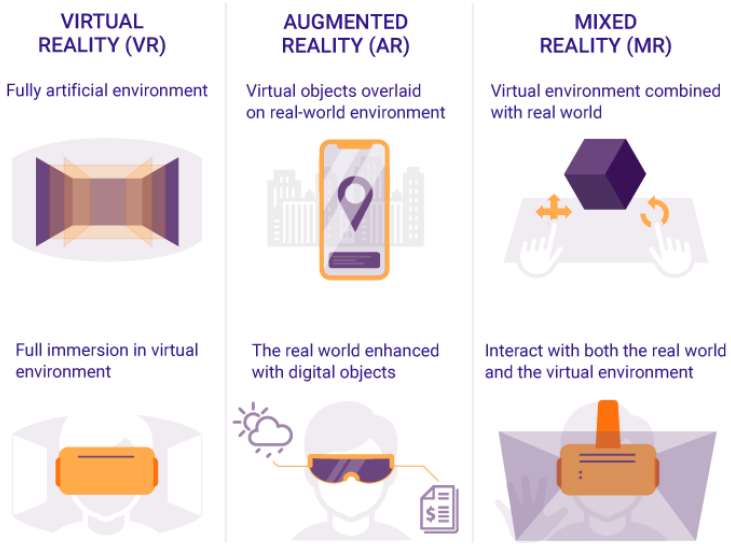


Figure 2.12 Comparison of VR, AR and MR (Retrieved from: https://rubygarage. org/blog/difference-between-ar-vr-mr)

Virtual Assistants and Chatbots

Virtual Assistants or Intelligent Personal Assistants (IPA) are computer programs that understand users' requests and accomplish the tasks accordingly (Hoyer et al., 2020). Commercially available virtual assistants that are used by wide range of people include Apple Siri, Amazon Alexa, Google Assistant and Microsoft Cortana (Lopatovska et al., 2019). Virtual assistants are integrated into laptops, and smart devices like smartphones, and smart speakers to respond to user requests through natural language processing (Adamopoulou & Moussiades, 2020).

Chatbots are a type of virtual assistants, however, they conduct text-based or voice-based conversations with users (Hoyer et al., 2020). Different from virtual assistants, they likely to answer a limited set of questions(Gupta et al., n.d.). Chatbots can be integrated into websites, support portals, mobile applications, and messaging channels. Although they become smarter, since they cannot do the human-like conversations yet, they are used in additional service programs (Tran et al., 2021).

Both Virtual assistants and chatbots are artificial intelligence (AI) powered software programs and help enhance user experiences with products and services (Shankar, 2018). In shopping context, the AI-enabled services provide relevant information in the pre-shopping phase, especially as 'recommendation agents' while searching for clothes information. Therefore, they also help to remove uncertainties about the product (Xiao & Benbasat, 2007).

Overall, virtual assistants and chatbots, as parts of shopping process, can assist users during shopping by supplying information, or guide users towards their queries.

Metaverse

As Sparkes (2021) explains, metaverse is a shared online space that involves 3D graphics on a screen or in virtual reality (see Figure 2.13). Kerry Murphy, CEO of a digital fashion house The Fabricant, suggest the following metaverse definition:

"The metaverse is just a digital layer of our lives. The metaverse will exist once everything that we do digitally is completely, seamlessly connected. The metaverse is just an extension of our physical lives into the digital realm."

To better explain this seamless connectedness, for example, in the event that people buy a sweatshirt in a metaverse, they will wear it on Facebook or Instagram, and they will have it in their AR-wearing encounter. In short, they will be all interconnected. Various activities and events can be held in the metaverse. One of the latest and popular examples is Ariana Grande concert in Fortnite metaverse (Figure 2.14). Fortnite was a simple survival game at first; then, it has turned into a metaverse-like environment. In fact, well-known fashion brand, Balenciaga, provided their unique designs to Fortnite to represent their real-world garments in the digital Balenciaga store. Likewise, another famous fashion brand Gucci opened a virtual Gucci Garden in a popular gaming platform, Roblox (see Figure 2.15).

Figure 2.13 Visualization of metaverse (Retrieved from: https://proiqra.com/what-is-metaverse-what-will-the-world-of-metawares-look-like-a-simple-understanding/)

Fashion also has played a role in improving the metaverse concept. Through non-fungible tokens (NFTs), emerging elements of metaverse allowing digital assets to be traded on the blockchain, digitally wearable clothes could be bought. Several brands, such as The Fabricant, Carlings, produces clothes that can be worn digital-

only. Besides, another brand, DressX, creates 3D clothing collections of well-known brands for the digital space (Figure 2.16). Since AI is not ready to recognize a body to try-on virtually, they decided to make 3D digital versions of clothes and ‘manually' dressing the shoppers (Roberts-Islam, 2020). Influencers wearing digital garments can be seen in Figure 2.17.

Figure 2.14 Ariana Grande concert in Fortnite metaverse (Retrieved from: https://techcrunch.com/2021/08/09/fortnite-ariana-grande-concert-metaverse/)

Figure 2.15 Gucci Garden in metaverse (Retrieved from: https://www.theverge.com/2021/5/17/22440134/gucci-garden-roblox-experience-metaverse-date)

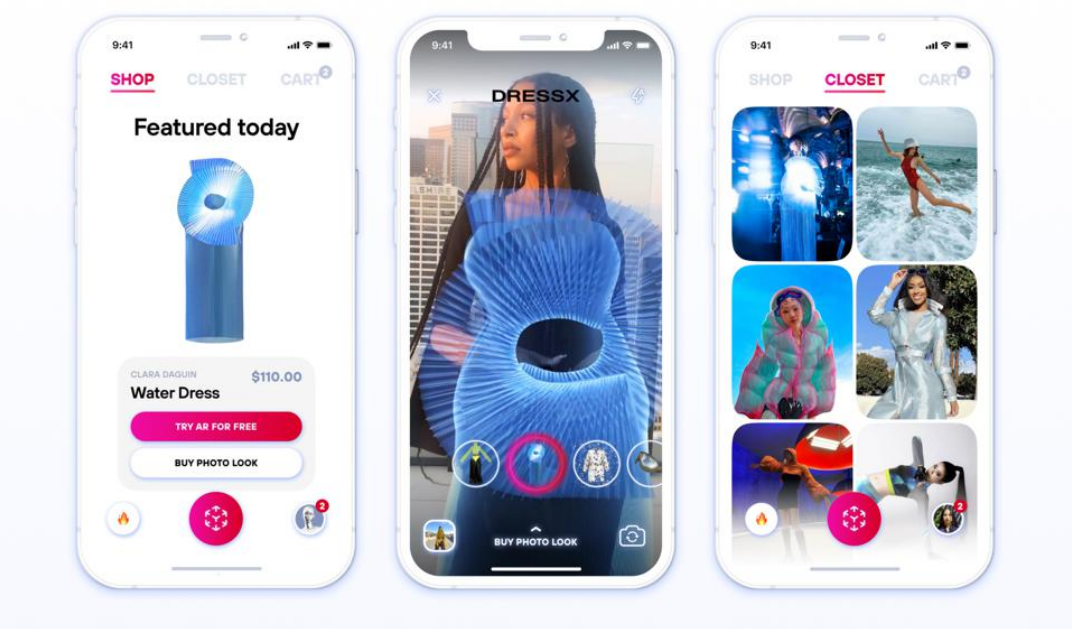


Figure 2.16 DressX app enabling to purchase, wear, store, and post digital fashion items (Retrieved from: https://www.forbes.com/sites/roxannerobinson /2021/08/25/dressx-forges-nft-partnership-with-cryptocom-and-launches-with-farfetch/)

Figure 2.17 Influencers dressed by DressX (right), the original photo on the left

As it is seen, the Metaverse brings a new dimension to digital experiences. Besides, according to the online survey conducted by Squarespace and The Harris Poll in (2021), 60% of Generation Z, and 62% of Millennials found it more important how you present yourself online than how you present yourself in real life. Therefore, it can be said that virtuality and so virtual spaces have great importance and should be considered by designers as they also have potential to enable products, services, and designs to be more creative and innovative.

2.1.3.1 Technology Acceptance

Han et al. (2020) state that even though technologies provide new opportunities for shopping activities, they are not completely embraced by people. In the rapidly digitalizing world, people's readiness level to accept new and emerging technologies has a great impact on their experiences. Hence, this section elaborates on people's technology acceptance and readiness.

Porter & Donthu, (2006) mention two research paradigms to clarify technology adaption and acceptance. The first paradigm focuses on how attributes of technology may affect the individuals' technology perception. One of the most commonly used models within this paradigm is Technology Acceptance Model (TAM) (King & He, 2006).

The second paradigm focuses on latent personality dimensions to examine the use and acceptance of emerging technologies. By following this approach, Technology Readiness Index (TRI) was generated by Parasuraman (2000). It includes four personality dimensions: optimism, innovativeness, discomfort, and insecurity. *Optimism* refers to positive thoughts towards technology and believing that technologies provide flexibility, control in their lives. *Innovativeness* refers to a tendency of being a pioneer in technology use. *Discomfort* means that having lack of control over technology or overwhelming while using it. *Insecurity* refers to feeling distrust towards technology and concerning consequences that might be

potentially harmful (Parasuraman & Colby, 2015). Therefore, while optimism and innovativeness are seen as motivators and drivers of new technology use, discomfort and insecurity are considered as inhibitors.

With the adaptation of new technologies, increase in smartphone ownership, and heavy usage of the internet particularly, people's behaviors toward shopping have also changed (Blázquez, 2014).

Accordingly, in order to have insights about their technology usage and readiness to make suggestions for future studies by considering this, it is needed to examine people's tendency to new technologies in this study.

2.1.4 Effects of the COVID-19 Pandemic

In parallel with the sudden changes brought by the COVID-19 pandemic (starting from March 2020), people have had to cope with the technological changes. The restrictions have affected how people carry out their daily activities, and the extended period of pandemic created what is called now 'new normal' (Carroll & Conboy, 2020).

To minimize the spread of the COVID-19 pandemic, restrictions and lockdowns have been imposed by governments and they directly affect people's daily lives (Erjavec & Manfreda, 2021). The fastest change is an increased use of technologies, such as web-based services enabling communicating and working from home (De' et al., 2020). Therefore, the pandemic has triggered a global adaptation of online services and activities (Eurofound, 2020; Pierce et al., 2021; Wijesooriya et al., 2020).

During the COVID-19 pandemic period, virtual mobility has been boosted with the increase in numerous online activities (Gössling, 2018; Mouratidis et al., 2021). When these online activities are examined, Mouratidis and Papagiannakis, (2021) report that online shopping has raised more modestly in comparison to online learning, telehealth, and online conferencing.

Literature review show that most studies focus on negative factors and coping behaviors of shoppers such as hoarding, panic buying, and impulse purchases (Herjanto et al., 2021; Laato et al., 2020; Prentice et al., 2020). Morever, negative states that people experience such as boredom, feeling alone or unwell have been reported because of the social distancing (Hougaard et al., 2020). As argued by Rice et al. (2020) shopping can alleviate negative situations and make people feel more connected. Regarding this, Erjavec and Manfreda, (2021) highlight the importance of examining these unique conditions which may also lead to new technologies affecting people's behaviors and adaptation to emerging technologies.

As a consequence, in the present research study the pandemic situation is taken into consideration, to examine its effects on the clothes shopping experiences of users. The users' stance towards technology, and the positive and negative impacts of the pandemic situation are taken into consideration.

2.2 User Experience

The term user experience (UX) covers all aspects of user's interactions and experiences with products, systems, or services (Norman, & Nielsen, 2016). Hassenzahl and Tractinsky (2006) point out three main factors constituting a basis for UX: *user, system*, and *context*. *User* refers to a person who has expectations, needs, motivations and uses or manipulates the system. *System* refers to a system that is required for a product under examination to work. For example, a mobile system requires a device, browser, or application to work. *Context* refers to an environment where the interactions occur. It also involves several important components: *temporal,* referring to available time for the task; *social,* describing impacts of other people's presence; *physical,* including the apparent features of the situation such as location; and *task,* referring to the possible task interruptions.

By taking a glance at the UX literature, (Hassenzahl & Tractinsky, 2006) come up with three perspectives on UX: *beyond instrumental*, focusing hedonic needs of human; *emotion and effect,* involving affective and emotional sides of the

interaction; *the experiential*, referring to situatedness and temporality of technology use. These three perspectives generate the facet of UX (see the Figure 2.18).

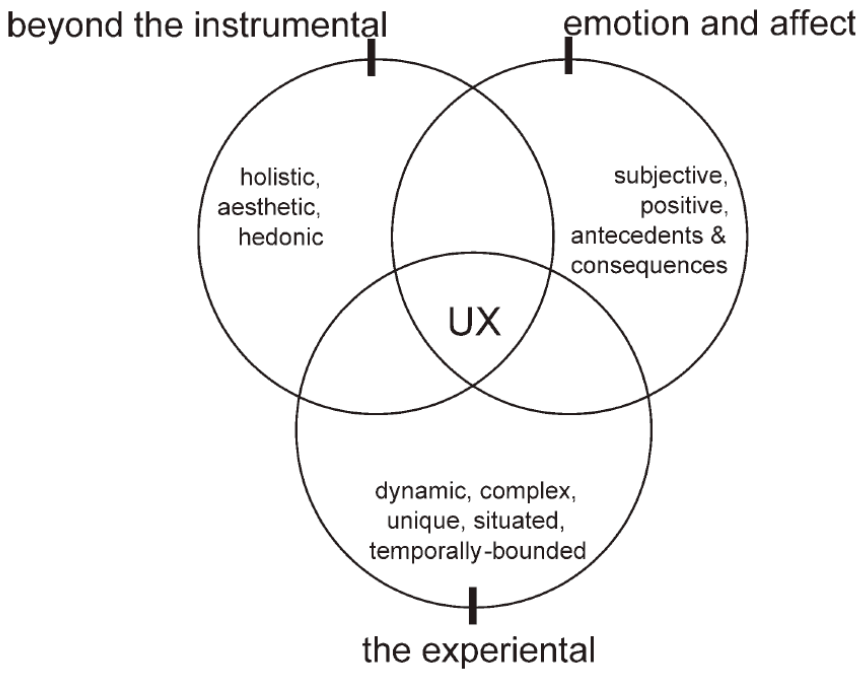


Figure 2.18 The facets of UX (Hassenzahl and Tractinsky, 2006)

UX also focuses on creating outstanding satisfying experiences instead of only preventing usability problems (Forlizzi & Battarbee, 2004; Hassenzahl & Tractinsky, 2006; Jumisko-Pyykkö et al., 2008). To design for better user experiences, user requirements including users' need, desires, expectations, and concerns about the system, are considered as starting point (Forlizzi & Battarbee, 2004). As the aim of the study is to examine clothes shopping experience, as a user experience, it is discussed regarding its definition and components subsequent section.

2.2.1 Clothes Shopping as a Multi-Sensory Experience

The present research focuses on 'user experiences' in clothes shopping particularly. In previous sections, shopping channels, current trends, and existing technologies

used in clothes shopping were introduced. As clothes shopping heavily rely on products that need to be seen, touched, felt, and tried on (Blázquez, 2014), it is necessary to look into components of the clothes shopping, especially from multi-sensory point of view. Following sections first examine clothes shopping as a multi-sensory experience, then components and factors affecting the experience are discussed.

Multi-sensory experiences occur when more than one of the senses take place in experience and affect the perception, and behavior of people (Hultén, 2011; Krishna, 2012). Clothes shopping is a multi-sensory experience involving senses, and particularly sense of touch (Duarte & Silva, 2020). Users' experience with products, as proposed by Mooy and Robben (2002), create a range of experience spectrum, from indirect to direct (see Figure 2.19). Accordingly, a direct contact with clothes and their fabric provides rich information for people, hence they can make informed choices. According to this spectrum, increase in interaction between user and product leads to increase in employing relevant senses during information processing.

The role of specific senses creating multi-sensory experiences considering people's interaction levels with the environment and the clothes are described in the following sections.

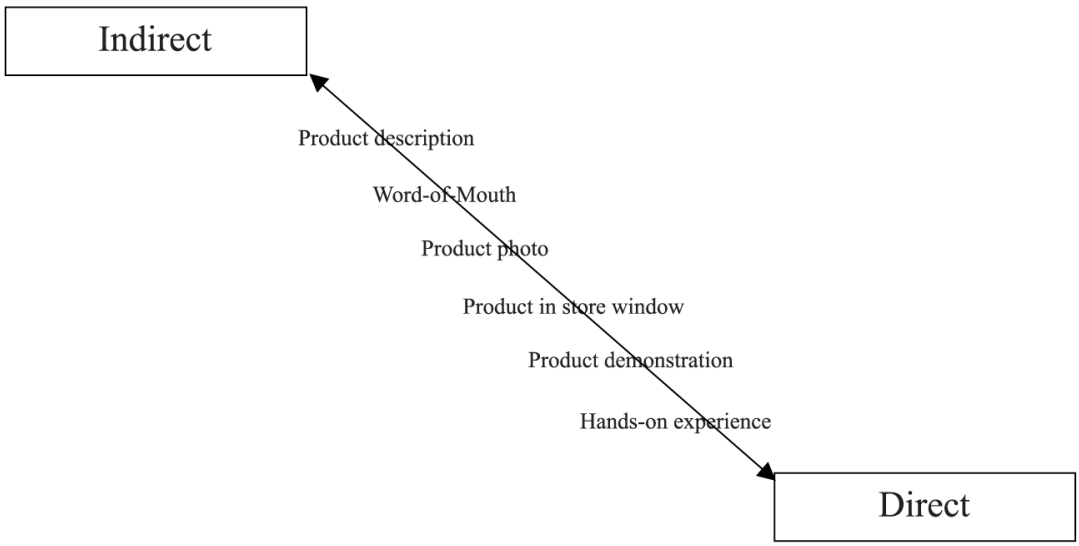


Figure 2.19 The direct experience spectrum (Mooy & Robben, 2002, p.433)

Sense of Touch

As explained by Şener & Pedgley: *"The sense of touch is central to the full experience of many everyday products. There are relatively few products that we look at, or we listen to, for which we do not physically interact."* (2021). Numerous studies have examined the relation between touch and its effect on people's attitudes toward the product (Fennis, 2012; Field, 2014; Hultén, 2011; Montagu, 1971; Peck & Wiggins, 2006; Sonneveld, 2010).

> *"Touch is a sensation of the skin and muscle, and as such can be achieved all over the body. ... touch comprises the discrimination of multiple tactual qualities of things, including softness, texture, and temperature."* (Şener & Pedgley, 2021)

In relation to above description, when the sense of touch is considered as a part of the clothes shopping experience, need for touch appears as an important issue, especially to feel the tactual qualities of the fabric and other materials that clothes made of Need For Touch (NFT) is defined as "a preference for the extraction and utilization of information obtained through the haptic system" (Peck & Childers, 2003, p. 431). NFT is considered as a key element for determination and evaluation by many researchers (Peck & Childers, 2003; Rejón-Guardia & Luna-Nevarez, 2017). While Nguyen et al. (2022) claim that this need emerges from the lack of physical information about the product, Peck and Childers (2003) name this need of getting information about physical attributes as instrumental NFT, and introduce autotelic NFT, which also includes pleasurable emotions bringing along direct contact with the products. Regarding instrumental NFT, Duarte and Silva (2020) highlight that although online shopping offers various benefits, people still have difficulties caused by not being able to evaluate product features physically. It shows the significance of sense of touch in product evaluation (Abhishek, 2016).

In a study by Peck et al. (2013), it is assumed that 'perceived touch' as a form of haptic imagery may simulate the physical touch. In other words, haptic imagery may serve as a surrogate the sense of touch. Furthermore, several studies in literature

shows that haptic imagery, which can be given through verbal haptic descriptions, photographs, haptic technologies, and multi-media like animation, 3-D visualization, zoom, or rotation is associated to perception of the product in a positive way (Rodrigues et al., 2017).

Sense of Sight

> *"In our daily interactions with products, the conventional product evaluation process for people with no sensory impairment is for visual experience to take the lead, shortly followed by tactual and other multisensory experience as interaction takes place. Vision is dominant in human information processing and cognition ... it is therefore no surprise that the visual domain of product design is at the forefront of designers' decision-making." (Şener & Pedgley, 2021).*

Lindstrom (2005) states that sight is the most seductive human sense. Besides its importance, it is also the most dominant sense since it allows us to perceive the environment (Valberg, 2005); Schiffman, 2001). In the context of shopping, the sense of sight allows us to perceive color, texture, style, material information of clothes, as well as other visual stimuli that may be associated with the environment (e.g., lighting) and product (e.g., brand information, packaging) and it affects people's mood state (Healy et al., 2007; Soars, 2009).

Sense of Smell

Among the human senses, smell is the closest related to emotions as the olfactory system of the human brain detects odors and sends signals that are linked to emotions and memories (Soars, 2009). Some researchers argue that since smell evokes memories, and emotions quicker than other senses, it is the most powerful sense (Schmitt et al, 1997; Krishna, 2010). However, Gobe (2001) and Soars (2009) point out that it is not utilized in fashion shopping effectively.

In research of Alexander and Nobbs (2016), strong scent of plastic in the store is perceived as undesired and linked with 'cheapness', and leaves a negative impression

on people. On the other hand, luxury fashion stores mostly made a positive impression on participants in terms of smell, as they smell of perfumes.

As explained by Şener-Pedgley:

> *"Some shops really stay in my mind with their smell. For example YARGICI [women's clothes and acessories shop], whichever branch you visit, it smells the same. It is quite powerful for creating a brand image. Similarly, smell can affect my purchase decisions in a positive or negative way. Some clothes fabric can be very attractive due to its fresh smell, or I might be put off by the strong smell of leather. Surely, though it is very subjective."* (2022)

Sense of Sound

Sound is psychologically communicated through feelings and therefore affects emotions (Rösing, Oerter & Bruhn, 2002). Music has a positive effect on the store atmosphere, and people. Also, it helps to evoke memories and creates relations (Morrison, 2002; Hultén, 2011).

However, in a study by Alexander and Nobbs (2016), it is found that while 'too loud' and 'fast-paced speed' music in stores distracts people and evokes negative feelings, 'low and gentle' music relaxes them and make them walk around the store in peace. Supporting this finding, Soars (2009) highlights that music may affect the choices of shoppers.

2.2.2 Shopping Companion

Shopping is considered as a social experience that people go alone or with a companion. Regarding this, recent studies have shown that shopping with someone may enhance overall shopping experience by experience sharing, support and assistance of a companion (Borges et al., 2010).

According to Wenzel and Benkenstein's study (2018) conducted with adolescents, receiving valuable information from friends they seem as more knowledgeable make them more confident while shopping. Besides gaining information and assisting,

Borges et al. (2010) state that shopping with friends make people feel comfortable and enjoy during shopping, which may lead to satisfy whole experience. As also mentioned previously, social interaction seekers tend to prefer showrooming, which means going to store to spend enjoyable time with their friends, and relatives.

On the other hand, accompanied shopping may include the pressure of meeting expectation of someone else, so it may cause role conflict for shoppers (Otnes et al., 1997). Moreover, presence of someone else may reduce people's attention on the task they want to perform (Baron et al., 1996). In any cases, it can be said that shopping with a companion affects people's experiences.

Considering the components mentioned in the context of the clothes shopping experience, it can be inferred that it is needed to investigate the factors affecting users' clothes shopping experiences. Therefore, it was decided to explore the factors impacting the experience further through field study by using a journey map.

2.2.3 Customer Journey Map

The term ‘customer journey' is used in various disciplines, and it is a significant concept for understanding people's behavior and gaining insights about their experiences (Tueanrat et al., 2021). The term refers to the whole experience a customer goes through while interacting with a brand, and the Customer Journey Map (CJM) is a step-by-step visual representation of this journey (Marquez et al., 2015; Stickdorn and Schneider, 2011). In other words, the CJM illustrates the customer's journey from the beginning to the end, highlights several stages, and points of contacts (i.e., touchpoints) that a customer interacts with the products and services (Alves et al., 2012; Tueanrat et al., 2021).

Although the CJM is commonly used in service design to represent customers' experiences with a service (Marquez et al., 2015; Tueanrat et al., 2021), it is also used in User Experience (UX) field to understand and analyze experiences from the user point of view (Mangiaracina & Perego, 2009). In marketing and service design,

it is called 'Customer Journey Map' since it is a visual story of the customers' interactions and touchpoints with a certain brand; whereas in product design it is referred to as 'User Journey Map' as it documents the users' interactions and touchpoints with a certain product. In both cases, it is common to illustrate where customers/users 'pain points' are (i.e., the difficulties that they experience whilst interacting with a brand and/or product) as well as their feelings and emotions in respond to those situations.

As Marquez et al. (2015) point out, mapping the process can help to get valuable insights into how it is like to walk in users' shoes, and enables to design of new services that fulfill users' expectations. Accordingly, for this research it was decided that CJM will be useful for documenting the participants' clothes shopping experiences as a process.

There is no fixed style for CJMs as they can be designed based on the aim and scope of the projects (Moon et al., 2016). The customer journey map examples can be seen in Figures 2.20 and 2.21.

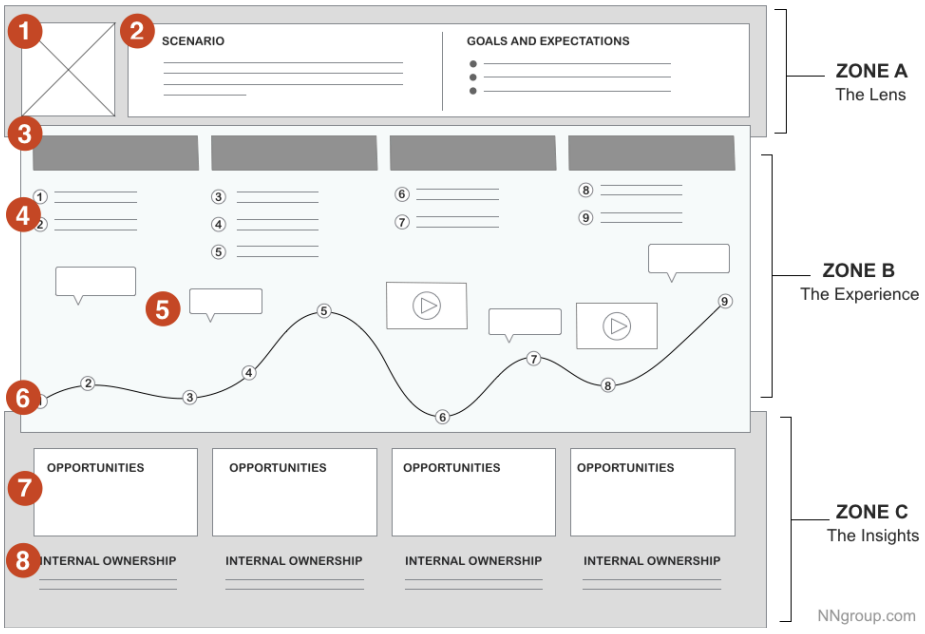


Figure 2.20 Customer journey map sample by Miro (Retrieved from: https://miro.com/templates/customer-journey-map/)

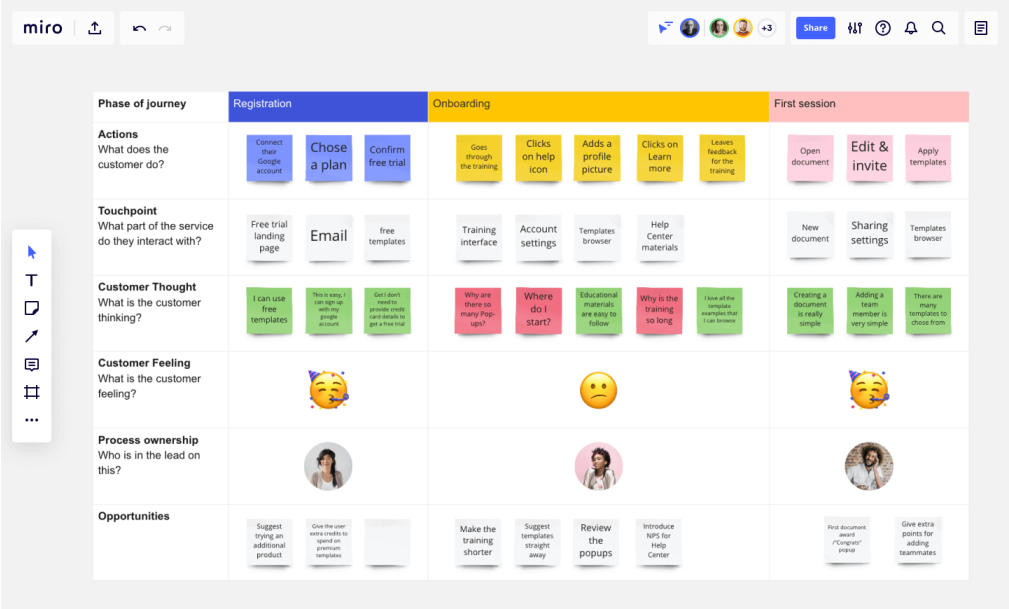


Figure 2.21 Customer journey map sample by Miro (Retrieved from: https://miro.com/templates/customer-journey-map/)

Although various styles can be used, as Richardson (2010) indicates a CJM should contain four components: actions, motivations, questions, and barriers.

- *Actions* refer to a customer's actions at each stage (touchpoints).
- *Motivations* refer to reasons that keep a user motivated, and emotions they feel.
- *Questions* refer to uncertainties, and issues that prevent a user from moving to further stage.
- *Barriers* refer to barriers preventing a user to moving on, related to process, implementation, or cost.

Besides this framework, Richardson (2010) also suggests that to design a CJM, these components should be collected by customer research, including in-depth ethnographic style interviews.

CJM also helps to map the alterations in users' needs, satisfaction with the product and system while doing a task and linked them with actions of users during the

journey (Howard, n.d.). Moon et al. (2016) point out that CJM can be used to develop new strategies to enhance existing services, and to design new ones.

In the shopping context, a well-designed journey map should provide all interactions and activities and merge them seamlessly to create a holistic and unique experience at the end (Terblanche & Kidd, 2021).

In the light of the information presented above, a user journey mapping approach is taken in this research to understand and analyze user experiences in clothes shopping from a broader view. In addition, a CJM combining various aspects of existing ones is created for this research (see Section 3.4.2.1).

CHAPTER 3

METHODOLOGY

This chapter focuses on the fieldwork methodology and examining how clothes shopping changes considering user interactions. Accordingly, the phases of the fieldwork, participant sampling, and data collection tools and methods are described.

3.1 Introduction

As articulated in the literature review chapter, shopping is an experience that occurs through different channels and therefore includes multiple user interactions with physical spaces and devices. These channels and type of user interactions can be used for categorizing shopping processes. Within this scope, it is possible to mention four main trends: webrooming (i.e., online-to-store), showrooming (i.e., store-to-online), online, and in-store shopping.

When clothes shopping is considered, people may shop for clothes using multiple 'channels', for example mobile applications, social media, and physical stores, and 'mediums' to reach to those channels by using for example paper-catalogs, laptops, smartphones. The simultaneous usage of channels is called "omni-channel shopping" (Kang, 2018), which brings different interactions. For example, people may see clothes on social media, search for them and read comments on mobile apps, and after trying them on by going to physical stores and looking their prices online, they may purchase clothes from online websites. However, as it is seen in literature, the studies on shopping experience are insufficient to define problem areas and potential opportunities along with the actions and interactions in the clothes shopping process for both in online and in-store context. Therefore, it is aimed to examine this process to have a better understanding of the experience and explore the constraints and opportunities leading to possible interactions during the process.

Along with these purposes, it is decided to set up fieldwork to explore individuals' current clothes shopping experiences considering the interactions with the physical environment and usage of digital devices and find-out experience breakdowns and potential opportunities that may lead designers to enhance this experience.

3.2 Overview of the Fieldwork

As the fieldwork is carried out during the COVID-19 pandemic (May – August 2021), besides exploring possible problem areas in the clothes shopping process and potential opportunities of the clothes shopping experience, it is also aimed to investigate how the pandemic has affected this experience, including restrictions and prohibitions that may have altered the shopping process. Accordingly, a fieldwork consisting of two phases was designed.

In Phase 1, a three-part questionnaire was administered to collect the participants' demographic information, to identify their technology readiness level, and to understand their clothes shopping experience in general along with their preferred shopping mediums and channels.

In Phase 2, semi-structured interviews were conducted to gain insights into preferences of the participants for clothes shopping and to understand their needs and expectations by mapping out this experience as a journey highlighting pain points that they might have encountered. The overview diagram illustrating the phases of the fieldwork can be seen in Figure 3.1.

3.3 Participant Sampling

The fieldwork targeted at the participants fulfilling the following criteria: young adults with ages ranging between 18 and 40; having internet access and payment facilities for shopping online as well as previous online shopping experience; and, having no physical/mental limitation to shop in the store. For this research, the young

adults were chosen as a generation since they are familiar with and regularly use online tools.

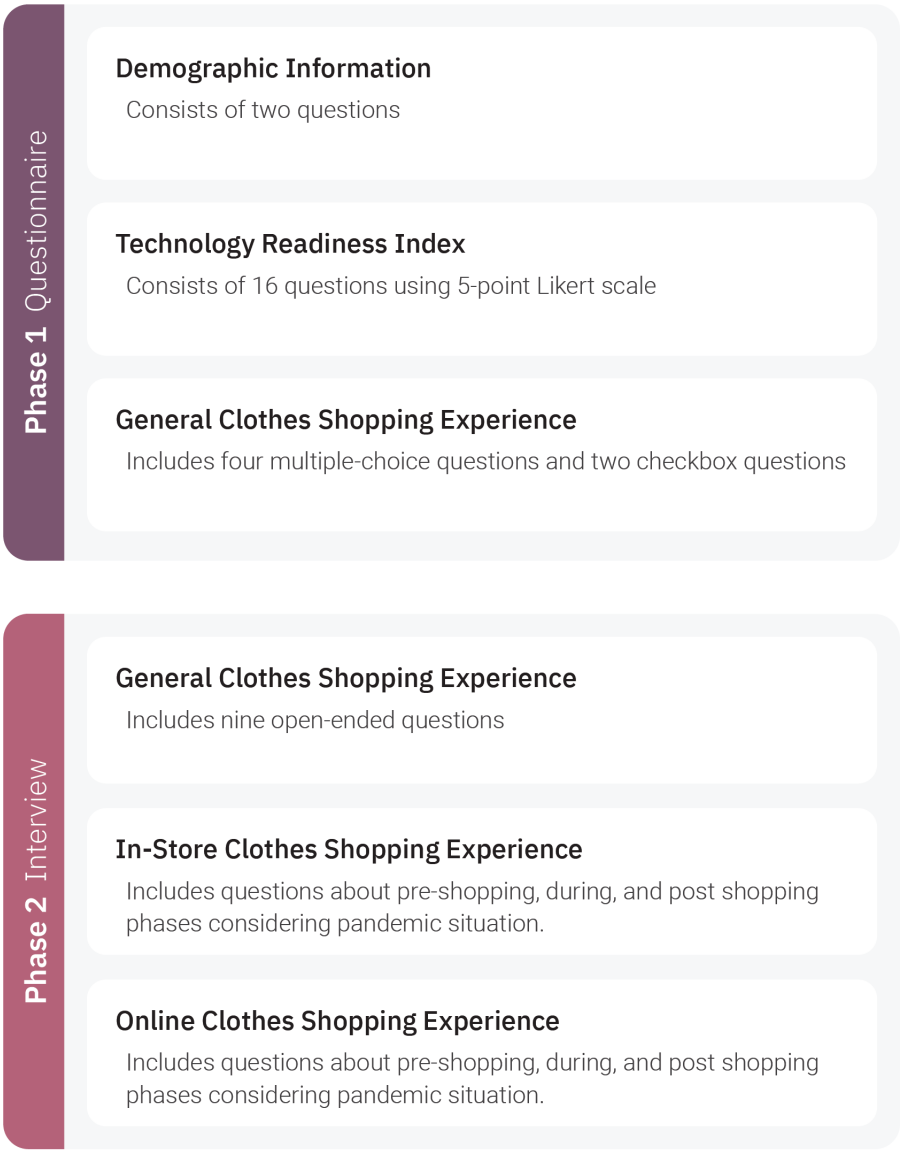


Figure 3.1 Overview diagram of the fieldwork phases

To reach to potential candidates, a digital poster announcement was distributed through the researcher's personal social media accounts (i.e., Instagram and Facebook). The poster included information about the researcher, the requirements for participating in the study, and expectations from participants (see Figure 3.2).

Candidates willing to participate were contacted through their preferred communication channel (e.g., phone, e-mail).

Figure 3.2 Announcement poster

After completing the online questionnaire, which consists of 24 questions, participants are invited to join to the second stage of the study, the interview. In the selection process, whether the participants had both online and in-store clothes shopping experiences were taken into account.

3.4 Data Collection Methods and Tools

Considering the global rise in shopping in general (Sebald & Jacob, 2020), clothes shopping along with the shopping channels and mediums have increased, which the fieldwork aims to explore. The customers' preferences for shopping channels and mediums generate certain pre-shopping and post-shopping experiences, and therefore, they can be used to describe and classify the shopping experience itself. In addition, in the online context, it is important to understand how well people are

adapted to existing technologies and how ready they are for new technologies in order to be able to evaluate their shopping experiences holistically.

To discover people's clothes shopping channel and medium preferences, and to reflect on their experiences and considerations behind their choices, an online questionnaire was prepared. Apart from questioning general clothes shopping experiences, the questionnaire also included 16-question Technology Readiness Index 2.0 (Parasuraman & Colby, 2015), to measure the participants' technology readiness levels, in other words, their tendency to embrace and use the new technologies to achieve their goals (Parasuraman, 2000).

As understanding people's needs and expectations, gaining in-depth knowledge about their clothes shopping experiences, and exploring opportunities that would enhance their experiences have quite an importance, in the second phase of the fieldwork, it was decided to conduct interviews along with qualitative questions. Different from quantitative research questions, qualitative research questions provide descriptive data which allow researchers to gain a deeper understanding of users' needs and expectations (Begay, Lee, Martin & Ray, 2004).

Consequently, in the first phase of the fieldwork, it is planned to employ an online questionnaire including TRI, and in the second phase, semi-structured interviews to comprehensively examine the current clothes shopping experiences of people. Details are presented in the following sections.

3.4.1 Online Questionnaire

As the first stage of the fieldwork, an online questionnaire, prepared in Google Forms, will be administered. The questionnaire includes 24 questions (see Appendix A and B for Turkish and English versions) in total: i) 2 questions about demographic information ii) 16 questions of Technology Readiness Index (TRI), and iii) 6 questions related to general clothes shopping experience. It starts with participant consent form and proceeds with gathering of demographic information.

3.4.1.1 Technology Readiness Index (TRI)

The TRI is a multiple-item scale, and the original version, TRI 1.0, includes 36 items, involving 10 items for optimism, 10 for discomfort, 9 for insecurity, and 7 for innovativeness. The updated and streamlined version of TRI, called TRI 2.0, was used for this research. Different from the TRI 1.0, the TRI 2.0 contains 16 items in total, 4 items for each theme, and 5 new items. Each item includes a 5-point Likert scale (1 – strongly disagree, 2 – disagree, 3 – neither agree nor disagree, 4 – agree, 5 – strongly agree). The original language of the TRI was in English; therefore, the TRI was translated into Turkish as the research will be conducted in Turkish and used (see Appendix A and B for Turkish and English versions).

3.4.1.2 General Clothes Shopping Experience

As the fieldwork aims to reveal in which ways and through which mediums people shop for clothes before and during COVID-19 pandemic, the online questionnaire includes general clothes shopping questions (see Appendix A and B to see all questions).

Although TRI questions were in multiple question format, in this stage, it is needed to understand all possible answers of participants. Therefore, different types of questions will be prepared. For instance, participants may prefer more than one channel to shop for clothes, including different pre-shopping actions, particularly in terms of searching for clothes. Accordingly, the questions asking to indicate all shopping channels participants use for clothes shopping and their actions/habits before shopping are required checkbox format.

3.4.2 Interviews

In order to gain in-depth knowledge (Demarrais & Lapan, 2003.), from participants about their online and in-store clothes shopping experiences, interviews are chosen

as a data collection method. Rubin and Rubin (2011) state that semi-structured interviews are a great way to understand users, including their perspectives, assumptions, expectations, and frustrations. For this study, gaining insights from the participants about their clothes shopping experiences along with their disappointments, problems, expectations, and satisfactions were necessary. Therefore, in the second phase of the fieldwork, one-to-one semi-structured interviews with open ended questions are carried out to reach more detailed information about the participants' shopping experiences. In this research, the clothes shopping experience is tackled as a process, so it is considered to have three stages: before, during, and after shopping. Additionally, in order to take the COVID-19 pandemic's limiting situation into account, both in-store and online clothes shopping experiences are divided into two as: before, and during pandemic.

The interview questions are divided into three parts: i) general clothes shopping experience, ii) online clothes shopping experience, and iii) in-store clothes shopping experience (see Appendix E). Each part is presented as a digital board in the selected platform, Miro (see Section 3.5), and the layout can be seen in Figure 3.3.

First part included nine open-ended questions and more detailed versions of the online questionnaire, organized in a way to also include the participants' feelings about their experiences. In the second and third parts of the interview, the participants' physical store and online clothes shopping experiences are examined in three sections: pre –, during–, and post– shopping. The changes before and during the pandemic are also questioned.

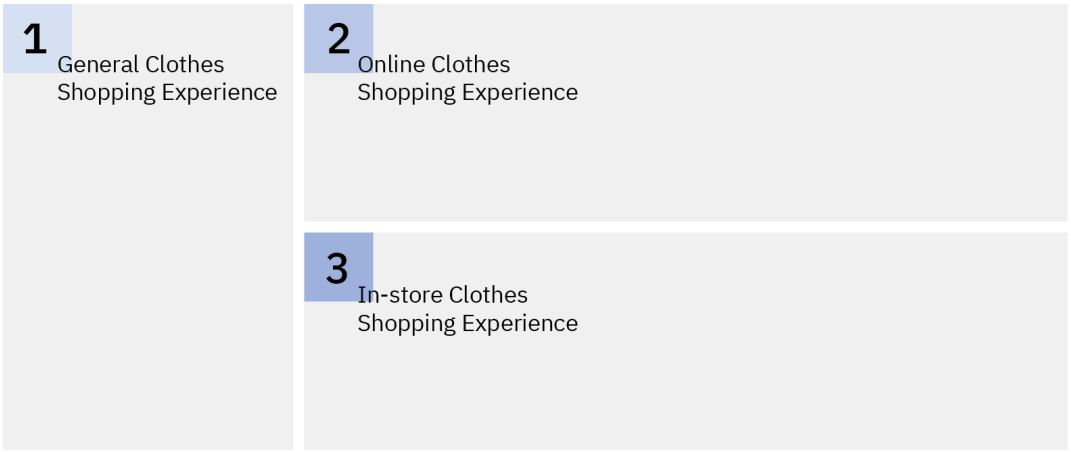


Figure 3.3 Layout of the Miro board

3.4.2.1 Customer Journey Map (CJM)

During the interviews, a designed template of 'customer journey map' is used as a tool to facilitate information gathering from the participants and to encourage them reflecting on various stages and aspects of the shopping process. The template can be seen in Figure 3.4.

In this research, clothes shopping experience is represented in three stages in CJM to reflect the pre-shopping, during-shopping, and post-shopping experiences of the participants on two separate templates: 'Online Shopping' and 'In-store Shopping'. Each of the stages includes the reflection section for the interviewees. For example, in 'In-store Clothing Shopping' context, 'Pre-Shopping' stage includes reflection sections on *inspiration, search for store,* and *companion.* Similarly, 'During shopping' stage includes *search in-store, choice, comparison, decision,* and *payment*; and 'Post-shopping' stage includes *social activities, wearing* and *dissatisfaction* (see Figure 3.4). These stages included on the CJM are gathered by the researcher based on personal experiences and literature findings. It was believed that the headings would be useful to define touchpoints, and reflect on the pain point of the participants' experiences. On the completion of the pilot study (see Section 3.9), each heading was reviewed, and the map was revised for further sessions (see Figure 3.4).

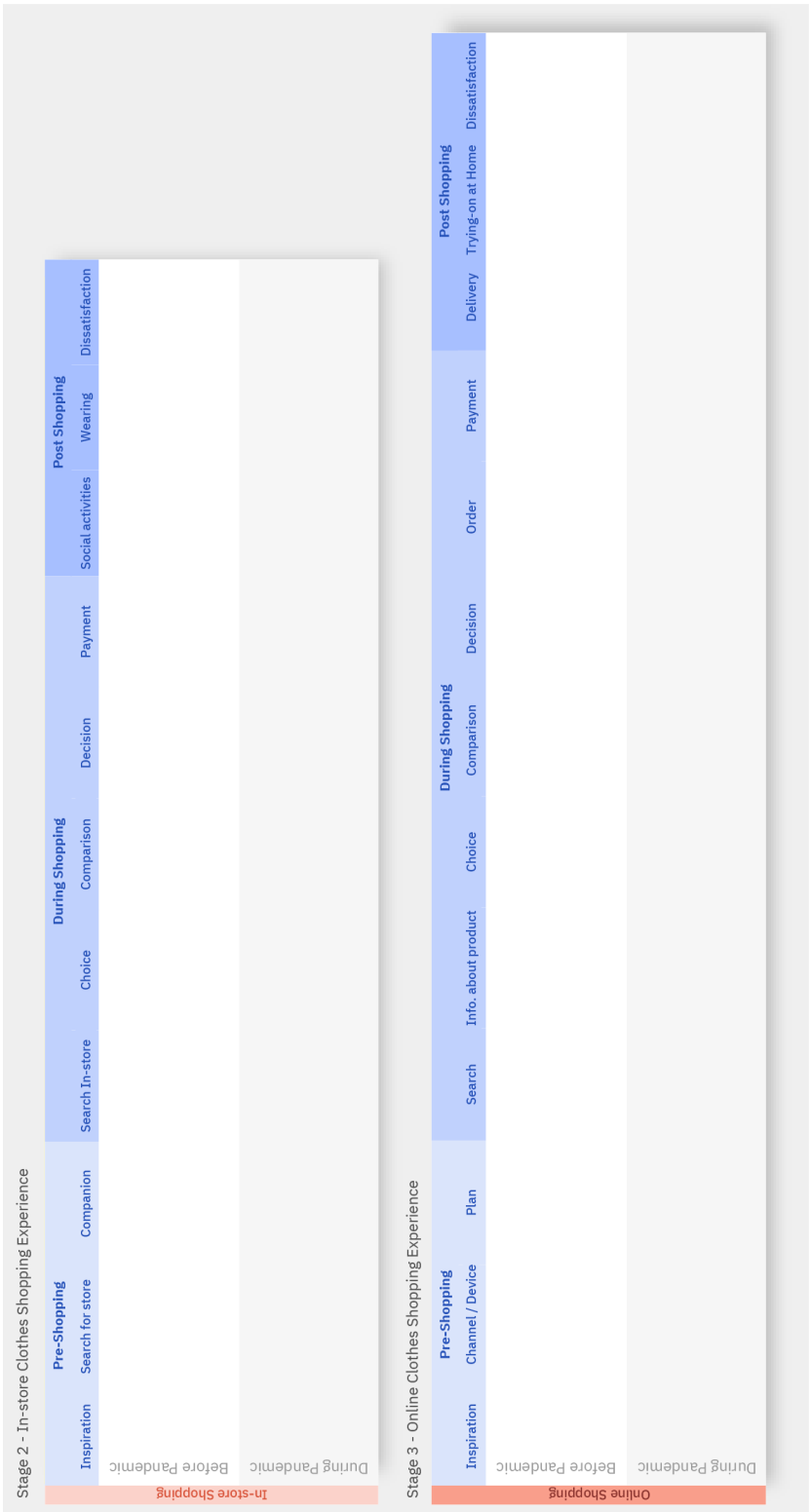


Figure 3.4 ‘Customer Journey Map' for in-store and online shopping used in the fieldwork

3.5 Venue and Equipment

The interview sessions are planned to be face-to-face, however after the announcement of the COVID-19 pandemic, due to social gathering restrictions, it was decided to switch to online meetings using Zoom Video Conferencing platform (Zoom Video Communications, Inc.), as the researcher had an institutional access and familiarity with the tool. The interview questions are organized in the form of two different Customer Journey Map (see Section 3.4.2.1) templates prepared digitally in Miro: Online Whiteboard & Visual Collaboration Platform to be screen-shared with the participants during the interview sessions via Zoom. Miro's in-built post-it note feature is also planned to be used to make it easier for the participants to follow the questions and increase their involvement by giving them option to add/type their own notes. An example screenshot of Miro board used in interviews can be seen in Figure 3.5. Interviews are recorded on Zoom as voice-recording, and the researcher's voice recorder on smartphone simultaneously.

3.6 Interview Procedure

In ‘Phase 1: Questionnaire' of the fieldwork, prior to filling in the questionnaire, the participants are informed about the purpose of the study and asked to read and confirm the consent form on the computer screen that asks whether the participants accept to participate in this study voluntarily and give consent for their contributions to be used anonymously for research purposes (Appendix C). On the completion of the questionnaire, the participants are thanked and asked whether they would be interested in taking part in the ‘Phase 2: Interview' of the fieldwork. As part of the interviews are run under the COVID-19 restrictions, some of them are carried out face-to-face and some online, therefore the procedure revised accordingly. The following procedure was taken.

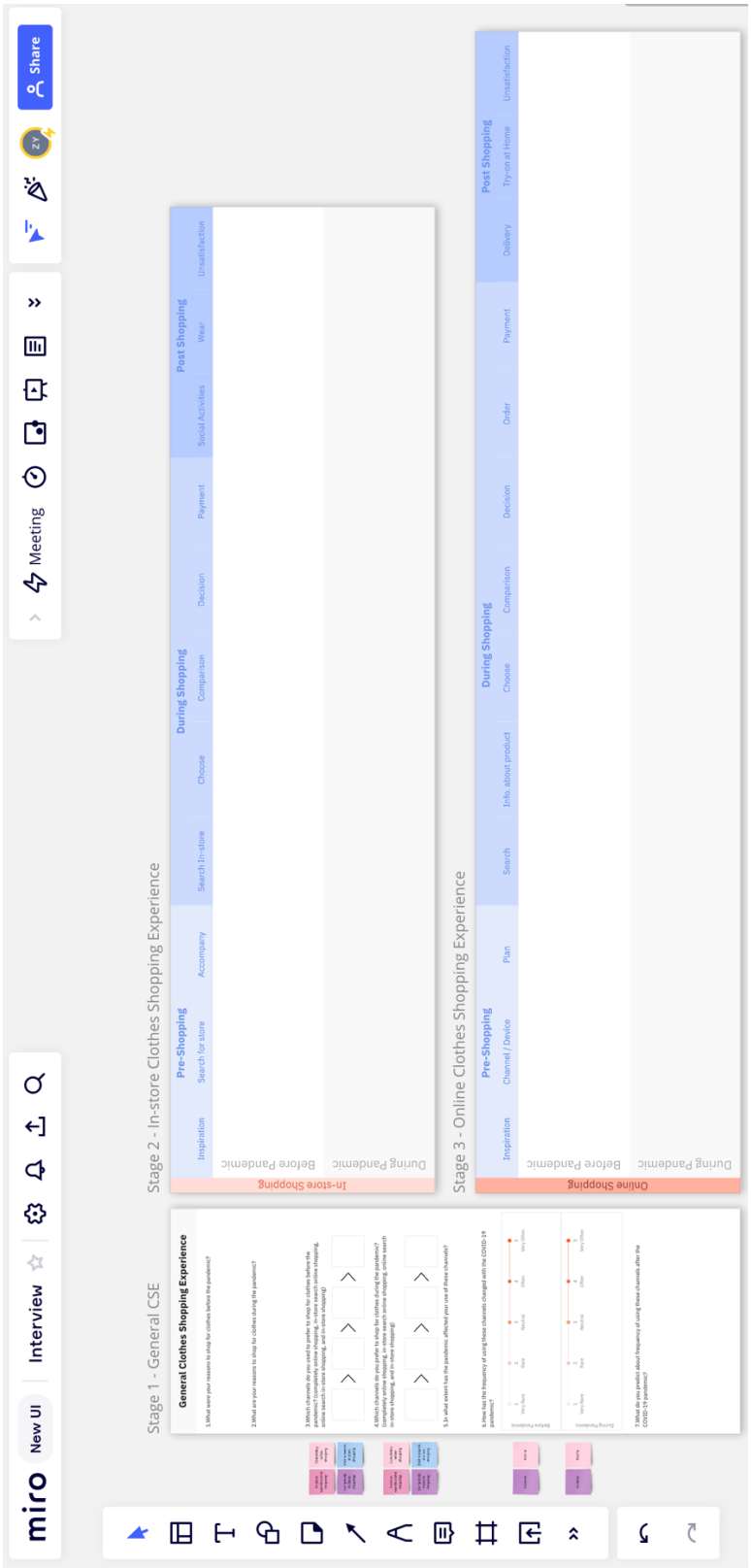


Figure 3.5 A screenshot from Miro board created for the interview stage

Participants are asked to indicate their availability through a shared Doodle in order to arrange the meeting time. While meeting place is also needed to arrange for the face-to-face interviews, the Zoom meeting link is sent to online interview participants' contact addresses. Before starting the interviews, participants are asked to fill the consent form that is sent participants digitally (see Appendix C) and be informed about the tool to be used and the interview process, which will be held in three stages. After the researcher introduces the Miro and its in-built post-it note feature, ask participants to write their answers during the interview.

3.7 Data Analysis Tools

The fieldwork analysis will be carried out with combination of qualitative and quantitative analysis methods. In Phase 1 (Questionnaire), quantitative analysis will be carried out to evaluate the participants' technology readiness using 5-point Likert Scale as in TRI 2.0 (Parasuraman & Colby, 2015). Following this, the quantitative analysis of the last six questions in the questionnaire will be performed.

For analyzing the qualitative data of the interviews, the general inductive approach will be followed as it provides a systematic set of procedures to produce findings (Thomas, 2006). The first step will be transcribing interview recordings into Microsoft Word documents. The raw text data will be transferred to Airtable, an online spreadsheet-database hybrid platform for creating relational databases, regarding interview questions, and core meanings in the text relevant to research objectives will be identified as phrases. In order to cluster raw data into certain headings, they will be content analyzed.

3.8 Ethical Considerations

Necessary approvals for carrying out the fieldwork was obtained from the Middle East Technical University, Applied Ethics Research Center with the application no. 142-ODTU-2021 (see Appendix F).

3.9 Pilot Study

In order to confirm the operation of the fieldwork phases and make necessary changes, a pilot study was carried out with two participants (one male one female) who responded to invitation positively. The procedure was followed as described in Section 3.6. Initially, the participants were asked to complete the questionnaire. One of them completed it on the desktop computer and the other one on a mobile phone.

At this stage, clarity and comprehensibility of the questionnaire were checked. Then, one-to-one interview sessions were carried out to check whether the duration was sufficient and whether the questions were clear. On the completion of the two pilot sessions, some minor changes were implemented. For example, some expressions in the Turkish version of the TRI in the Questionnaire were revised to be clearer for the participants.

During the interviews, it was noticed that both participants had difficulty expressing their preferences about in which ways they shop for clothes in general. In order to facilitate the conversation and to better understand their preferences, a set consisting of four cards representing the shopping channels was created: i) searching in the store and buying online, ii) searching and buying from the store, iii) searching and buying online, and iii) searching online and buying from the store. In the following session, participants were asked to sort these cards depending on their frequency of use (Figure 3.6).

When participants were asked to indicate the changes in the frequency of using these channels, they preferred to give different numerical values to each channel preference to compare. Instead of these unstandardized numerical values, using a scale would make it possible to evaluate the results in a certain standard. Therefore, the questions were modified using a 5-point Likert scale.

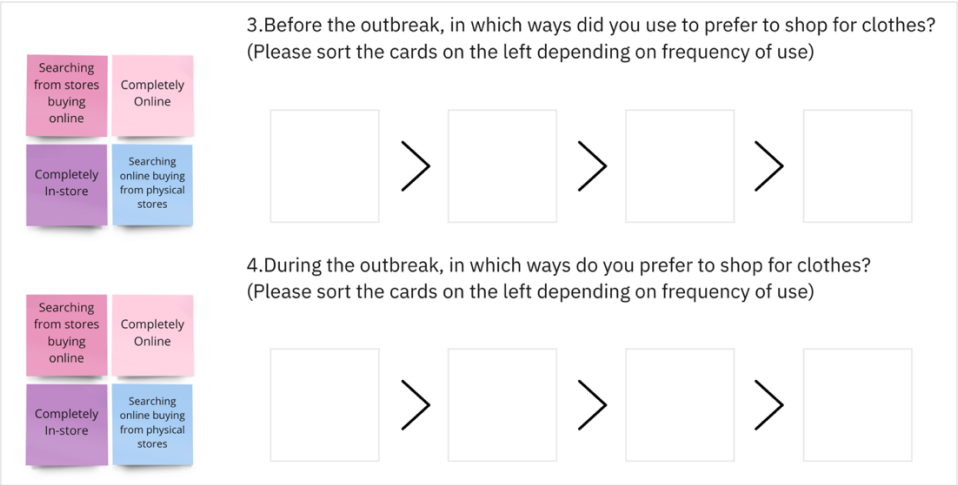


Figure 3.6 Screenshot of the updated version of four cards representing the shopping channels

Also, some minor revisions were made in the wording of sub-steps of the shopping to better assist the participants in recalling their experiences. The version implemented in the pilot study along with the future revisions can be seen in Figure 3.7. The study procedure did not change, and since the minor revisions did not have an effect on the results the pilot study is combined and analyzed with the remainder of the sessions.

Figure 3.7 Clothes shopping experience stages with revisions after pilot study

CHAPTER 4

RESULTS AND ANALYSIS OF THE FIELDWORK

4.1 Introduction

This chapter presents the results and analysis of the fieldwork followed by related discussions. As the fieldwork consists of two main phases, ‘Phase 1: Questionnaire' and ‘Phase 2: Interviews', the results and analysis of each of the phases will be introduced separately.

4.2 Results and Analysis of the ‘Phase 1: Questionnaire'

In Phase 1, a three-part online questionnaire (see Appendix A and B) was carried out to get demographic information of the participants, to identify their technology readiness level, and to examine their clothes shopping experience in general along with their preferred shopping mediums and channels.

4.2.1 Demographic Information

In total, 136 people filled in the questionnaire. The results are analyzed in three parts. As the first and second parts comprised multiple selection questions providing quantitative data, those parts are analyzed through Microsoft Excel, by using provided formula functions.

The study aimed at young adults (ages ranging from 18 to 40), and it was a prerequisite for the participants to have both online and in-store shopping experience prior to participating in the study (see Chapter 3 for more details). Therefore, among the 136 participants the responses of the four participants did not meet this criterion

and were not considered for further analysis. The remainder 132 participants answered all questions and included in data analysis.

In the first part of the questionnaire, participants were asked their age and gender. As shown in Figure 4.1, in all 132 participants, just over half of the participants (51%) were between ages 25-29. Following this, 30 of all participants were between ages 30-34, 21 were ages 35-40, and 13 were between ages 20-24. While 70 participants were women, 62 participants were men.

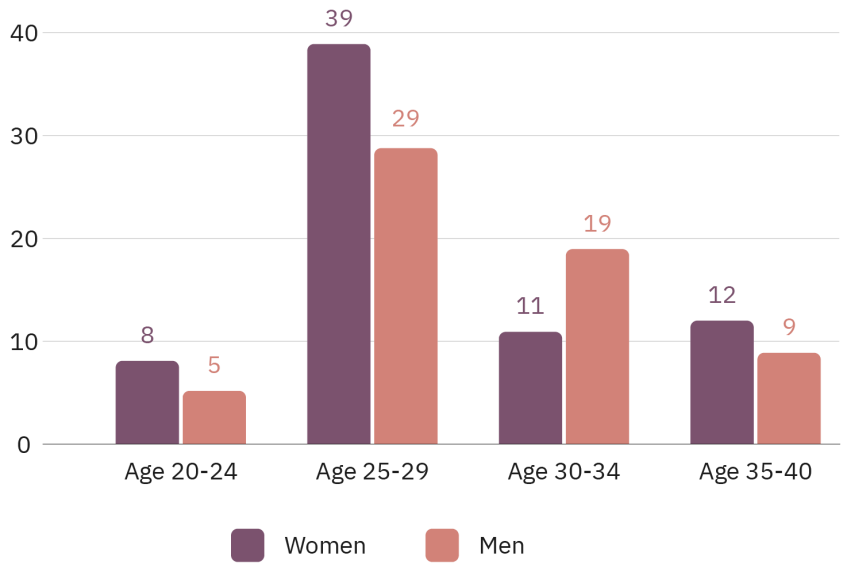


Figure 4.1 Age and gender distribution of participants in questionnaire

While conducting the fieldwork, although ensuring gender distribution in each phase was not an objective, it ended up almost equal.

4.2.2 Technology Readiness Index (TRI)

The second part of the questionnaire was 16-question Technology Readiness Index (TRI). As TRI 2.0 is already validated on reliability, discriminant validity, and construct validity, the researcher did not perform any factor analysis for validation.

The overall readiness score was calculated through the formula presented in Figure 4.2, which uses average scores for each theme which were optimism, innovativeness, discomfort, and insecurity. The mean values of innovativeness and optimism were used in the formula directly since they are considered as TR's motivating dimensions (Parasuraman & Colby, 2015). However, the mean values of discomfort and insecurity were reversed, as they are the inhibiting dimensions. As a result, by considering all 132 participants' responses, the overall readiness score was calculated as 3,32 on a scale that ranges between 1 and 5.

$$\text{TRI score} = \frac{\text{Optimism} + \text{Innovativeness} + (6 - \text{Discomfort}) + (6 - \text{Insecurity})}{4}$$

Figure 4.2 Formula for calculating overall readiness score

This formula basically aims to calculate the overall readiness score by using mean values of each theme. According to Parasuraman and Colby, (2015), 3 (neutral) represents the scale's mid-point, and the higher mean values of the *discomfort* and *insecurity* means that the participants feel insecure and uncomfortable about technological change. Likewise, participants can be considered as *optimistic* and *motivated* about technology when the mean values of optimism and innovativeness higher than the scale's midpoint.

As shown in Table 4.1, 132 participants' average scores for each statement were calculated. Among all four themes, optimism had the highest mean value, which was 4.02, and discomfort had the lowest mean value, 2.68. The mean value for innovativeness was 3.31 and insecurity was 3.36.

Table 4.1 Average scores of 132 participants for per TRI 2.0 statement

Optimism		Innovativeness		Discomfort		Insecurity	
OPT1	4.28	INN1	3.10	DIS1	2.72	INS1	4.24
OPT2	3.89	INN2	2.38	DIS2	2.66	INS2	3.07
OPT3	4.03	INN3	4.00	DIS3	2.95	INS3	3.38
OPT4	3.88	INN4	3.75	DIS4	2.39	INS4	2.74
Average	*4.02*	*Average*	*3.31*	*Average*	*2.68*	*Average*	*3.36*

According to TRI results, the mean value of the discomfort was 2,68 and it has a negative effect on overall TR score. However, when optimism and innovativeness points were examined particularly, it could be said that participants were optimistic and motivated about technological change in general.

4.2.3 General Clothes Shopping Experience

In the last third part of the questionnaire, participants were asked six questions related to their general clothes shopping experience. Four of the questions were multiple-choice, and two were check-box format to allow the participants to select multiple options. As a reminder, all questions were answered by all 132 participants.

Q1. Clothes shopping during COVID-19 pandemic. First question was about how the participants shopped for clothes during COVID-19 pandemic. Distribution of the answers (see Figure 4.3): Completely online 41,7% (55); Mostly online, rarely from the store 32,6% (43); Both online and from the store 12,1% (16); Mostly from store, rarely online 8,3% (11); Completely from the store 3,8% (5); I do not prefer to shop during pandemic 1,5% (2).

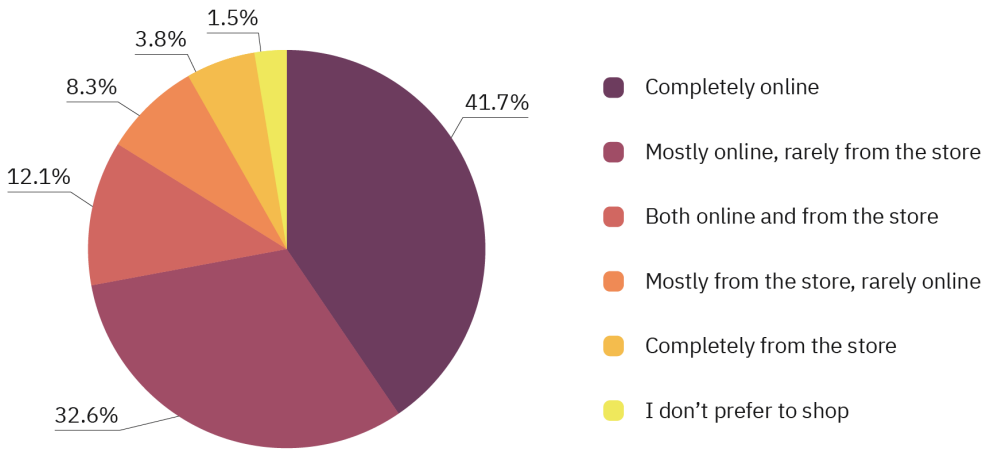


Figure 4.3 How participants shop for clothes during the COVID-19 pandemic

Q2. Clothes shopping before COVID-19 pandemic. Second question was about how the participants shopped for clothes before the COVID-19 pandemic. Distribution of the answers (see Figure 4.4) from mostly preferred mediums to the least: Both online and from the store 46,2% (61); Mostly from store, rarely online 30,3% (40); Mostly online, rarely from the store 12,1% (16); Completely from the store 9,1% (12); Completely online 2,3% (3).

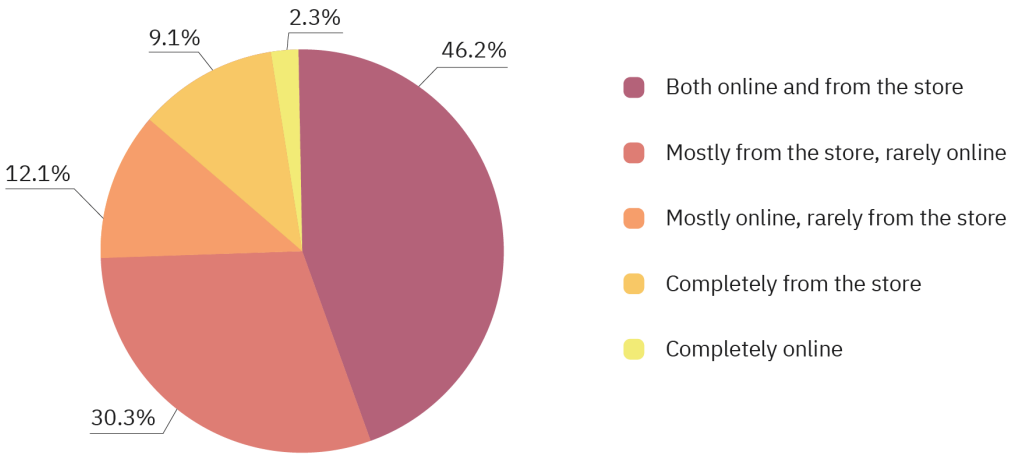


Figure 4.4 How participants shop for clothes before the COVID-19 pandemic

If we compare the participants' clothes shopping preferences before and during the pandemic, it can be seen that (Figures 4.3 and Figure 4.4) percentage of participants preferred online clothes shopping has risen from 2,3% to 41,7%.

Although online shopping may have been the preferred channel due to the pandemic restrictions in Turkey while conducting the research, considering this high rate of increase, it can be said that there was a general tendency to shop online. In Phase 2 of the fieldwork, interview, the reasons for this tendency were investigated within the context of pandemic, and the whole experience was examined as a three-stage process: pre-shopping, during shopping, post-shopping.

Q3. Medium preferences for clothes shopping. The distribution of the answers (see Figure 4.5) reveals the participants' preferences as: Mostly smartphone, rarely computer 45.5%; Mostly computer, rarely smartphone 29,5% use; Only smart phone 14,5%; Only desktop/laptop computer 8,25%; Both desktop/laptop and smart phone 1,5%; and, Tablet 0,75%.

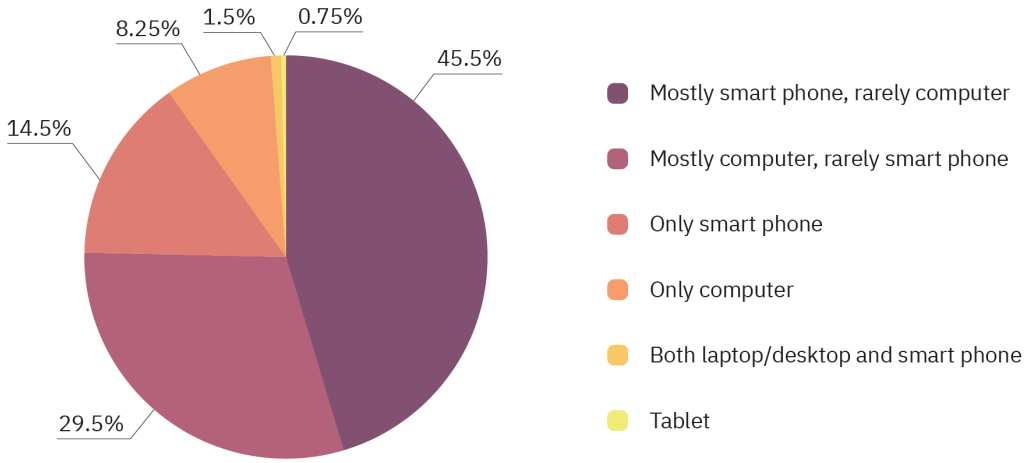


Figure 4.5 Which medium/medium combinations participants prefer for online clothes shopping

In the fourth question, it was asked participants to select closest option describing their clothes shopping experience

Q4. Describing the way of clothes shopping. The distribution of the answers (see Figure 4.6) are as follow: Online search, online shopping 59,9%; In-store search, in-store shopping 15,9%; In-store search, online shopping 14,3%; Online search, in-store shopping 9,9%.

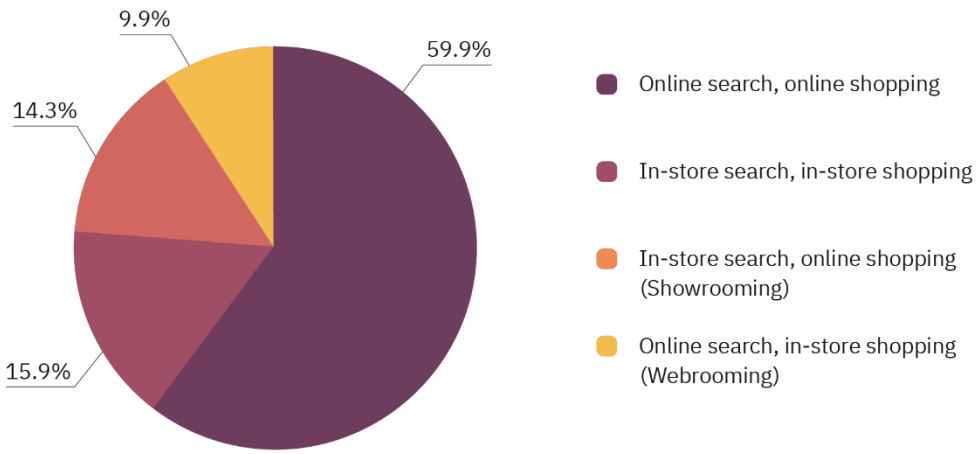


Figure 4.6 How participants describe their way of clothes shopping

Q5. Online channels preferred by the participants for clothes shopping. Distribution of the answers are: Online shopping websites including different brands (e.g., Trendyol, Amazon) was preferred by 118 participants; Brands' websites were preferred by 68 participants; Brands' mobile applications was preferred by 46 participants, and finally; Social media platforms were preferred by 11 participants. Total numbers of participants' channel preferences can be seen in Figure 4.7, and the distribution of participants' channel preferences can be seen in Figure 4.8.

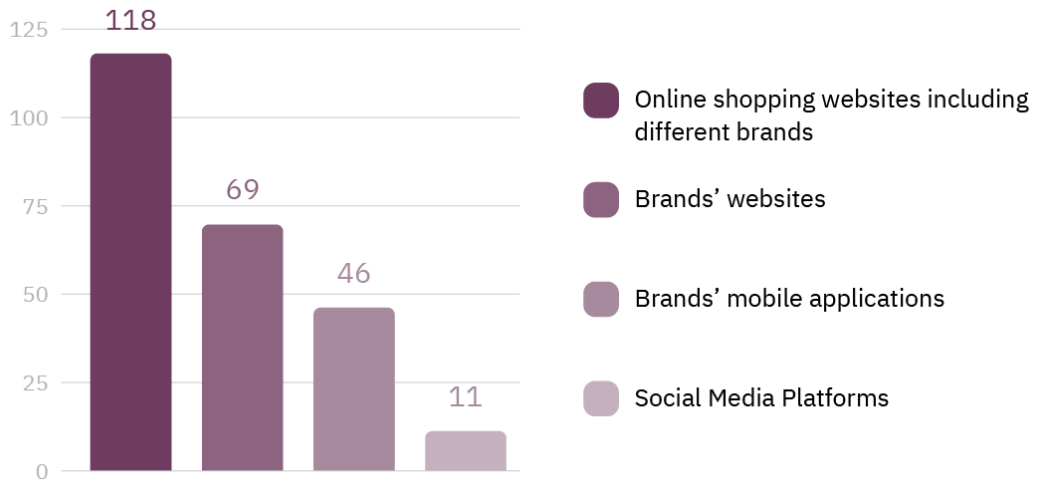


Figure 4.7 Online channel preferences of the participants

It can be seen that most participants (118 out of 132) prefer shopping from websites that include different brands. In fact, 49 out of 118 participants stated that they only/exclusively shop from such websites.

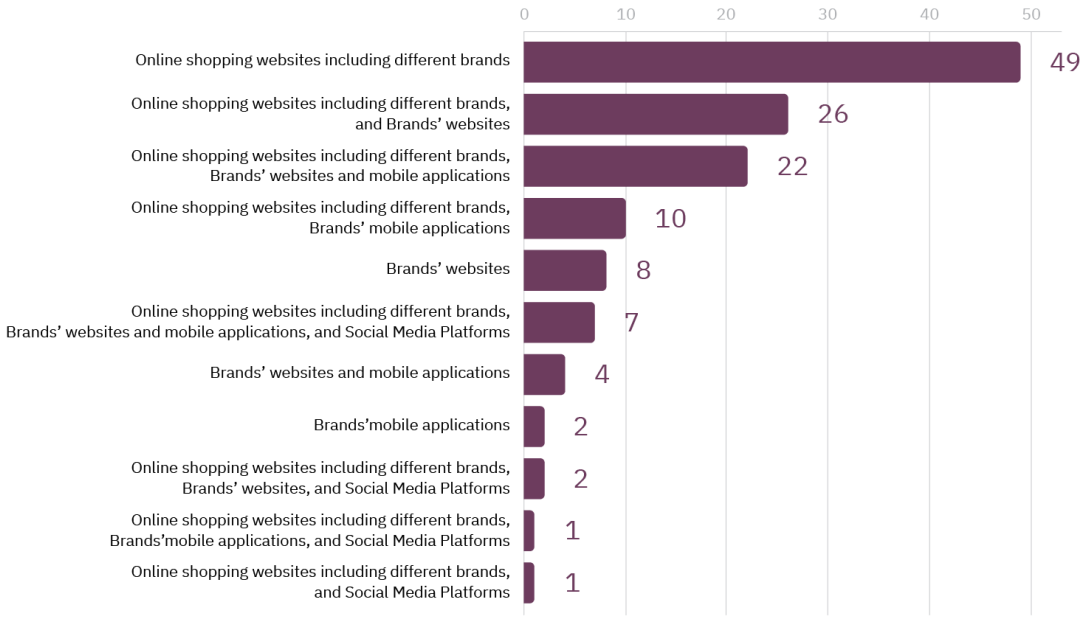


Figure 4.8 Distribution of the participants' online channel preferences across channels

Among all medium/medium combinations, the use of the smartphone (as a sole medium or in combination with other mediums) was the most preferred one. Although the frequency of use changes, 91% of the participants stated that they use smartphones for clothes shopping. In order to understand how the heavy usage of smartphones affects the clothes shopping experience, interviews results and analysis section (see Section 4.3) this topic will be reintroduced.

Q6. Clothes related information searched before shopping. The participants were asked to select all options that apply. Out of 132 participants' distribution of the answers (see the Figure 4.9) about what they search before clothes shopping were as follows: online search for price (110/132); online reading of ratings and reviews (103); online fabric and size information (83); in-store trying on the clothes (44); in-store seeing the clothes (34); online checking of in-store clothes stock (30); no search (3).

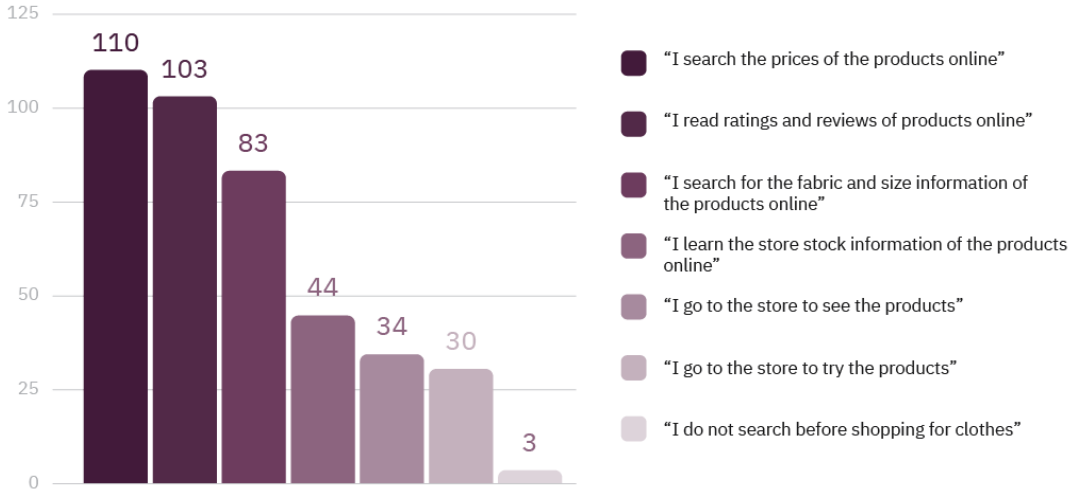


Figure 4.9 Clothes related information searched by the participants before shopping

4.3 Results and Analysis of the Interview

As mentioned in the Chapter 3, twelve participants, who had experienced both online and in-store clothes shopping, were recruited for the interviews. While three of these interview sessions were face-to-face, nine of them conducted through online

platform, Zoom, due to COVID-19 restrictions. Interview protocol described in Chapter 3 was followed. In this regard, interviews started with ice-breaking questions.

First part of the interview included the same but more detailed version of the last part of the questionnaire and contained questions about participants' general clothes shopping experience with reasons for shopping and shopping frequency.

Also, participants were asked to rank the four-trend shopping ways for both before and during pandemic depend on frequency of using. According to the results of ranking, shopping ways before the pandemic (see Figure 4.10), 'Completely In-store' was five participants' first choice. Following this, 'Online search, In-store shopping' became the first preference of 4 participants. Only one participant put 'In-store search, online shopping' in the first rank, while 6 participants put it third, and 5 participants indicated it as their last choice. Participants' preferences on four-trend shopping ways before pandemic can be seen in Table 4.2.

	1st	2nd	3rd	4th
Completely Online	2	6	1	3
Online search In-store shopping	4	4	1	3
In-store search Online shopping	1	0	6	5
Completely In-store	5	2	4	1

Figure 4.10 Ranking results of four-trend shopping ways before pandemic

Ranking of the results across four trend shopping ways during the pandemic can be seen in Figure 4.11. 'Completely Online' was the first choice by all 12 participants. 'Online search, In-store shopping' was the second choice of 9 participants. Only one participant put 'Completely In-store' in second order. Overall, 'Completely In-store' option was the least favorite, as 6 participants selected it as their last option.

Participants' preferences on four-trend shopping ways during pandemic can be seen in Table 4.3.

	1st	2nd	3rd	4th
Completely Online	12	0	0	0
Online search In-store shopping	0	9	3	0
In-store search Online shopping	0	2	4	6
Completely In-store	0	1	5	6

Figure 4.11 Ranking results of four-trend shopping ways during pandemic

Considering the channel cards (see Figure 3.6) sorted by participants, it can be seen that 10 participants who did not indicate the 'completely online' option as their first choice before the pandemic preferred the 'completely online' option as first during the pandemic. Three of these ten participants put the 'completely online' option to the last place before the pandemic. Besides, while five participants put the 'completely in-store' option in the first place before the pandemic, three of them put this option in the third place during the pandemic, and two of them stated that they preferred it as the last option. Therefore, it can be said that the pandemic affected participants' channel preference, and online shopping became more popular and primarily preferred during the pandemic. On the contrary, 'completely in-store shopping' lost its popularity, and it was not preferred as the first option by any participants in during the pandemic period.

Table 4.2 Participants' preferred shopping ways for before pandemic period

	1st	2nd	3rd	4th
P01	Completely Online	Completely In-store	Online search In-store shopping	In-store search Online shopping
P02	Completely In-store	Online search In-store shopping	In-store search Online shopping	Completely Online
P03	Completely In-store	Online search In-store shopping	In-store search Online shopping	Completely Online
P04	In-store search Online shopping	Completely Online	Completely In-store	Online search In-store shopping
P05	Completely In-store	Completely Online	In-store search Online shopping	Online search In-store shopping
P06	Completely In-store	Completely Online	In-store search Online shopping	Online search In-store shopping
P07	Online search In-store shopping	Completely Online	Completely In-store	In-store search Online shopping
P08	Online search In-store shopping	Completely Online	Completely In-store	In-store search Online shopping
P09	Completely Online	Online search In-store shopping	In-store search Online shopping	Completely In-store
P10	Online search In-store shopping	Completely In-store	Completely Online	In-store search Online shopping
P11	Completely In-store	Online search In-store shopping	In-store search Online shopping	Completely In-store
P12	Online search In-store shopping	Completely Online	Completely In-store	In-store search Online shopping

Table 4.3 Participants' preferred shopping ways during pandemic period

	1st	2nd	3rd	4th
P01	Completely Online	Completely In-store	Online search In-store shopping	In-store search Online shopping
P02	Completely Online	Online search In-store shopping	In-store search Online shopping	Completely In-store
P03	Completely Online	Online search In-store shopping	Completely In-store	In-store search Online shopping
P04	Completely Online	In-store search Online shopping	Online search In-store shopping	Completely In-store
P05	Completely Online	In-store search Online shopping	Online search In-store shopping	Completely In-store
P06	Completely Online	Online search In-store shopping	Completely In-store	In-store search Online shopping
P07	Completely Online	Online search In-store shopping	Completely In-store	In-store search Online shopping
P08	Completely Online	Online search In-store shopping	Completely In-store	In-store search Online shopping
P09	Completely Online	Online search In-store shopping	In-store search Online shopping	Completely In-store
P10	Completely Online	Online search In-store shopping	In-store search Online shopping	Completely In-store
P11	Completely Online	Online search In-store shopping	Completely In-store	In-store search Online shopping
P12	Completely Online	Online search In-store shopping	In-store search Online shopping	Completely In-store

Also, participants were asked to indicate the frequency of selecting online and in-store clothes shopping before and during pandemic with using a 5-point Likert scale, see Figure 4.12 (1 – very rare, 2 – rare, 3 – neutral, 4 – often, 5 – very often). As it can be seen in Figure 4.13, based on participants' answers, the average frequency score of in-store clothes shopping experience before pandemic was 3.4 out of 5, between neutral (3) and often (4). On the other hand, with the outbreak, the average frequency scores for in-store clothes shopping dropped sharply to 1.4 (out of 5), between very rare and rare.

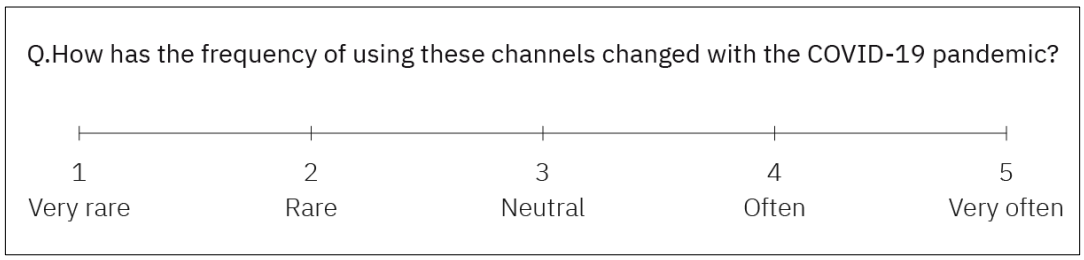


Figure 4.12 5-Point Likert scale to measure participants' frequency of preferring in-store and online clothes shopping

The average frequency scores of participants' online clothes shopping before and during the pandemic can be seen in Figure 4.14. While the average frequency score was 2.2 (out of 5) before COVID-19 pandemic, during the outbreak it raised remarkably to 4.1, between often (4) very often (5).

Figure 4.13 Average frequency scores of participants' in-store clothes shopping before and during the pandemic

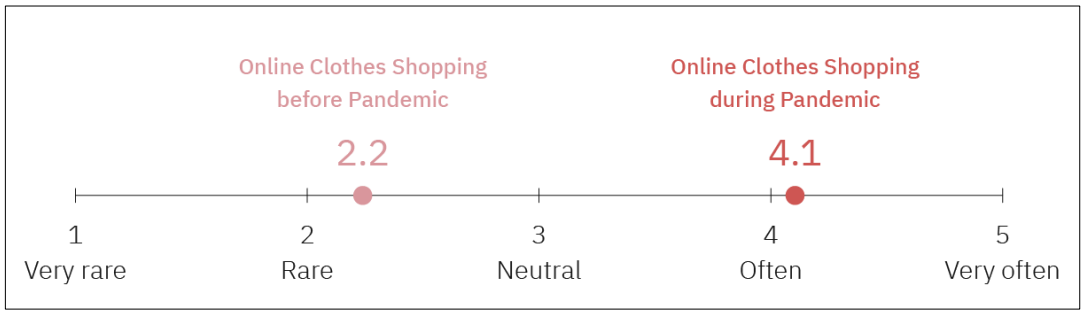


Figure 4.14 Average frequency scores of participants' online clothes shopping before and during the pandemic

Different from comparing these options with each other by card sorting, at this stage, the frequency of use was asked to participants by using a 5-point Likert scale. Similar to the results of card sorting, it can be seen that the COVID-19 pandemic affected also these preferences. Overall, while online shopping was preferred 'often' by the participants during pandemic, in-store shopping became an option that is chosen 'very rare'.

The participants were asked how they would continue to shop in near future, most of the participants stated that they get used to shopping online and plan to use it frequently as it is more 'practical' than in-store shopping.

Interviews were carried out in semi-structured style. Therefore, after the prepared set, follow-up questions were asked based on what the participant had already described. The participants added their own notes on the Miro board using post-it feature. A screenshot from the interview session can be seen in Figure 4.15.

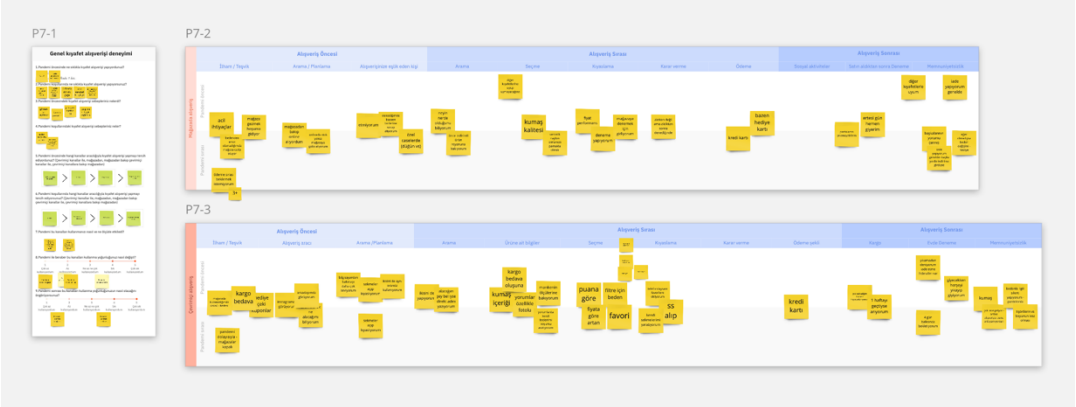


Figure 4.15 A screenshot of the Miro board during interview session

Eleven hours of audio files recorded during the sessions were transcribed into Microsoft Word documents, and the raw data was transferred into Airtable. This made it easier to make connections between the participants' statements by allowing the researcher to group and filter the data and show data in different views. Accordingly, the given answers were matched with the related question and placed under the 'Answer' category created in the Airtable. As mentioned in Chapter 3, the

general inductive approach was followed for the data analysis. Given answers were examined and the relevant codes were created and written to the 'Code' column. As interviews were semi-structured and questions were open-ended, it was not possible to generate codes from any given answer. Therefore, some code rows were left blank. A screenshot of the Airtable data coding table can be seen in Figure 4.16.

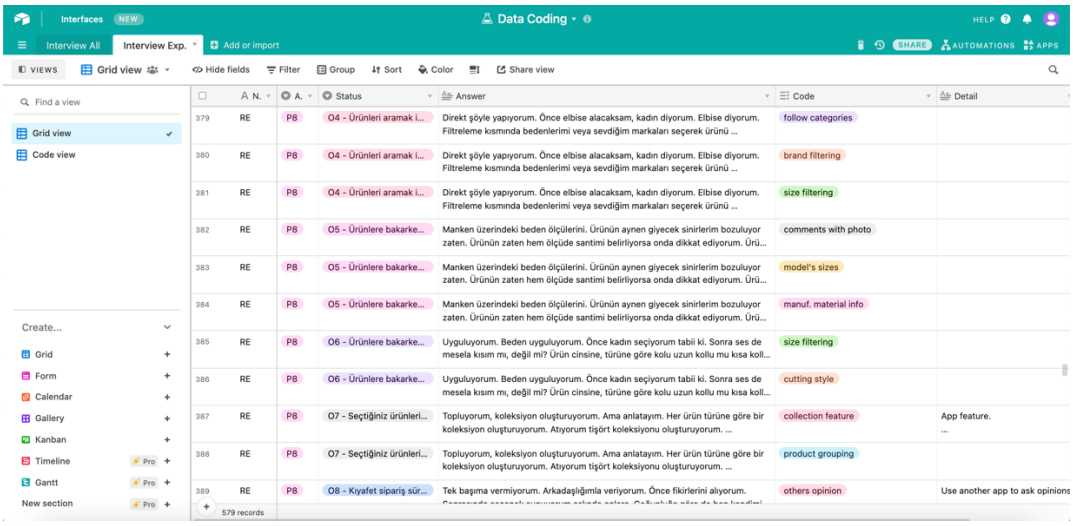


Figure 4.16 A screenshot of the Airtable data coding table

As the following step, the clarity of codes was checked in terms of their meanings. Then, some of them were revised to better express the intended meanings, and some with similar meanings were combined as one code. The list of all codes can be seen in Figure 4.17. Once generating different *views* in Airtable, the coded data was sorted by questions and codes to make and reveal connections through raw data. In *code view,* repetitive codes and repetition times by participants were eliminated. In *question view*, generated codes for each question were grouped, and analyzed. Utilizing these two views, the relationships between the codes and the stages of the clothes shopping experience were examined profoundly and categorized to make it easier to comprehend the coded data. These codes will be presented and discussed in detail in the following sections.

During data analysis, repeating and potentially related codes were grouped together for each shopping stage. While making this grouping, the number of mentions by participants was not used as an input. Some categories and their sub-categories were similar for online and in-store shopping, and some were different and diverse. Therefore, each code list along with relations and similarities between them will be discussed in detail.

Clothes Shopping Experience - Codes

- Need of new clothes
- Satisfactory previous experience
- Unable to find specific clothes in store
- No need to visit the store /free shipping
- Low cost due to free shipping
- Having a discount coupon
- Free time activity
- Concerns for being outside due to pandemic
- Feeling obligated
- Social media commercials
- Internet visuals
- Friends
- Influencers
- Seeing the cut of the clothes
- Having a gift card
- Enjoying wandering around the store
- Unable to find online
- Urgent need
- Eye-catching clothes
- Realizing need after seeing the clothes
- Shadowing by staff
- Being target oriented
- Asking for help from sales assistant
- Looking for new comings rack
- Looking for discount rack in the store
- Personal computer
- Desktop website
- Mobile apps
- Mobile websites
- Smart phone
- Shopping apps
- More clothes options online
- First to wear
- Nearby
- Favorite stores
- Outlet store
- Checking clothes in stock
- Accompanied
- Unaccompanied
- Being able to see the clothes
- Being able to touch to fabric
- Search bar
- Follow categories
- Recommended for you
- Sorting
- Filtering
- Taking screenshots
- Sending links/photos to friends
- Links on multiple tabs
- Trying on at home
- Color and style
- Combinations (with other clothes)
- Comfort
- Fitting the body
- Making (the wearer) to look good
- Price
- In-app ratings
- Based on experiences
- Sales
- Opinion about looks
- Comments
- Comments with a photo
- Other buyers' comments on sizing information
- Clothing Material Info
- Free shipping
- Return policy
- Bank card
- Credit card
- Gift card
- Wallet feature of the apps
- Virtual card
- Contactless payment
- Following delivery activities
- Size problems
- Spot lights illusion
- Second thought after purchasing
- Negative feedback by others
- Becoming unstitched after washing
- Having undesired decollete
- Previously worn by someone else
- Colour loss of the fabric
- A defect
- Being indurable to wash
- Changing clothes from store
- Continuing to wear at home
- Repairs & alterations at home
- Returning back
- Repairs & alterations at tailor

Figure 4.17 The list of codes resulted from the raw data analyze

4.3.1 Pre-shopping Experience

The section involves the participants' experiences that can be associated with the pre-shopping phase. As mentioned previously, pre-shopping was analyzed separately for online and in-store shopping. Three main headings that present factors affecting user experience were created related to online shopping context: 'Reasons of shopping', 'Shopping channels/devices', and 'Opportunities'. Similarly, four headings were generated in the physical store shopping context: 'Reasons of shopping', 'Searching for the store', 'Shopping companion' and 'Opportunities'. Although each heading had context-specific information and insights, some sub-headings were similar. To avoid repetition, these sub-headings were examined under a single title, which is named as 'General Clothes Shopping Context', and differences were explained in the relevant context. All factors in pre-shopping phase can be seen in Figure 4.18.

4.3.1.1 General Clothes Shopping Context

This part included the common factors of the pre-shopping experience in the online and in-store clothes shopping context. In this regard, the 'Reasons of clothes shopping' was determined as a common heading/category for both contexts. It is examined further in the following section.

i) Reasons of clothes shopping

This category included the participants' reasons addressing why they shop. Two main reasons were identified: 'Need of clothes' and 'Inspiration.'

Need of clothes. All twelve participants stated that they shop for clothes when they think they need new clothes. It was one of the general reasons for clothes shopping in common with in-store shopping.

Inspiration. The sub-category was derived from people's inspirations and encouragements to shop for clothes. All featured sources of inspiration in common were friends, influencers, relatives, and internet visuals.

Figure 4.18 Headings representing factors affecting clothes shopping experience in pre-shopping phase

It was indicated by the participants that their friends and influencers share their clothes shopping experiences, explain what they buy and why they choose a specific brand, and offer tips in the in-store shopping context. Besides, they send the media links or photos of the clothes, and recommend specific websites and brands for online shopping. Apart from these, participants are also inspired for shopping by images on the internet, such as Pinterest.

In the following sections, these sub-categories are examined comprehensively.

4.3.1.2 Online Clothes Shopping Context

This part covered the participants' online shopping preferences, and divided into three categories: i) Reasons of clothes shopping, ii) Shopping channels/devices, and iii) Opportunities (see Figure 4.18).

i) Reasons of clothes shopping

This part included participants' reasons of clothes shopping in online context.

Need of clothes. Participants stated that they prefer to shop online when they need new clothes. One of them also highlighted that while she prefers online shopping due to need, it is no longer a requirement for shopping online with the pandemic.

Positive experience. the sub-category was derived from what makes online clothes shopping a positive experience for participants. Thanks to satisfactory previous experiences, participants stated that they chose to shop clothes online. Besides, it can be seen as a free-time activity for some participants.

> *"Sometimes, I get bored at home and open the app to spend time. I say let's see what is there. If I like something, I usually buy it." (P06)*

Limitations. It refers to limitations that lead people to online clothes shopping. The COVID-19 pandemic was one of these limitations and caused concerns about being outside. For instance, in Turkey, there was a period when stores were closed due to Pandemic restrictions and regulations. Some participants articulated that they felt obligated to shop for clothes online since they were not able to go to a store. Also, participants stated that when they cannot find specific clothes that they look for in-store, they shift to online shopping. The time constraints were also appeared in pre-shopping process. Online clothes shopping channels were indicated as a way to save time, especially for searching information about clothes.

Inspiration. The sub-category was derived from people's inspirations and encouragements to shop online. Featured sources of inspiration were social media commercials, friends, influencers, relatives, and internet visuals such as Pinterest. Among these inspiration sources, social media commercials were unique to online shopping as they directed people to buy from online shopping channels.

> *"I was talking to my home mate. She always buys sweaters online like this. I don't know how much their cost or anything. She was trying to encourage me. Then one day she said, 'Look on the internet, it is cheaper, there is a discount.' I stubbornly said that I can't try online shopping. What if it doesn't fit me or has defect? Then she said that I can return it back. This process was always difficult for me. However, I decided to try and see it myself." (P10)*

ii) Shopping channels/devices

'Shopping channels/devices' included featured channels and devices preferred by participants to shop online. As channels, desktop websites (brands' own websites and shopping websites including different brands), mobile websites, mobile shopping apps were said by the participants. In relation to that, smart phones and personal computers were preferred devices.

Some participants also articulated that shopping through mobile shopping apps was very practical way of shopping. Even though it can be related with offered features

of apps, smart phones' physical properties may have considerable impact on this result as they are suitable for one handed usage and lighter compared to laptops.

iii) Opportunities

'Opportunities' presented positive aspects of online clothes shopping that may also provide opportunities to people. The most repetitive phrase in this context was 'more options'. Participants stated that clothes variety, size, and stock variety were much wide in online shopping. Also, they had the opportunity to see clothes on the model as online channels used photos of the model wearing clothes.

Also, having a discount coupon for online shopping encourage participants to prefer online channels. Some participants said that they prefer online shopping as they do not have to go to a store. They also mentioned about difficulty of transportation, crowdedness of stores and transportation vehicles. These may also be the reasons that make in-store shopping less preferable. Besides no cost for transportation, thanks to free shipping opportunities, online shopping became a low-cost activity for the participants.

> *"I get rid of all this shopping burden. When I shop online, I look at the app screen and see what is happening. Okay, I say get this outfit, not that outfit. Therefore, I get rid of all that store shopping burden. I mean, getting up, going to the store, trying them on. Then deciding fitted or not. Even parking the car. However, in online shopping, one day someone knocks on the door, and the products arrive." (P11)*

One of the participants also mentioned she wanted to be the first person to try-on the clothes.

> *"When you buy something online, these clothes come from the storage. It hasn't been tried on by another person before, so I really like that." (P03)*

4.3.1.3 In-store Clothes Shopping Context

In this part, the reasons for in-store shopping preferences were covered besides how participants search for stores, the effects of a companion, and possible opportunities for in-store clothes shopping. Therefore, it is divided into four categories: i) Reasons of clothes shopping, ii) Searching for clothes, iii) Shopping companion and iv) Opportunities, as can be seen in Figure 4.18.

i) Reasons of clothes shopping

'Reasons of clothes shopping' included sub-categories related to comments about why participants particularly prefer to shop from stores besides general reasons for clothes shopping.

Need of clothes. Besides the participants stating that they buy clothes from the store due to new clothes need, some of them indicated that they preferred stores when this need became urgent. In addition, some participants articulated that they preferred to buy expensive dresses from store.

Positive experience. The sub-category was derived from what makes in-store clothes shopping a positive experience for participants. Thanks to satisfactory previous experiences, some participants stated that they chose to shop for clothes online. In addition, some participants mentioned that as they enjoyed wandering around the store, they preferred to go to the store instead of shopping online.

Limitations. Some participants stated that their priority was shopping through online channels. However, when the specific clothes they wanted to buy were out of stock, or they could not find what they looked for, they went to the store.

ii) Searching for store

'Searching for store' refers to strategies on how participants select which store to go along with the reasons for their selections.

Some participants stated that they preferred to go stores nearby. However, some of them stated that they had favorite stores even though they were far away from their home or workplace. Likewise, independently of location, outlet stores were preferable for some participants.

Apart from these, the participants articulated that they checked stocks of clothes on the internet to find closest stores they may go/visit for shopping. At this point, it is possible to mention about 'webrooming' and call these participants 'webroomers'. Different from the participants who were not able to go to store, these participants used online channels as showroom, then bought clothes offline. It can be said that tactile information was important for them, as clothes shopping process did not end without going to the store.

iii) Shopping companion

'Shopping companion' was derived from effects of companion on participants' clothes shopping experience. According to the given answers, while some participants preferred to go to a store with a companion, some avoided it.

Participants asked their close friend, sibling, cousin, or parent to accompany for clothes shopping. Furthermore, they also said that they offered to go shopping together with their friend whom they think are talented in fashion. The common expectation from a companion was to tell what they think about the clothes participants that select or tried-on. Besides, some participants stated that they expected their peers to find suitable clothes for them in stores. Apart from these, shopping could be an activity for spending time together with a friend, parent or anybody coming as a shopping mate.

On the other hand, some participants who chose to go alone mentioned their concerns about being with a companion. The most particular concern was being affected from others' feeling excessively.

> *"I like shopping alone. If there is someone with me, I tend to like what they like more. When I'm alone, I can better understand what I want more." (P02)*

They expressed their negative feelings about existence of someone else.

> *"I do not want a shopping mate. Even sometimes, other people in fitting room comment about what I tried on, and it is so annoying." (P05)*

iv) Opportunities

'Opportunities' presented positive aspects of in-store clothes shopping that may also provide opportunities to people. Some participants articulated that they went to the store to see the clothes and touch the fabric of clothes. Likewise, they wanted to see the cut of the clothes by trying them on. In fact, some of them said that they went to the store even if they were going to shop online. Also, they stated that this was the most significant advantage of in-store shopping.

> *"I like to see the clothes I am going to buy. I want to touch it to feel its texture, the quality of its fabric, whether it's stretchy or not. I want to try it on. As you know, sometimes it is not what it looks like. It looks lovely in the photo, but when I try-on, I don't know; it fits on my waist but is wide in general. Therefore, I want to see and feel its texture." (P10)*

The participants also emphasized that depending on the brand, sometimes physical stores may have more options.

4.3.2 Pre-shopping Phase Takeaways

In this section, the pre-shopping phase is summarized along with the researcher's insights.

The first stage of pre-shopping phase was determined as 'Inspiration' in the designed journey map. However, after categorizing the coded data, it was decided to analyze this stage under the title of 'Reasons of clothes shopping'. There were similar reasons to prefer online and in-store shopping. Therefore, 'reasons of clothes shopping' was a common category including answers to 'why participants shop for clothes' and 'who

and what they are influenced/inspired by' was created and named general context (see Figure 4.18).

Besides these common reasons, the participants often used the word 'practical' while talking about why they chose the online channels. In the pre-shopping phase, this practicality was associated with the 'ease of use' provided by the preferred devices that people do not waste time on transportation for reaching the store and traveling from one clothes store to another. Therefore, one of the prominent considerations in the online shopping context could be 'time saving'.

In addition, it was noticed that online channels not only provide more options, but also enable participants to see clothes on models. Even though not being able to see clothes physically was considered a disadvantage of online shopping by the participants at first, as it provides photos of the model wearing clothes helping them understand cutting style, height, and general look of the clothes, it became favored.

Accordingly, it was seen that when the participants, who did not prefer to go to the stores and spend time there due to the health concerns during the pandemic period, had to go to the store, they did an online search to reduce the time they spent in the store. Furthermore, the participants, who did not prefer to go to the store due to crowd, distance, and time constraints, said that their frequency of going to the store has decreased considerably since last year. According to the findings of interview, this frequency has decreased from 3.4 (Neutral-Often) to 1.4 (Very rare-Rare) in 5-point Likert scale.

On the other hand, when the pre-shopping phase is examined in the context of in-store, it can be seen that being able to touch the fabric and wear the clothes is the distinguished reason for preference of in-store shopping, and considered as its opportunity by participants. However, with the pandemic, participants indicated that they chose not to touch the clothes even though they could touch them. After examining clothes first by looking, they decided whether it was wort to touch or not, and then, they touched or tried on the clothes. Based on these outcomes, it can be

said that the pandemic has affected the participants' habits, and level of interactions with clothes in this experience.

Moreover, it was observed that if the participants, who first preferred in-store shopping, could not find the product in-store or could not go to the store, they tended to shop through online channels. At this point, it can be said that the navigation of the stores has a significant impact on the in-store shopping experience. If this searching stage in the store resulted in not purchasing due to several reasons, it can be concluded that the participants also use the stores as showrooms. This result has a great importance for the study because even the participants do not want to spend time in the store for many of the reasons mentioned previously, some situations cause them to go to the store. In other words, it can be said that the participants use many channels at the same time to reach the information they want and need about clothes. As explained in the literature, these participants could be considered as omni-channel shoppers. In the pre-shopping phase, omni-channel shopping was associated with channel preferences, especially with 'research'. In other phases, it was examined through users' interactions with the physical environment, websites and applications along with the devices they use for online shopping.

4.3.3 During-shopping Experience

During-shopping experience refers to experiences of participants during clothes shopping. As in the designed journey map for the fieldwork of this study, during-shopping includes different shopping phases. Even though these phases could differ for both online and in-store shopping experiences at some levels, similarities between these phases were revealed while coding the data. Therefore, common categories were created considering resemblances, and phases were examined under these categories in data analysis stage.

These categories mainly are 'Search', 'Information about clothes', 'Comparison of clothes', 'Decision', 'Order' (in online shopping context), and 'Payment'. As searching

options for clothes and ways of getting information about clothes varied in online and in-store shopping, 'Search' and 'Information about clothes' categories also included sub-categories of 'online shopping' and 'in-store shopping' (see the Figure 4.19).

i) Search

In the 'Search' category, participants' strategies and preferred options while searching for clothes, and situations or features that affected this phase were examined. As mentioned above, this phase was divided into two parts: 'Search in online shopping', and 'Search in in-store shopping'.

Search action requires using website/app features in the online shopping context. Therefore, different features of apps, websites, and other possible channels relevant to searching was examined at this stage. However, as comparing these channels' features was not an aim for this study, these features were not listed or given to participants to understand which of these features they prefer to use or not.

Figure 4.19 Headings under 'Clothes shopping experience: during-shopping phase'

‘Search' in in-store shopping

Before searching for clothes, some participants stated they wandered around the store to realize what they could buy, or what they would need. Therefore, they said they looked for eye-catching clothes at first.

Discouragement. The sub-category was derived from what makes in-store clothes shopping a negative experience for participants. Some participants mentioned that if the store staff shadowed them while they were searching for clothes, they immediately got out of the store.

Strategies. In this sub-category, it was explained how participants started to search for clothes in-store. Some participants stated that if they went to the store for their need for new clothes, as they would become target-oriented, they went toward the relevant rack. If they could not find the rack or clothes they looked for, then they asked for help from the sales assistant in the store.

Some participants' first move was looking for a discount rack in the store. Some of them stated they searched for clothes they liked, or even tried before, instead of looking at any clothes on the discount rack.

> *"I usually go to the rack that includes clothes I want to look for. I know what to buy, generally my needs." (P01)*

> *"I usually know where the clothes are I look for in the stores. Therefore, first, I look at the discount section to see if there are any discounted products. If I can't find anything there, I start to look for the product that I like." (P07)*

Furthermore, some participants said that the sale of new clothes starts in-stores first, then starts on online websites. As they wanted to buy the latest fashion, they looked for new comings' rack first.

In general, it was noticed that participants' strategies in stores depended on their shopping purposes. Besides, it can be said that the attitudes of sales assistants might have an impact on this experience in both positive and negative ways.

‘Search' in online shopping

App/website features. The sub-category presents how participants search for clothes after opening the apps/websites, and which features they prefer for searching. Accordingly, some participants stated that if they knew what they looked for, they wrote it on the search bar. However, they emphasized that it was disappointing that they could not reach the product they were looking for with their written text.

> *"If I look for something specific, I type in the search bar. Let's say I have pajamas that I like very much, and I want to buy another one; I typed it specifically to the search bar. Also, if I saw specific clothes in the store and decided to buy online, I do type again." (P05)*

If what to buy was not clear, or searching results were irrelevant, they said that they would choose to follow the categories.

> *"If it's clear what I'm going to buy, I search directly by typing its name. However, if it is not clear, and I want to take a look, then I select women category, then clothing, then tops for example." (P07)*

Some participants pointed out that they always checked on 'recommended for you' category at first.

> *"For example, I open the app, and on the first page, there is 'recommended for you' section. Sometimes I look at them first." (P10)*

Sorting. Some participants stated that they used sorting options after finding the relevant category of clothes. These sorting options may vary depending on what participants are interested in. According to the given answers, the most preferred sorting types were sorting by most favorites, most sellers, and price.

Filtering. Depend on the shopping channel, participants articulated that they used different filtering options. The most chosen filtering option was 'product filtering' by the participants. It refers to filtering clothes types such as jeans, trousers, and shorts. Following this, some participants mentioned 'brand filtering'. Some participants said

they used gender filtering option. One of them stated that as being petite, she used this option to see the clothes in 'girl' category. Moreover, one participant articulated that when she wanted to buy oversize clothes, she also selected 'men' category as their sizes were already large for her. In addition to this, some participants said that they filtered by size. However, some participants noted that if they used online channels as showroom and planned to buy from stores, which is called webrooming, they did not use size filtering option in order to see all models that brands have. Although size filtering and gender filtering were considered as completely different filtering types, it was noticed that the participants could use the gender filtering feature in the applications for filtering sizes.

Only one participant mentioned color filtering as he only wears dark shades of color.

> *"First of all, the color of clothes is important to me. By the way, I'm not a very stylish, or super dressed person, but at least there are certain colors that I prefer. Usually dark tones. I need to like the color of the clothes first." (P11)*

Some participants pointed out they looked for specific cutting styles while searching for clothes. If the application has a filtering option on 'cutting style', they said that they usually use it. Other filtering options emphasized by participants were 'free shipping' and 'on sale'. However, as participants reported, these options were not available for any applications.

ii) Information about clothes

'Information about clothes' involved sub-categories based on statements about which information participants particularly seek about clothes.

Clothing material and color. The first sub-category includes the clothes features participants stated they considered during shopping. All 12 participants mentioned that getting 'fabric information of clothes' is significant. They prefer cotton fabric for most clothes instead of polyester or any fabric that may cause sweating.

"I pay attention to the fact that it is made of cotton fabric, the cotton ratio of the fabric, that is, the quality of the product. I consider how much more I can wear. If it is cotton, I say that it does not make me sweat." (P08)

If the clothes' fabric type is different from usual for participants, they indicated that they need to get caring information, particularly for outerwear and sportswear.

Some participants mentioned that they did not wear specific colors; therefore, they were more careful about the color selection of the clothes.

In addition, according to participants' statements, if the clothes have printing on them, the quality of the print is vital for the participants. As mentioned, the clothes' cutting style was also one of the features that participants wanted to get information on.

In-store shopping. This section includes which specific features of clothes participants looked for in-stores and how they got this information. Even though some participants stated that the features they sought from clothes were mostly similar in-stores and online shopping, how they got this information was quite different.

Some participants emphasized that they went to store for being able to touch the fabric of the clothes. By touching clothes, they thought they got the information about fabric such as its softness, thickness, whether it itches or not.

Some participants said they were very 'tactual people'. Therefore, they stated that not being able to touch the clothes, especially in online shopping, was disappointing and sometimes concerning for them.

"If the fabric of the clothes I touch is soft and makes me feel good, I just want to buy it. This is something that I cannot do in online shopping and makes me worried." (P04)

The textile quality of the clothes was another feature highlighted by the participants. By saying textile quality, participants implied that it should not unstitched easily, or should be durable to stretching.

Most of the participants stated that they checked for defect before they buy. However, it was emphasized that it was the last step for them after deciding to buy.

The size range was another information they needed to know, specifically for the participants who wear extra-small or extra-large sizes.

> *"For example, if the outfit is small size, and I want it is in XS, it can be hard to find. When we search something for my mom, and we want to look for larger sizes. The size label says from which size to which size. From XS to XXL or something. Therefore, I look at it to see the size range." (P10)*

Participants also mentioned they unintentionally looked at the clothes on a physical mannequin in the store. However, they noted that the physical mannequin helped them to understand cutting style and sizes of the clothes.

> *"Seeing clothes on a mannequin can be an advantage of in-store shopping. After all, we can touch it, but the clothes on the mannequin attract my attention and helps me to understand how it would look on me." (P11)*

Online shopping. This section covers which specific features of clothes participants looked online and how they got this information.

All 12 participants emphasized that they searched for the size information of the clothes. While doing this, they benefit from different sources. The most favored source to get size information was the size guide provided by the channel. It was noticed that different from the size guide of the brands, some applications ask participants to indicate their weight and height information, not their body types. Then, they suggest the right size based on this information. However, some participants stated that this size suggestion seemed very abstract to them as they did not know the weight and height range for these sizes.

Based on participants' statements, the model's size wearing the clothes is also used to determine which size is suitable for the participants. Some participants also added that clothes' photo quality was important for them to figure out its fabric and texture.

Even though it was not directly a feature of clothes itself, some participants highlighted that they needed to have information about return policy of the shopping channel as some clothes types cannot be returned such as underwear and vintage.

iii) Comparison of clothes

In 'Comparison' category, how participants compare clothes they selected or liked was examined under two sub-categories: ways of comparing and factors affecting comparison.

Ways of comparing. This section included how participants compare selected clothes, and how it changes for online and in-store shopping.

For in-store shopping, the most repeated comparing way was trying clothes on in fitting rooms. However, due to COVID-19 restrictions in Turkey, it was not an option. Therefore, some participants stated that they bought clothes that they liked most and tried them at home. One participant said that after fitting rooms in stores were opened, she disinfected clothes in the store, then tried them on in the fitting room.

As different online shopping channels have different features, ways of comparing clothes also vary. Regardless of the shopping channel, most of the participants articulated that they sent links of the clothes to their friends and asked for their review.

Similarly, they mentioned that after taking screenshots of the shopping page on the web or mobile, they sent them to their friends/partners to ask their opinion.

Also, most of the participants indicated that they 'saved' clothes they liked or added them to the 'favorite' if it is available in app or website. Then, as they could see many clothes on the screen at the same time, comparison them became easier. It was

noticed that seeing many clothes on the screen at the same time was a significant effect on participants' comparison process. Therefore, the importance of clothes thumbnail size was examined. Three participants pointed out that they preferred to see clothes' photos bigger, or it became hard to compare clothes by using mobile websites; therefore, they opened them on desktop websites and use multiple tabs. One of them indicated that he sorted these tabs based on what he likes most.

> *"Since I look at so many clothes, it is hard to compare them on the phone screen, and I open them all as new tabs on the computer. Then I navigate between those tabs. In tabs, for example, I bring my favorite to the left. After sorting them, I eliminate some of them and decide which one to buy." (P05)*

One participant mentioned about 'collection' feature of the app, which helps to categorize favorite clothes basically.

> *"I create a collection for each clothes type. For example, I create a dress collection. I assign the clothes that I like to the collection. It is easy to share it with my friends this way, and I can see all the clothes in one place, then I decide." (P08)*

Factors affecting comparison. This section covered what factors participants took notice of while comparing.

The factor affecting the comparison process most was 'price'. However, it was seen that it did not affect every participant in the same way. While some participants preferred cheaper clothes if they liked the overall appearance and the material of the clothes, some noted that they found 'cheap' clothes of poor quality.

Based on participants' statements, the color and style of the clothes also had an effect on the comparison process. While some participants articulated they prefer specific colors, some stated that the color quality of clothes is also essential for them. 'Color quality' refers to many meanings depending on the participants, such as being not faded and preserving its color after washing. Besides, some participants stated they

avoid buying clothes in the same hue of color or the same style. 'Style of the clothes' include print style and cutting style of the clothes.

In comparing process, some participants indicated that they tried to remember what they had in their wardrobe not to buy clothes look alike.

> *"For example, if I have a similar type of clothes in my wardrobe, I prefer different styles." (P12)*

Participants also highlighted that a perfect clothes fit was also essential at this stage. This can be explained as the size of the clothes produced by this brand with the international size chart is consistent, not tighter or wider, and the cuts are suitable for the body shapes of the participants.

Some participants indicated how comfortable they felt while wearing the outfit was noteworthy. Additionally, some participants' expectations from clothes made them look good.

> *"You know, there are other things affect the comparison process and my decision. If I like something very much, if it makes me look beautiful, I say that it should be mine. That's what it is. Therefore, I think that's what it means to be satisfied. I like it, makes me good. It must be mine." (P08)*

In online shopping, participants indicated that they take in-app rates into account while comparing clothes.

iv) Decision

Previous experiences. Most of the participants indicated that they made their decision based on their previous experiences. For instance, if they knew a specific brand's t-shirts in terms of size, and quality, they preferred the brand or prioritized it while shopping. Even though participants stated that it could not have a huge impact on their decision-making process for in-store shopping, they emphasized it was vital for online shopping.

Price. As has been mentioned in 'Comparison' section, price was the most prominent criteria while comparing. This section covers in which ways it affects participants' decision-making process.

Most of the participants stated that clothes should be worth its price, and they further explained the concept of 'worthy price'. According to their statements, this worthiness depended on the fabric material of the clothes, and its selling and liked rate.

One of the participants indicated that he compared the clothes to other items that would be bought at the same price, whether it was clothing or non-clothing, and chose whichever seemed more functional and sensible to buy for him.

In addition, the discount rate was found to be an important factor in decision making. Participants stated gravitating towards options with higher discount rates on similar types of clothes.

> *"I add the clothes I like to my favorites. Suppose there is a discount on similar products, and the discount rate is higher in one of them. In that case, my preference may be in that direction instead of a lower price." (P12)*

Opinion about looks. This sub-category included how others' opinions about wearers' look affect the decision process. 'Others' involves the participants' shopping mates, which could be friends, partners, or parents. In the physical shopping context, it was revealed that if participants go shopping with a companion, they called them to the fitting room after trying clothes on. Most of the participants pointed out that even though others' opinions were important for them, the final decision was theirs.

> *"When my friends say 'What are you going to do with it? It is necessary' I say I like it, and I'll take it. In other words, I ask my friends' opinion, but I make the final decision." (P05)*

For the online shopping context, the way of asking others' opinions was quite different. As mentioned in the 'Comparison' section, participants sent the link of

clothes, screenshots, or photos of clothes to their friends. Then, they asked their friends whether the clothes would look good on them or not.

> *"I ask my friends their opinions first. Afterward, I offer them options. According to what has been said, I make my choice. I usually send photos via WhatsApp and ask which one I should buy, or which one would look on me?" (P08)*

Others' experiences. This sub-category examines how others' clothes shopping experiences affect participants' decision process. 'Others' includes participants' networks and other people, they do not know, who bought clothes before.

> *"I ask my friends about the brand I want to buy. I ask them whether they know or wear any clothes from that brand. For example, I ask how this brand's t-shirts are, do they wear out quickly. I sometimes ask whether the trousers of the brand wear out quickly or lose color." (P12)*

> *"For instance, I see clothes on my friends, and I say, 'How beautiful it is, where did you get it?' These conversations with my friends happen a lot and influence me. When I talk to them about clothes, I realize my needs. Then, I go and buy them." (P10)*

In addition, sometimes, participants' friends suggested them clothes they have experienced and be satisfied. In the online shopping context, the participants indicated that they learned about others' experiences through comments under the clothes. Even some participants stated that they did not prefer to buy clothes if there was no comment.

> *"Sometimes even if I like the clothes very much, I don't buy it if there are no comments." (P08)*

Additionally, comments with a photo helps them better understand the clothes' fabric and cutting style by enabling seeing the clothes from different angles and lights.

"Maybe the online store that sells the product also change the photos to make it look better. When I see the photos of other people wearing the clothes, I actually get more information about the product." (P12)

Based on statements, participants look for comments with photos to see how the clothes looked on others and figure out how they would look on themselves. Moreover, although they look at size guides and the sizes of the model wearing the outfit, other buyers' comments, including sizing information, help them find the 'right size' for them. They try to decide which size would be more suitable for them by looking at comments involved or close to their weight and height.

While making decision, some participants indicated that they thought about the possible combinations with their other clothes.

"If I want to buy a t-shirt, for example, I try to think about the combination of trousers and shoes that I can wear together." (P11)

v) Order (online shopping)

'Order' category included which information participants needed to get about ordering during the online shopping process. In Turkey, e-commerce websites and apps must specify the return policy in the 'sales contract'. While some participants indicated that they received information about the return policy at this stage, some prefer to get it from the 'FAQ' section of the website. The participants also emphasized that clothes with free shipping for returning back were preferable for them.

vi) Payment

'Payment' category includes payment methods that participants prefer to use in both online and in-store clothes shopping. Although most of these methods are in common for both, there are also differences. Therefore, 3 sections were created: common payment methods, payment methods for in-store shopping, and payment methods for online shopping.

Common payment methods. The most preferred payment method was a credit card. Some participants stated they used a credit card for in-store shopping, and nine of them stated they also used it for online shopping.

Even though it was not favored as a credit card, a debit card was also a trend payment method among the participants' preferences. While three participants selected to use it in-store shopping, only one of them used it also for online shopping.

Only one participant mentioned that she used gift card.

> *"Sometimes, when the company gives gift cards as a new year present to employees, I use gift cards." (P07)*

Payment methods for in-store shopping. Two participants stated that they used cash rarely. Also, three participants indicated that they preferred contactless payment, even if a debit card or credit card. On the other hand, contactless payment included not only credit and debit cards, but also many devices having NFC technology, such as smartwatches and smartphones. Among all participants, two participants mentioned that they paid through their smartphones by using bank applications.

> *"My phone is mostly in my hand, or somewhere I can easily access it compared to my wallet. That's why I make contactless payments via my phone." (P01)*

Payment methods for online shopping. One participant mentioned using wallet features of app. As she did not have any credit card, she stated that she used her bank card to transfer money into wallet in-app.

> *"I usually use wallet feature of the app by transferring money from my debit card. Therefore, I can save money for each shopping, and use it in next purchases." (P08)*

Another payment method used in online shopping was a virtual card. Three participants mentioned that they used it. Two of them also highlighted that they did

not trust some websites if they are not familiar, so they used virtual credit cards for safety precautions.

4.3.4 During-shopping Phase Takeaways

In this section, the during-shopping phase is examined, along with the researcher's insights. It is seen that, depending on the shopping purpose of the participants' actions, their strategies changed. Although the goals were specific, it was seen that the participants could have difficulty in performing these actions at some points. These points represent the 'pain points' examined in the study. In other words, the participants' failures to achieve their 'goal' or 'task' create 'experience breakdowns' in the clothing shopping experience.

In the online shopping context, specifically at the search stage, matching words written to the search bar with products' names on the website/app was important. Otherwise, participants had difficulty finding what they looked for and got frustrated. Inevitably, this situation caused an experience breakdown.

Similarly, in the in-store shopping context, it was noticed that inability of users to find specific types of clothes they looked for in the store affected their experiences negatively. In addition, not being able to touch the fabric of clothes, not trying on, and not being able to predict whether it fits or not are considered as possible pain points. However, thanks to size guides and information provided by websites or apps, it has been observed that the model's dimensions, the size of the clothes worn by the model, the dimensions of the clothes help the participants in the comparison and decision-making process.

When stages in online and in-store shopping were examined together, it was noticed that participants took different actions to achieve similar goals. For instance, users' going towards the discount rack in stores, filtering discounted products, and sorting them by the discount rate in online shopping were similar. Both reflect the similar shopping strategies of the participants.

In addition, it can be said that most sellers and most favorite sorting in online shopping show participants' interests in other people's choices. Participants' interests in other people's likes and choices were not limited to this. As examined in detail in the 'Others' experiences' section, it can be said that participants gave importance to the experiences of other people by reading comments and paying attention to the number of likes and ratings in online shopping.

The participants, who did not prefer a companion for in-store shopping to decide independently, preferred to make their own decisions in the online shopping context. Although they also do not prefer to ask others' opinions, some of them stated that they read the comments when they want to have knowledge about 'others' experiences'.

It was seen that the participants benefit from comments with photos and models wearing clothes in order to better understand the look of the clothes in online shopping. In the in-store shopping context, mannequins wearing clothes and models' posters on stores' walls might be the ways of getting this knowledge. However, as the number of mannequins was limited in stores, participants could not see the look of many clothes in stores. Therefore, this limitation is considered as an experience breakdown for in-store shopping, and it can be developed by using new technologies mentioned in the literature, especially AR. Furthermore, it was inferred that instead of putting same size mannequins in the stores, using mannequins in many different sizes is a better strategy to enhance user experiences in in-store clothes shopping.

In addition, based on the data retrieved from the interviews, participants need to search the reviews on clothes they wanted to buy and the others' feedback on the size of the clothes, including their height and weight information. Therefore, user interfaces of clothes shopping websites and applications would be considered through these inferences. Besides, it was noticed that the participants do not rely on the size suggested by the app based on the height and weight information given by the participants when they log in to the application. Some participants highlighted

that they need to have information about the return policy of the shopping channel as some clothes types cannot be returned, such as underwear and vintage.

Finally, in the payment stage, the checkout lines in stores were the reason for not to prefer shopping from the stores for many participants. It was seen that the duration of time they spend on the line causes them to worry more, especially due to the pandemic. They consider the time they spend in checkout lines as 'wasting time', even before the pandemic. This makes online shopping more preferable for them. In other words, it can be said that the 'payment' process in-stores should be improved as it creates experience breakdowns.

4.3.5 Post-shopping Experience

Post-shopping experience includes participants' actions and feelings after purchasing. As shopping processes are slightly different for online and in-store shopping, post-shopping experiences also vary. The main four categories examining in post-shopping experience context are 'Delivery process', 'Trying on at home' and 'Dissatisfaction', and 'Solution' (see the Figure 4.20).

i) Delivery Process

This category included participants' actions and feelings during the delivery process. Regarding this, it consisted of two sub-categories: 'Following delivery activities' and 'Feelings during the process'.

Following delivery activities. After ordering, half of the participants stated that they followed the delivery activities until their order arrived. Besides, they indicated that they changed their addresses or ordered another day depending on the estimated delivery lead time.

> *"These days, I order to an address according to my work schedule. As I work some days remotely, I calculate when it would arrive. I mostly select my office as my address. Even if I am not at the office, there is always someone who*

can pick up the cargo on my behalf, so even if I am at home, I tell the office and pick it up when I return to the office. Otherwise, if I am not at home, no one at home can pick up the cargo, then they send it back; I have to go to the firm's location and get it." (P05)

Feelings during the process. Based on participants' statements, curiosity, and excitement of having new clothes were predominant emotions. However, some participants noted feeling disappointed and worried if there is a delay in the delivery process or unexpected situations (cancellation, being undeliverable, etc.). On the other hand, when the participants trust the preferred shopping channel, they thought that they would not have any problems, so they did not worry.

ii) Trying on at home

Understanding when the participants try-on the clothes they ordered was important since there was no option to 'buy the clothes after trying-on' in the context of online shopping. Besides, finding out whether participants put the clothes in their closets without trying-on or not, and if they try, revealing their considerations were essential.

According to participants' statements, they had hygienic concerns due to the COVID-19 pandemic. Therefore, some participants emphasized that they tried on the new clothes after a while or after disinfecting them. Even in the in-store shopping context, clothes might be washed before being placed into the wardrobe.

"Previously, I used to wear the new clothes directly, this changed during the pandemic. I make them wait on the balcony for 4 hours, then I try them. If the clothes I try on are fine for me, I put them in my closet after washing." (P07)

In addition, some participants articulated that they had to try on clothes first instead of removing their tags and starting to wear them. The reason for this obligation was that many companies (in Turkey) reject returns if clothes are washed, or their tags are removed.

Figure 4.20 Headings under 'Clothes shopping experience: post-shopping phase'

iii) Dissatisfaction

This category covers what makes participants dissatisfied during post-shopping process. Half of the participants stated that they mostly had clothes size problems. They also pointed out having this problem most when buying trousers, regardless of gender. In other words, the frequency of having size problem may differ depending on the clothes type. For instance, they declared having less size problems about daily/casual clothes. Although they could result from different reasons, considering all statements, reasons could be listed as follows: Brands' size standards, fabric of the clothes, cutting style of the clothes, and its suitability to body shape of the participant. Furthermore, female participants articulated that although look of the clothes seemed fine on the model, there might be an undesirable look when they wore the same clothes.

It is an undesired situation for some participants that the ordered clothes were previously worn by someone else. Although this may not be a concern in in-store shopping, participants stated they felt "worthless" when it happened in the online shopping context. In addition, it was observed that having a defect on ordered clothes negatively affected the participants' experience. It was noticed that if the fabric was not durable to use, that is, becoming unstitched after first washing or color loss of the fabric, participants' attitudes were negatively affected towards the channel they selected for online shopping.

Some participants stated that they thought the product fits them perfectly because of the spotlights and the angle of the mirrors in the fitting room. After encountering very different views at home, they indicated they have second thoughts. Besides, others' negative feedback about their look also resulted in second thoughts about clothes.

iv) Solution

In this category, participants' reactions to unsatisfied situations and problems in post-shopping context were examined. Based on participants' answers, it was noticed that

if participants had any problems or dissatisfaction after shopping from stores, they mainly chose to change clothes from the store. The most favored reason for the change was size.

> *"Since I bought it from the store, it is easier to change it there." (P02)*

In addition, while some participants stated they prefer to return clothes back as a first solution, some participants stated that instead of returning clothes back, they preferred to change them even if there was physical damage on the clothes, such as defect, unstitched or color loss. On the other hand, some participants said even though they needed change, they had to return it first while shopping online since there was no option to change without return.

> *"I cannot change where I shop online, therefore, I have to return it and buy it again." (P08)*

Some participants said that when they had problems with the size or height of the clothes, they went to the nearest tailor and have it fixed instead of changing or returning them. Likewise, one participant stated that when she had similar problems, she made reparation/alteration by using sewing machine at home.

Some participants said that when they had problems with the clothes they bought, particularly online, they continued to wear them at home because it was very exhausting for them to return clothes. When asked why it was exhausting, the reasons were; their unwillingness to deal with the couriers, the difficulty of filling out the form through the application/website to return, and the difficulty of going to the delivery company's location.

4.3.6 Post-shopping Phase Takeaways

In this section, the post-shopping phase is summarized along with the researcher's insights. In the post-shopping phase, it can be said that the main stage that separates in-store shopping and online shopping from each other is the delivery process. Even

though how much information users need changes in this process, it is possible to talk about disappointment and anxiety in cases where the information is not sufficient. For instance, it was seen that not delivering online orders to the cargo within the promised time or lack of information about delivery movements can make participants concerned. Therefore, it can be said that accessing information about delivery processes is significant in the post-shopping phase for people.

Although 'trying on at home' was a stage in the post-shopping phase, it can be said that it became a pain point, especially for the participants who could not use the fitting rooms in the store due to the pandemic. In other words, being unable to try the product in the store due to the unavailability of the fitting rooms is an experience breakdown for the clothes shopping experience in the in-store context.

It was noticed that participants' post-shopping dissatisfactions mostly occurred in the context of online clothes shopping. While the dissatisfaction was caused by the participants' second thoughts and others' negative feedback in the in-store shopping context, it was seen that there were problematic clothes, or the participants had some troubles with them in the online shopping context. On the other hand, it was realized that some of the problems mentioned under the 'dissatisfaction' sub-category would be avoided if participants were well-informed. By considering participants' ways of getting information, it can be suggested that using photos of clothes worn by models in different sizes might be helpful to understand the look of clothes on different body sizes.

When the participants' attitudes towards these problems were questioned, mainly three approaches were seen: change/return, continuing to wear in different contexts, and local solutions, that is, making repairs and alterations at home or a tailor.

4.4 Discussion

This section includes discussion on the changes in participants' clothes shopping experiences in online and in-store contexts considering COVID-19 pandemic

restrictions. Besides revealing customers' experience breakdowns in both contexts, pain points that can be used by designers and service providers to enhance the clothes shopping experience are presented.

The main topics considered as vital for this study were examined under the four headings: effects of the COVID-19 Pandemic, shopping channel preferences, needs in relation to clothes shopping, and others' influence on shopping experience

Following this, several design recommendations related to each phase of the experience were proposed by the researcher.

4.4.1 Effects of the Pandemic

In this fieldwork, the COVID-19 pandemic is considered as a constraint that is limiting the clothes shopping experience, but at the same time as a factor enabling different ways of shopping. Additionally, it was concluded that the participants' different clothes shopping experiences through their channel preferences may create permanent changes for the post-pandemic period and provide opportunities to design for shopping experiences along with the interactions.

COVID-19 pandemic has caused several concerns for the participants for shopping in-store. For example, hygiene concern in stores and anxiety of being in a crowd. As a result, there were participants who did not prefer to go to physical stores and gave priority to online shopping channels, while those who were already using online channels continued to do so. The participants, who had to go to stores wanted to spend as little time as possible, and therefore they made online search in the pre-shopping phase. Accordingly, a noticeable number of participants preferred to do webrooming.

It was also mentioned by the participants that due to pandemic, they avoided touching or trying on products in stores as much as possible. This shows that while participants prioritized their sense of sight, they restricted themselves to touch. They

only preferred to touch when they find the clothes worth for sensing by touch or feeling obligated to try at the purchase decision stage.

4.4.2 Shopping Channel Preferences

As mentioned in previous chapters, the clothes shopping experience is a process that can be defined according to customers' shopping channel preferences. Therefore, in the online questionnaire, the participants were asked for ‘best description' of their clothes shopping experience. The options presented to them were created in line with the preferences of the participants at the pre-shopping and during shopping phases. In this study, it was important to understand what these preferences were and how they have changed, in order to make predictions about how they may shape future experiences.

Therefore, while the online questionnaire provides quantitative data on the participants' preferences, the data retrieved from interviews allows gaining an in-depth understanding of their preferences.

In the first part of the interview, the participants were asked to rank the cards representing shopping channels. This was to understand how their channel preferences and priorities had changed during the pandemic as well as the factors behind these preferences. Although the pandemic was one of main reasons affected users' preferences, there were several other reasons.

One of the important findings was that the participants wanted to shorten the time they spent in store by doing an online search before going to stores, which can be considered as ‘webrooming'. The participants, who continued to go to physical stores during the pandemic, stated that they sometimes went to the store only to see the clothes instead of purchasing. This was because the long checkout lines in the physical stores and the difficulties encountered while searching for a particular outfit. This way of shopping can be considered as ‘showrooming'.

The reasons leading to the participants' channel choices should also be taken into account while designing for better shopping experiences. Regarding this, the interview results show that paying online and picking up from a store became popular during the pandemic period. In this option, different from webrooming the payment also takes place during online shopping, therefore it can be considered as a new shopping experience. Getting faster reactions to users' problems having with the clothes and to provide solutions to these problems might be the advantage of this experience.

4.4.3 Needs in Relation to Clothes Shopping

In the first phase of the study, an online questionnaire, the participants were asked whether they carry out any research before shopping, and if they do, what they would like to learn about the clothes. During the interview sessions, the participants were also asked about what information they benefited from in online and in-store shopping, and which of their five senses they employed to reach this information. Accordingly, this section, presents discussion about the findings under the following headings: i) need for informative labelling, ii) need for touch, iii) need for body-image awareness, and iv) need of assistance.

i) Need for Informative Labelling

'Need for informative labelling' can be defined as the participants' need for clearly labelled information about the clothes. Through the tags and labels attached or stitched to clothes, it can be possible to access for example, price information, fabric material (composition), size, size range, caring information, and the place of manufacture. In-store context, as this tag exists physically, participants can easily reach the information they need. However, as indicated by the participants, shopping websites/apps do not always include sufficient information. Besides, as they cannot evaluate the clothes in a physical environment, it becomes difficult to understand the size information and cutting style of the clothes. Therefore, lack of information about

the clothes affects the shopping experience negatively. Answers to the questionnaire revealed that, price, fabric material (composition), and size information of clothes were the most significant 'tag information' participants needed to know in the pre-shopping phase. As revealed during the interviews, information about fabric material was vital to compare products with each other, and also for decision-making.

The interview results also revealed that the clothes with high percentage of cotton fabric were the most preferred ones. In fact, some participants stated that they preferred clothes made of 'non-sweaty' and 'healthy' fabric, therefore, they care about accessing this information while shopping online.

ii) Need for Touch

In this section, participants' getting information about clothes through their sense of touch, and its importance in this experience were discussed for both online and in-store shopping.

In the online questionnaire, the participants were asked to indicate in which ways and why they search about clothes. Besides the tag information, the participants (34 out of 132) indicated that they prefer going to store to see and try-on (30/132) the clothes. It was not surprising to find out that sense of touch was important in clothes shopping experience. To better understand at what stages of shopping the participants especially had a need to touch they were directed questions. In follow-up questions, they were also asked whether this need could be fulfilled in any other ways, and how the lack of touch affected their feelings and experience.

Some participants emphasized that they visited stores when they liked specific clothes during online shopping but were unsure about the fabric's texture, thickness, or how it would feel. In other words, not being able to touch or try the clothes in online shopping create a 'pain point' for both the 'searching' stage due to lack of information, and the 'decision' stage as it causes a doubt. However, it was noticed that the close-up photos of the clothes in online shopping channels made it easier to understand the fabric's texture by recalling memories about previous experiences of

wearing or touching to similar fabrics. Therefore, using close-up photos of clothes might have a positive effect on this experience.

Another finding was that trying the clothes on was regarded as a way of making comparison between different clothes. Comfort and fit were two of the aspects that they compared most. The experience breakdowns caused by not being able to try on the clothes are discussed in the subsequent section.

iii) Need for Body-image Awareness

'Need for body-image awareness' can be explained as people's awareness of their own body measures to choose suitable clothes without having need to try them on. In online clothes shopping context, people use the information listed about the clothes such as size guides, and model's size wearing the clothes. Particularly, during the COVID-19 pandemic, fitting rooms in the stores were out of use for a while in Turkey. During this period, some of the participants did not visit the stores, because it was not possible to try the clothes on and/or because of hygiene concerns. The ones who visited the stores mentioned that in order to avoid a physical contact, they tried to guess whether the clothes would fit them by just looking or by studying the clothes put on a mannequin. Nevertheless, appraising the clothes in a physical environment might help the participants to decide the size despite not trying. Obviously, this was not an option for online shopping. Therefore, not being able to try on clothes in online shopping is considered as a constraint that negatively affects the experience and may cause experience breakdown.

The participants, who considered not being able to try on clothes as disadvantage of online shopping, were asked about what alternative solutions they have. The answers show that, the participants use several approaches to compensate. For example, studying the photos to decide on the size of the model, the size of the cloth worn by the model, other dimensions of the cloth (e.g. length, waist, etc.), the size guide of the brand presented on the page, and others' comments including body measurements and size selection information. The common point of these options was that they require people to be aware of their body-image.

Although it is difficult to indicate an important or prominent option, the participants repeated some options multiple times. When the popularity of these options was questioned, it was seen that they were widespread in shopping applications and websites. For example, when the size of the model wearing the clothes and the size of the clothes were given, the participants tried to understand the right size for them by using this information. However, it was seen that the sizes of the clothes worn by the mannequin were mostly small and medium. Consequently, participants with different body types looked for the measurements of the clothes to understand the right size, or they tried to reach the size information of others to compare and find their size.

The findings show that presenting the clothes photos worn by more than one model with different body measures can improve finding the best fit clothing in online shopping. In addition, after buying and trying on the clothes, users can specify their height and weight range through features of the app or website, and this feedback can create the right size range for prospective users.

Some websites use a 3-point Likert scale (Small, Spot-on, Large) to determine how well the clothes fit to their users by taking user feedback, they still seem insufficient as there is no information given about how big or small the sizes of the clothes are. Therefore, using a wider range scale, such as a 5-point Likert scale, would be sufficient for this process.

iv) Need of Assistance

Another finding for the study was the participants' need of assisting during in-store shopping. It was noticed that when participants cannot find the clothes by searching through the search bar in the online context, they follow categories or vice versa. Conversely, an interesting finding was that the participants said they did not prefer to use virtual assistants in online shopping. One participant argued that virtual assistants never made it possible to reach the product they wanted, and that it was a waste of time. On the other hand, several participants emphasized that they needed

to be assisted when they could not find what they were looking for, particularly while searching for outfits with high costs.

4.4.4 Others' Influence on Shopping Experience

According to the data retrieved, the social context of the participants affects their experiences. Therefore, in this section, others' influence on people's shopping experience was discussed under 3 headings: i) opinions of other people, ii) presence of other people, iii) experiences of other people.

i) Opinions of Other People

'Opinions of other people' can be explained as what other people thought about the clothes that participants like and participants' look when wearing the clothes. Other people include somebody that shoppers know, for example, their friends and relatives.

It was quite common for the participants to go for a shopping with a companion to bounce ideas in the store. On the other hand, some participants said that even the times they had no companion, they share photos of the clothes they like or try on in the fitting room with their friends to ask for their feedback. Similarly, in online shopping, the participants said they send a screenshot or a link of the clothes they like, taken on a smartphone or web, to their friends and relatives to ask their opinions.

Another finding of the interviews was that while the participants mostly sent images when they asked an opinion about the general look, color, and style of the clothes. On the other hand, they preferred sending the links of the clothes when they asked people to criticize fabric material, price, rating, and reviews. In fact, instead of sharing many clothes one by one, one of the participants indicated she gathered all clothes together in a link and shared it.

Consequently, it was inferred that being able to determine the sharing options and features was important while asking for opinions in the online clothes shopping experience.

ii) Presence of Other People

'Presence of other people' is a factor affecting the participants' in-store clothes shopping experience. The companion of the participant, people shopping or in the stores or people working in the stores can be considered as other people.

The presence of people in the stores can create a crowd, and this became a worry for some participants who had hygiene and health concerns during the pandemic. As mentioned by some of the participants, the crowd in the stores made clothes searching and finding an available fitting room much harder. Besides, some participants did not like hearing the unwanted comments from others in fitting rooms, including the shop assistants; this caused them to avoid going to the stores when possible.

While some participants preferred to be accompanied by someone, some of them did not. The former group stated that they asked their companion's opinion during shopping, and then shopping became an activity they had a good time. The latter group stated that they were negatively affected by the presence of others next to them. Therefore, they had difficulty while searching for clothes and deciding. Consequently, it is possible to say that the presence of other people has considerable effect on users' clothes shopping experience, albeit positively or negatively.

iii) Experiences of Other People

'Experiences of other people' describes experience sharing of other people who have bought the clothes before. This sharing can be done through written comments, comments with photos in online shopping websites/apps, or verbal.

The results show that experiences of others inspired the participants in the pre-shopping phase and affected their decision-making process during shopping. The participants said that they found it helpful if people who bought the clothes before

shared their comments on shopping websites/apps. In other words, verbal descriptions about the clothes' fabrics and materials can be helpful for people to gather cues about haptic information and make it easier to overcome the lack of touch in online shopping (Rodrigues et al., 2017).

The result also revealed that people in participants' social circle also shared their experiences with them if the experiences were pleasant. Some participants expressed that they were inspired to shop when they saw an outfit on their friends' and influencers' social media platforms. These findings are also in accordance with the claim that the tendency of new generations to rely more on their social environment than on brands (Costa Silva & Coutinho dos Santos, 2013).

The participants, who read the comments of others about clothes, stated that it was important for them to learn others feedback' about the fabric of the clothes and get tips for size selection. They also wanted to be aware of what kind of problems others experienced regarding the clothes and the shopping process.

It was observed that when users share their photos and add hashtags (#) for the brands of the clothes they wear on their social media accounts, the tagged brands can share such photos (if the account owner's privacy preferences allow to do so) as: 'styled by you' or 'coming from you' on their social media accounts. Therefore, when people cannot see the photos of clothes wearing by a mannequin that represents their body type, they can make a search on their social media accounts and by following hashtags. For example, during the interviews, a participant mentioned making use of hashtags to search for clothes on Instagram. Therefore, social media platforms have the potential to enhance the shopping experience as they present good opportunities for searching, learning others' experiences, and allowing users to share their own experiences.

In summary, experience sharing is central to clothes shopping process, especially in the pre-shopping and during shopping phases. In fact, the interactive sharing environment can provide people seamless experience, particularly to omni-channel users.

CHAPTER 5

CONCLUSIONS

This thesis aimed to analyze online and in-store shopping experiences taking a user journey approach. With the technological developments, the shopping experience is constantly changing; hence, the interactions are reshaped. This experience is also significantly affected by the COVID-19 pandemic due to global restrictions. Therefore, the study focused on examining the challenges that have occurred in the clothes shopping experience considering the restriction of senses and exploring potential opportunities enhancing this experience.

To provide answers to the research questions introduced in Chapter 1, literature review was carried out (see Chapter 2). First, shopping activity is investigated through shopping channels, followed by existing and emerging technologies relevant to shopping. Then technology acceptance phenomenon is studied. As the research carried out during the COVID-19 pandemic, potential implications are also discussed. Accordingly, clothes shopping experience was redefined in terms of user experience, and explored along with the factors affecting this experience.

Following the literature review, two-phase fieldwork was designed with a structured methodology (see Chapter 3). In the first phase of the fieldwork, an online questionnaire, including questions on demographic information, Technology Readiness Index (TRI), and general clothes shopping experience, was conducted with 132 participants to understand the participants' tendency to new technologies and shopping channels preferences. In the second phase of the fieldwork, semi-structured interviews were carried out with 12 participants to gain an in-depth understanding of users' clothes shopping experiences by taking a user journey approach. Consequently, besides quantitative data gathered from the online

questionnaire, the collected data from interviews were analyzed, and the findings were presented along with a discussion in Chapter 4.

This final chapter revisits the research questions, presents the researcher's insights, limitations of the study, and recommendations for further research.

5.1 Revisiting the Research Questions

In this section, the research questions presented in 'Chapter 1: Introduction' are revisited, and detailed answers are given. The research questions were answered by combining the findings from literature and fieldwork.

Q1.Which channels do users prefer to shop for clothes currently? Why? And How does channel preferences shape users' clothes shopping experience?

In the literature review, potential shopping channels and current trends in shopping channels were presented. Parallel to advances in information communication technologies (ICT), and adaptation of people to technologies, internet usage, has increased. Therefore, more people started to use online services, and more online shopping activities started to occur. Previous studies focused on shopping in general rather than clothes shopping in particular. Nevertheless, the most featured and rising trend in shopping channels was omni-channel shopping, which refers to using multiple channels during shopping.

When shopping activity was reviewed in the marketing discipline, people's purchase intentions were the focus. Accordingly, people's shopping channel choices heavily rely on time and cost. However, particularly in clothes shopping, it was seen that reaching the information about the clothes was considered important for shoppers. Despite these findings, existing research found to be insufficient to relate the reasons for choosing clothes shopping channels with user experience.

According to the questionnaire results based on 132 participants' answers, 'completely online clothes shopping' was the most preferred channel by participants

(59.9%). Likewise, all interview participants (12) indicated that they preferred to make clothes shopping' completely online during the pandemic even though ten of the participants did not prefer it as a first choice before the pandemic. Other shopping preferences were as follows: in-store shopping (15.9%), showrooming (14.3%) and, webrooming (9.9%).

Although showrooming and webrooming are both considered as cross-channel shopping, to better understand the participants' channel choices, pre-shopping phases of their clothes shopping journey were examined in detail. Briefly, these reasons were emerged as *needs, being inspired, positive experiences,* and *limitations/restrictions.* (see Figure 4.18, p.70 for more detail). Further explanations of each reason were mentioned under pre-shopping experience (see Section 4.3.1).

In addition, it was noticed that participants used different channels simultaneously during shopping, which is called omni-channel shopping. In clothes shopping context, this behavior was associated with various factors. First to mention was *information seeking,* including looking for further information about clothes such as others' experiences, or label information. Another one was *seeking for sensorial experiences* such as seeing, touching the clothes, or trying them on. Information seeking and seeking for sensorial experiences were also related to each other as several types of information can be obtained through senses. *Social interaction seeking* also had an impact on shoppers' cross-channel choices. It refers to sending images/links to their friends, relatives and asking their opinions. Although this was commonly preferred in online shopping context, it was seen that although participants prefer to go store alone, they look for social interaction through their smartphones. Similarly, being accompanied was a type of social interaction in physical store shopping context. As also explored during the literature review, the accompanied shoppers tend to prefer showrooming since the searching can be performed in physical stores while purchasing in online channels.

Reaching the required information was considerably important in clothes shopping experience. Different shopping channels may provide different types of information

related to clothes, such as size guides and reviews on online channels. Therefore, shoppers could benefit from them at the different stages during shopping. Besides, related to their expectations and what they seek, cross-channeling may enhance their clothes shopping experience by providing different opportunities for possible breakdowns during the shopping experience. Furthermore, this cross-channel shopping resulted in redefinition of the shopping ways depending on people's pre-shopping and during-shopping preferences.

Q2.What are the potential touchpoints in the clothes shopping experience for online and in-store clothes shopping? In which stages do they differ from each other?

In order to explore shoppers' potential touchpoints (points of contact) in the clothes shopping experience, the user journey approach was followed, and a journey map was designed for online and in-store shopping processes separately. After carrying out the literature review, the first version of the journey map was prepared and then revised to better suit the clothes shopping experience after analyzing pilot study results (see Section 3.9). The revised version of the map was used during the interviews (see Section 3.4.2.1).

Based on the results of the fieldwork, users' touchpoints for in-store and online clothes shopping in relation to Pre–, During–, and Post–experiences are illustrated in Table 5.1. As it can be seen, both in-store and online clothes shopping had common stages, which were inspiration, choice, comparison, decision, payment, and dissatisfaction. The stages that they differ from each other can also be seen in Table 5.1.

In the pre-shopping phase, while people might have a *companion* for store shopping, in online shopping context, it did not appear. In addition, online clothes shopping was required internet usage, and *devices* eventually.

Table 5.1 Touchpoints in online and in-store clothes shopping contexts

	In-store Shopping Context	Online Shopping Context
Pre-shopping phase	Inspiration	Inspiration
	Search for store	Channel/Device
	Companion	Plan
During-shopping phase	Search	Search
		Information gathering
	Choice	Choice
	Comparison	Comparison
	Decision	Decision
		Order
	Payment	Payment
Post-shopping phase	Social Activities	Delivery
	Wearing	Wearing (at home)
	Dissatisfaction	Dissatisfaction

In during-shopping phase, getting information about clothes was featured in the online clothes shopping context. In physical stores, people might have the opportunity to get information about clothes' color, cutting style (such as sleeves), and more by looking and seeing, without making an extra effort. Besides, online clothes shopping includes *order* stage during shopping phase. Accordingly, in post-shopping phase, *delivery* and *trying at home* took part in online shopping context.

On the contrary, in-store context might involve *wearing* the clothes after buying, and *social activities* in post-shopping phase.

- ***What are the pain points of the online and in-store shopping in terms of user experience? In which aspects do they dissatisfy the needs and expectations of users?***

As the touchpoints were explored for in-store and online clothes shopping contexts separately, pain points, which can easily turn the overall experience negative, were also examined for each of them separately.

When in-store clothes shopping experience was considered, the first pain point was *not to find the location of the clothes due to lack of guidance or unclear instructions in store*. If shoppers knew what they came for or had a specific type of clothes in their mind, they tend to find the relevant department/rack instead of walking around. Therefore, they needed to be guided or given instructions.

During COVID-19, fitting rooms in the physical stores were closed in Turkey. Therefore, people were *not able to try the clothes on*. This was also defined as a pain point in-store clothes shopping experience. However, as online shopping could not provide the option of physically trying on, it was also a pain point in online clothes shopping experience. Similarly, *hygienic concerns due to COVID-19* resulted in not preferring touch or trying on clothes. Payment was one of the touchpoints in clothes shopping experience. Research results showed that *the time spent waiting at the payment queue* negatively affected this experience.

Different lighting and mirror placements in the fitting rooms could cause misperceptions about the look. This led to participants being dissatisfied with the clothes they bought when they looked at their mirror at home, although they were satisfied by the reflection in fitting rooms.

One of the pain points in the online clothes shopping experience was the inability to find the clothes by searching with keywords through a search bar on the

websites/apps. As participants were unsure how the clothes were named in that website/app, finding the right keywords became a worrying and stressful process. Also, the participants needed to find the label information about clothes in online shopping. Therefore, *not providing label information* resulted in the participants' dissatisfaction and eventually became a pain point in the online clothes shopping experience. The participants stated that although they could not touch the clothes in online shopping, they wanted to see their high-quality photos to understand the physical features of its fabric (e.g., softness, opaqueness). As mentioned in the literature, this is called haptic information. Therefore, providing *low-resolution photos of the clothes* on websites/apps caused dissatisfaction, and it was considered as a pain point.

The participants needed to find their fitting size through tools/guides provided by clothes shopping websites/apps. When they had *difficulty in understanding the size of the clothes due to insufficient guidance*, they felt frustrated. Thus, it was determined as a pain point. Furthermore, having difficulty in comparing clothes due to insufficiency in the features of mobile apps/websites also caused dissatisfaction as the participants wanted to compare the clothes they selected in apps/websites. Lastly, as delivery time was important for the participants, the lack of estimated delivery time information made them feel disappointed.

Q3. In which ways can designing for clothes shopping experience be enhanced? Which technologies can be benefited from?

In order to understand in which ways clothes shopping experience can be enhanced, pain points create potential areas to give priority to concentrate on. The results of the fieldwork show that there are various pain points for in-store and online shopping, which are listed as part of the answer to Q2. Each of these pain points was tackled individually, and researcher's suggestions for possible improvements were presented in Chapter 4 with further explanations and examples.

For the physical stores, several improvements can be suggested to service providers, and designers. First, better and clearer instructions such as location of the specific type of the clothes, sizes and fabric types of clothes should be given in-store to find the desired clothes much easily. They can be given through physical or virtual signs, interactive screens, QR codes, and RFID sensors. As seen in the literature, some of them are already available, yet they are not widespread. When individuals' wide usage of mobile devices is considered, given information and instructions through smartphones should be the first step to take. These technologies should be integrated into physical clothes stores and used widely. Therefore, assisting needs of users also can be met.

Another pain point found out was payment queues. Although different practices have been implemented recently in both online and physical shopping contexts, such as online purchasing and physical pick-up, other practices that emerging technologies enable are needed to be worked on. For example, a well-developed showrooming practice can be designed by benefiting from IoT. It means, after reviewing the samples of clothes in-stores and getting haptic information about the fabric, cutting style, and color, users may complete their shopping by ordering selected clothes through their smartphones. In fact, their physical shopping journey history can be created, and users can benefit from it in their future shopping experiences.

At the beginning of the COVID-19 pandemic in Turkey, physical clothing shops were completely closed for almost three months. During this time, it was not even possible to go to stores. Then, the level of restrictions was decreased, and the shops opened, yet fitting rooms remained closed. Not being able to try the clothes on became a pain point in the in-store clothes experience. On the other hand, trying the clothes on had never been a part of the online shopping experience by its nature. Several apps using AR and VR technologies and aiming to provide users with sizing and fit of clothes were examined in the literature review. While some use AR software with a camera-equipped device to perceive the scene users stand and provide digital 3D clothes to wear virtually, some require several photos of users taken from different angles and create a virtual look with clothes. The common

weakness across these apps was the lack of precision in estimating the sizing and fit of users. Although these technologies need to be better developed to provide sizes to users, in the near future, they are expected to be used in a wide range in both online and in-store contexts. In fact, besides reducing the time spent in fitting rooms in physical stores, their implementation to online stores can help to reduce the negative impact of the inability to try on the clothes.

In addition, when physical stores have a smaller space to use physical mannequins with different body types, they may use virtual mannequins through AR technology. Although ZARA tried virtual models in its stores, users were not able to select the clothes to wear on. Instead, they could see models dressed in random clothes just like the physical ones. The AR-enabled virtual models can help users to gauge the look of clothes, and enabling selection of the clothes on the mannequins can enhance the decision process.

For online clothes shopping, using high-quality photos of the clothes help users to understand the fabric characteristics, which is called 'haptic imagination'. Therefore, high quality and close-up photos should be preferred in online shopping channels.

One of the pain points in online clothes shopping experience was being unable to find the clothes by writing on a search bar of the websites and mobile apps. According to interview findings, although participants knew the type of the clothes they were looking for, they did not know how they were named on the website/app. In order to overcome this problem, visual representations of clothes types should be provided. The representations can be in simple forms, such as icons to make it easier to understand.

As understood from the participants' statements, having knowledge on others' experiences had great importance on the overall shopping experience, particularly in clothes comparison and purchase decision stages. When the app features and websites used by participants were examined, results revealed the need for improvement in features related to receiving features from previous users. The widely used features were comments, comments with photos, and a star rating for

clothes. However, clearer feedback about clothes is needed. For example, instead of writing a comment saying, 'too wide', using a scale that indicates its level of wideness would be more beneficial for users to understand its size.

Although some online channels offer advanced comparing features such as categorizing most favorite products, UI of mobile apps should be designed to allow comparison of various features including label information of clothes, size availability, cutting style, and any other desired information.

Overall, this study presents an analysis of online and in-store clothes shopping experiences along with the effects of the COVID-19 pandemic on the increase of online shopping. Besides online shopping, AI-based technologies have reached the piqued interest in many areas, including fashion in this period. Particularly, AR applications have been on the rise with virtual 'try-before-you-buy' experiences (e.g., IKEA Place, TopShop's virtual fitting room) as they provide a fun and novel way of shopping. The COVID-19 pandemic has accelerated this shift to digital shopping, and it is expected to be on the rise. However, these technologies also help to enhance physical store experiences for clothes shopping. As in many examples given in the literature, such as ZARA's AR window displays and virtual models in physical ZARA stores, the physical clothes shopping experience was already boosted with technology. The recommendations in this study also validate the importance of technology integration in clothes shopping experience as technology-driven experiences boost convenience.

5.2 Insights Regarding User Journey Approach

In the present research, taking a user journey approach and using a journey map as a tool to gather information helped the participants to engage in the research during the interviews since their active participation was encouraged. The journey map also enabled the researcher to highlight the key points (e.g., points of interaction, pain

points) of the experience; therefore, it made it possible to have a holistic view of the clothes shopping experience.

The selected collaborative working tool, Miro, helped the researcher during the interviews to integrate the user journey map in a visible and interactive manner. It provided an online space during the interviews, and reduced the communication constraints of the online environment. Also, instead of creating concerns caused by unfamiliar tools, it became an enjoyable activity for the participants as they expressed their excitement and enthusiasm about the topic and the tool.

5.3 Limitations of the Research

There were several limitations and challenges experienced at various times during carrying out the fieldwork. The first limitation was related to the interview set-up. Initially, it was intended to conduct the interviews face-to-face. However, due to the arrival of COVID-19 pandemic restrictions, most of the interviews had to be held through online platforms. Although the use of online platforms has been increased generally with the pandemic outbreak, such as carrying out lessons online in schools and universities, and organizing business meetings online, the adaptation pace has not been the same for everybody. Therefore, it was foreseen that there may still be participants whose online meetings did not become such a natural part of their daily life during the running of the fieldwork interviews.

Nevertheless, the interviews were set up in a way to minimize these potential problems. Zoom was chosen as an online meeting platform, as it could work on any web browser without requiring installation. At the beginning of the interview, an introduction and orienteering were made for participants unfamiliar with this platform. After asking ice-breaker questions, Miro and the user journey map were introduced to the participants. Then, participants were encouraged to be active during the interview by adding post-its on the user journey maps – simulating real life. Thanks to this online space provided by Miro, online remote interviews could have

been conducted free from the constraints of physical location and meeting venue. In fact, since the interviews had to be conducted in a limited time, facilitating online interviews made location and time arrangements easier.

During some interviews, a few participants experienced problems with their internet connections. Although this situation caused the interview to take longer than anticipated, the participants stated that they got used to it as they had to attend many online interviews via Zoom during the COVID-19 pandemic, and the meetings were not affected in a negative way.

While Google Forms was preferred as a questionnaire tool in the first phase of the fieldwork, Miro, a collaborative working tool, was used during the interviews. Although the participants did not encounter any problem while using Google Forms, some participants had problems using Miro and its in-app features. Nevertheless, the researcher's calming attitude prevented participants from getting negative feelings, and instead of creating post-its, it was asked to write on the existing ones.

5.4 Further Research

This research reported in the thesis investigated online and in-store clothes shopping experiences from a holistic view by taking a user journey approach. Further studies can be conducted by focusing individually on the touchpoints included in this study to reach in-depth data to generate various enhancements.

Also, the research was conducted during the COVID-19 pandemic. Since the pandemic accelerated the digitalization in the World and affected even people's daily activities, habits, routines, and inevitably experiences, it created an environment that gave a great opportunity to research to understand and predict future changes. Therefore, further research can take advance of this study, and further explorations in a post-pandemic context can be investigated.

This study provided rich insights and recommendations to enhance user clothes shopping experiences. As time was limited, the researcher highlighted the most

prominent insights and offered enhancements and solutions to them. Nevertheless, the research revealed many subjects having the potential to be worked on. In the age of omni-channeling, various features and suggestions featured in this study can be implemented to both online channels and physical stores. Further research can focus on examining their impacts on the clothes shopping experience of users.

REFERENCES

Abhishek. (2016). Do time constraint and emergency purchase situation exert same influence on shopping? A study under haptic touch influence. *Journal of Retailing and Consumer Services*, *30*, 242–251. https://doi.org/10.1016/j.jretconser.2016.02.003

Adamopoulou, E., & Moussiades, L. (2020). Chatbots: History, technology, and applications. *Machine Learning with Applications*, *2*, 100006. https://doi.org/10.1016/j.mlwa.2020.100006

Alexander, B., & Nobbs, K. (2016). *Multi-Sensory Fashion Retail Experiences* (pp. 420–443). https://doi.org/10.4018/978-1-5225-0110-7.ch017

Alves, C., & Luís Reis, J. (2020). The intention to use e-commerce using augmented reality - the case of IKEA place. *Advances in Intelligent Systems and Computing*, *1137 AISC*, 114–123. https://doi.org/10.1007/978-3-030-40690-5_12

Alves, R., Lim, V., Niforatos, E., Chen, M., Karapanos, E., & Nunes, N. J. (2012). *Augmenting Customer Journey Maps with quantitative empirical data: a case on EEG and eye tracking*. http://www.tobii.com/en/eye-tracking-

Arnold, M. J., & Reynolds, K. E. (2003). Hedonic shopping motivations. *Journal of Retailing*, *79*(2), 77–95. https://doi.org/10.1016/S0022-4359(03)00007-1

Arora, S., & Sahney, S. (2018). Antecedents to consumers' showrooming behaviour: an integrated TAM-TPB framework. *Journal of Consumer Marketing*, *35*(4), 438–450. https://doi.org/10.1108/JCM-07-2016-1885

Atzori, L., Iera, A., & Morabito, G. (2010). The Internet of Things: A survey. *Computer Networks*, *54*(15), 2787–2805.

Bansal, M., Chana, I., & Clarke, S. (2021). A Survey on IoT Big Data: Current Status, 13 V's Challenges, and Future Directions. In *ACM Computing Surveys* (Vol. 53, Issue 6). Association for Computing Machinery. https://doi.org/10.1145/3419634

Baron, S., Harris, K., & Davies, B. J. (n.d.). *Retail service delivery: a comparison 75 Oral participation in retail service delivery: a comparison of the roles of contact personnel and customers*.

Biocca, F. (1997). *The Cyborg's Dilemma: Progressive Embodiment in Virtual Environments*. https://www.researchgate.net/publication/220438229

Biswas, K. K., & Basu, S. K. (2011). Gesture recognition using Microsoft Kinect. *ICARA 2011 - Proceedings of the 5th International Conference on Automation, Robotics and Applications*, 100–103.

Blázquez, M. (2014). Fashion shopping in multichannel retail: The role of technology in enhancing the customer experience. *International Journal of Electronic Commerce*, *18*(4), 97–116. https://doi.org/10.2753/JEC1086-4415180404

Borges, A., Chebat, J. C., & Babin, B. J. (2010). Does a companion always enhance the shopping experience? *Journal of Retailing and Consumer Services*, *17*(4), 294–299. https://doi.org/10.1016/j.jretconser.2010.02.007

Burrus, D. (2014). The Internet of Things is Far Bigger than Anyone Realizes. Retrieved from https://www.wired.com/insights/2014/11/the- internet- of-things-bigger/ , (Accessed 29 November 2021).

Campo, K., & Breugelmans, E. (2015). Buying Groceries in Brick and Click Stores: Category Allocation Decisions and the Moderating Effect of Online Buying Experience. *Journal of Interactive Marketing*, *31*, 63–78. https://doi.org/10.1016/j.intmar.2015.04.001

Cao, X. J., Xu, Z., & Douma, F. (2012). The interactions between e-shopping and traditional in-store shopping: An application of structural equations model. *Transportation*, *39*(5), 957–974. https://doi.org/10.1007/s11116-011-9376-3

Carroll, N., & Conboy, K. (2020). Normalising the "new normal": Changing tech-driven work practices under pandemic time pressure. *International Journal of Information Management*, *55*. https://doi.org/10.1016/j.ijinfomgt.2020.102186

Chandra, R. N., Febriyan, F., & Rochadiani, T. H. (2018). Single camera body tracking for virtual fitting room application. *ACM International Conference Proceeding Series*, 17–21. https://doi.org/10.1145/3192975.3192991

Chang, H.-T., Li, Y.-W., Chen, H.-T., Feng, S.-Y., & Chien, T.-T. (2013). LNCS 8007 - A Dynamic Fitting Room Based on Microsoft Kinect and Augmented Reality Technologies. In *LNCS* (Vol. 8007).

Chang, Y. P., & Li, J. (2022). Seamless experience in the context of omnichannel shopping : scale development and empirical validation. *Journal of Retailing and Consumer Services*, *64*. https://doi.org/10.1016/j.jretconser.2021.102800

Conway, M. W., Salon, D., da Silva, D. C., & Mirtich, L. (2020). How Will the COVID-19 Pandemic Affect the Future of Urban Life? Early Evidence from Highly-Educated Respondents in the United States. *Urban Science*, *4*(4), 50. https://doi.org/10.3390/urbansci4040050

Costa Silva, S., & Coutinho dos Santos, M. (n.d.). *Nº 02/2013 THE 3 C'S MODEL OF MILLENNIALS BRAND AWARENESS Martim Coutinho dos Santos Universidade Católica Portuguesa (Porto) THE 3 C'S MODEL OF MILLENNIALS BRAND AWARENESS*.

Cowan, K., & Ketron, S. (2019). A dual model of product involvement for effective virtual reality: The roles of imagination, co-creation, telepresence, and interactivity. *Journal of Business Research*, *100*, 483–492. https://doi.org/10.1016/j.jbusres.2018.10.063

De', R., Pandey, N., & Pal, A. (2020). Impact of digital surge during Covid-19 pandemic: A viewpoint on research and practice. *International Journal of Information Management*, *55*. https://doi.org/10.1016/j.ijinfomgt.2020.102171

Demarrais, K., & Lapan, S. D. (n.d.). *Foundations for Research Methods of Inquiry in Education and the Social Sciences TLFeBOOK*.

dos Santos, M. C., & e Silva, S. C. (2013). The 3 C'S Model Of Millennials Brand Awareness (No. 02). Católica Porto Business School, Universidade Católica Portuguesa.

Duarte, P., & e Silva, S. C. (2020). Need-for-touch and online purchase propensity: A comparative study of Portuguese and Chinese consumers. *Journal of Retailing and Consumer Services*, *55*.

eMarketer. (July 19, 2017). Number of digital buyers worldwide from 2014 to 2021 (in billions) [Graph]. In *Statista.* Retrieved December 28, 2021, from https://www.statista.com/statistics/251666/number-of-digital-buyers-worldwide/

Erjavec, J., & Manfreda, A. (2021). Online shopping adoption during COVID-19 and social isolation: Extending the UTAUT model with herd behavior. *Journal of Retailing and Consumer Services*, 102867.

Eurofound. (2020). Living, Working and COVID-19. Luxembourg: Publications Office of the European Union

Fagerstrøm, A., Eriksson, N., & Sigurdsson, V. (2020). Investigating the impact of Internet of Things services from a smartphone app on grocery shopping. *Journal of Retailing and Consumer Services*, *52*.

Fennis T. Exploring and implementing pleasant touch in the interface of products for design purposes: The case of a Bang & Olufsen remote control, MSc *Thesis,* 2012, Dept. of Industrial Design, Middle East Technical University / Delft University of Technology.

Field, T. (2014). *Touch*. MIT press.

Flavián, C., Gurrea, R., & Orús, C. (2016). Choice confidence in the webrooming purchase process: The impact of online positive reviews and the motivation to touch. *Journal of Consumer Behaviour*, *15*(5), 459–476. https://doi.org/10.1002/cb.1585

Flavián, C., Gurrea, R., & Orús, C. (2020). Combining channels to make smart purchases: The role of webrooming and showrooming. *Journal of Retailing and Consumer Services*, *52*. https://doi.org/10.1016/j.jretconser.2019.101923

Flavián, C., Ibáñez-Sánchez, S., & Orús, C. (2019). The impact of virtual, augmented and mixed reality technologies on the customer experience. *Journal of Business Research*, *100*, 547–560. https://doi.org/10.1016/j.jbusres.2018.10.050

Forlizzi, J., & Battarbee, K. (2004). *Understanding Experience in Interactive Systems*.

Foster, J., & McLelland, M. A. (2015). Retail atmospherics: The impact of a brand dictated theme. *Journal of Retailing and Consumer Services*, *22*, 195–205. https://doi.org/10.1016/j.jretconser.2014.07.002

Gensler, S., Neslin, S. A., & Verhoef, P. C. (2017). The Showrooming Phenomenon: It's More than Just About Price. *Journal of Interactive Marketing*, *38*, 29–43. https://doi.org/10.1016/j.intmar.2017.01.003

Gobe, M. (2010). Emotional branding: The new paradigm for connecting brands to people. Simon and Schuster.

Goyal, N., 2021. 10 mobile commerce trends that will dominate 2021. Buildfire Report. https://buildfire.com/mobile-commerce-trends/.

Gössling, S. (2018). ICT and transport behavior: A conceptual review. *International Journal of Sustainable Transportation*, *12*(3), 153–164. https://doi.org/10.1080/15568318.2017.1338318

Grewal, D., Roggeveen, A. L., & Nordfält, J. (2017). The Future of Retailing. *Journal of Retailing*, *93*(1), 1–6. https://doi.org/10.1016/j.jretai.2016.12.008

Gupta, A., Hathwar, D., & Vijayakumar, A. (2020). Introduction to AI chatbots. *IJERT Journal International Journal of Engineering Research and Technology, 9*(7), 255-258.

Guttentag, D. A. (2010). Virtual reality: Applications and implications for tourism. *Tourism Management*, *31*(5), 637–651.

Han, S. L., An, M., Han, J. J., & Lee, J. (2020). Telepresence, time distortion, and consumer traits of virtual reality shopping. *Journal of Business Research*, *118*, 311–320. https://doi.org/10.1016/j.jbusres.2020.06.056

Hassenzahl, M., & Tractinsky, N. (2006). User experience - A research agenda. *Behaviour and Information Technology*, *25*(2), 91–97. https://doi.org/10.1080/01449290500330331

Häubl, G., & Trifts, V. (2000). Consumer decision making in online shopping environments: The effects of interactive decision aids. *Marketing Science*, *19*(1), 4–21. https://doi.org/10.1287/mksc.19.1.4.15178

Healy, M. J., Beverland, M. B., Oppewal, H., & Sands, S. (2007). Understanding retail experiences-the case for ethnography. In *International Journal of Market Research* (Vol. 49, Issue 6).

Heitz-Spahn, S. (2013). Cross-channel free-riding consumer behavior in a multichannel environment: An investigation of shopping motives, sociodemographics and product categories. *Journal of Retailing and Consumer Services*, *20*(6), 570–578. https://doi.org/10.1016/j.jretconser.2013.07.006

Herjanto, H., Amin, M., & Purington, E. F. (2021). Panic buying: The effect of thinking style and situational ambiguity. *Journal of Retailing and Consumer Services*, *60*. https://doi.org/10.1016/j.jretconser.2021.102455

Hougaard, R., Carter, J., & Mohan, M. (2020). *Build Your Resilience in the Face of a Crisis*.

Howard, T. (n.d.). *Journey Mapping: A Brief Overview*. http://www.adaptivepath.com/ideas/theanatomyofan

Hoyer, W. D., Kroschke, M., Schmitt, B., Kraume, K., & Shankar, V. (2020). Transforming the Customer Experience Through New Technologies. *Journal of Interactive Marketing*, *51*, 57–71. https://doi.org/10.1016/j.intmar.2020.04.001

Hsiao, M. H. (2009). Shopping mode choice: Physical store shopping versus e-shopping. *Transportation Research Part E: Logistics and Transportation Review*, *45*(1), 86–95. https://doi.org/10.1016/j.tre.2008.06.002

Hultén, B. (2011). Sensory marketing: The multi-sensory brand-experience concept. *European Business Review*, *23*(3), 256–273. https://doi.org/10.1108/09555341111130245

Jain, S., Schweiss, T., Bender, S., & Werth, D. (2021). *Omnichannel Retail Customer Experience with Mixed-Reality Shopping Assistant Systems* (pp. 504–517). https://doi.org/10.1007/978-3-030-90439-5_40

Juaneda-Ayensa, E., Mosquera, A., & Murillo, Y. S. (2016). Omnichannel customer behavior: Key drivers of technology acceptance and use and their effects on purchase intention. *Frontiers in Psychology*, *7*(JUL).

Jumisko-Pyykkö, S., Weitzel, M., & Strohmeier, D. (2008, October). Designing for user experience: what to expect from mobile 3D TV and video?. In *Proceedings of the 1st international conference on Designing interactive user experiences for TV and video* (pp. 183-192).

Kacen, J. J., Hess, J. D., & Kevin Chiang, W.-Y. (2013). Bricks or Clicks? Consumer Attitudes toward Traditional Stores and Online Stores. *Global Economics and*

Management Review, *18*(1), 12–21. https://doi.org/10.1016/s2340-1540(13)70003-3

Kang, J. Y. M. (2018). Showrooming, Webrooming, and User-Generated Content Creation in the Omnichannel Era. *Journal of Internet Commerce*, *17*(2), 145–169. https://doi.org/10.1080/15332861.2018.1433907

Karunarathna, K. M. D. M., Weerasingha, H. M. D. A., Rumy, M. M., Rajapaksha, M. M., Silva, D. I. D., & Kodagoda, N. (2014). A Fully Functional Shopping Mall Application - SHOPPING EYE. *Proceedings - 2nd International Conference on Artificial Intelligence, Modelling, and Simulation, AIMS 2014*, 292–296. https://doi.org/10.1109/AIMS.2014.14

King, W. R., & He, J. (2006). A meta-analysis of the technology acceptance model. *Information and Management*, *43*(6), 740–755. https://doi.org/10.1016/j.im.2006.05.003

Koohang, A., Sargent, C. S., Nord, J. H., & Paliszkiewicz, J. (2022). Internet of Things (IoT): From awareness to continued use. *International Journal of Information Management*, *62*. https://doi.org/10.1016/j.ijinfomgt.2021.102442

Korhonen, H., Arrasvuori, J., & Väänänen-Vainio-Mattila, K. (2010, December). Analysing user experience of personal mobile products through contextual factors. In *Proceedings of the 9th International Conference on Mobile and Ubiquitous Multimedia* (pp. 1-10).

Krishna, A. (2010). An Introduction to Sensory Marketing. In A. Krishna. (Ed), Sensory Marketing: Research on the sensuality of products, New York: Taylor and Francis Group, pp. 1-13.

Krishna, A. (2012). An integrative review of sensory marketing: Engaging the senses to affect perception, judgment and behavior. In *Journal of Consumer Psychology* (Vol. 22, Issue 3, pp. 332–351). https://doi.org/10.1016/j.jcps.2011.08.003

Laato, S., Islam, A. K. M. N., Farooq, A., & Dhir, A. (2020). Unusual purchasing behavior during the early stages of the COVID-19 pandemic: The stimulus-organism-response approach. *Journal of Retailing and Consumer Services*, *57*. https://doi.org/10.1016/j.jretconser.2020.102224

Lindstrom, M. (2006). Brand sense: How to build powerful brands through touch, taste, smell, sight and sound. *Strategic Direction.*

Lopatovska, I., Rink, K., Knight, I., Raines, K., Cosenza, K., Williams, H., Sorsche, P., Hirsch, D., Li, Q., & Martinez, A. (2019). Talk to me: Exploring user interactions with the Amazon Alexa. *Journal of Librarianship and Information Science*, *51*(4), 984–997. https://doi.org/10.1177/0961000618759414

Mangiaracina, R., & Perego, A. (2009). Journal of Internet Banking and Commerce The eCommerce Customer Journey: A Model to Assess and Compare the User Experience of the eCommerce Websites INTRODUCTION AND OBJECTIVES. In *Journal of Internet Banking and Commerce* (Vol. 14, Issue 3). http://www.arraydev.com/commerce/jibc/

Manzano, R., Ferrán, M., Gavilan, D., Avello, M., & Abril, C. (2016). The Influence of Need for Touch in Multichannel Purchasing Behaviour. An approach based on its instrumental and autotelic dimensions and consumer´ s shopping task. *International Journal of Marketing, Communication and New Media, 4*(6).

Margetis, G., Ntoa, S., & Stephanidis, C. (2019, July). Smart omni-channel consumer engagement in malls. *In International Conference on Human-Computer Interaction* (pp. 89-96). Springer, Cham.

Marquez, J. J., Downey, A., & Clement, R. (2015). Walking a Mile in the User's Shoes: Customer Journey Mapping as a Method to Understanding the User Experience. *Internet Reference Services Quarterly*, *20*(3–4), 135–150. https://doi.org/10.1080/10875301.2015.1107000

Meegahapola, L., & Perera, I. (2017, September). Enhanced in-store shopping experience through smart phone based mixed reality application. In *2017 Seventeenth International Conference on Advances in ICT for Emerging Regions* (ICTer) (pp. 1-8). IEEE.

Milgram, P., & Kishino, F. (1994). A Taxonomy of Mixed Reality Visual Displays ActiveCube View project Augmented Reality through Graphic Overlays on Stereoscopic video View project A TAXONOMY OF MIXED REALITY VISUAL DISPLAYS. In *IEICE Transactions on Information Systems* (Issue 12). http://vered.rose.utoronto.ca/people/paul_dir/IEICE94/ieice.html

Moes, A., & van Vliet, H. (2017). The online appeal of the physical shop: How a physical store can benefit from a virtual representation. *Heliyon*, *3*, e00336. https://doi.org/10.1016/j.heliyon.2017

Montagu A. *Touching.* 1971 (New York, Columbia University Press).

Moon, H., Han, S. H., Chun, J., & Hong, S. W. (2016). A Design Process for a Customer Journey Map: A Case Study on Mobile Services. *Human Factors and Ergonomics In Manufacturing*, *26*(4), 501–514. https://doi.org/10.1002/hfm.20673

Mooy, S. C., & Robben, H. S. j. (2002). Managing consumers' product evaluations through direct product experience. *Journal of Product & Brand Management*, *11*(7), 432–446. https://doi.org/10.1108/10610420210451625

Morrison, M. (2001), The power of music and its influence on international retail brands and shopper behaviour: a multi case study approach, paper presented at the Australia and New Zealand Marketing Academy Conference.

Mouratidis, K., & Papagiannakis, A. (2021). COVID-19, internet, and mobility: The rise of telework, telehealth, e-learning, and e-shopping. *Sustainable Cities and Society*, *74*. https://doi.org/10.1016/j.scs.2021.103182

Mouratidis, K., Peters, S., & van Wee, B. (2021). Transportation technologies, sharing economy, and teleactivities: Implications for built environment and travel. *Transportation Research Part D: Transport and Environment*, *92*. https://doi.org/10.1016/j.trd.2021.102716

Neslin, S. A., Jerath, K., Bodapati, A., Bradlow, E. T., Deighton, J., Gensler, S., Lee, L., Montaguti, E., Telang, R., Venkatesan, R., Verhoef, P. C., & Zhang, Z. J. (2014). The interrelationships between brand and channel choice. *Marketing Letters*, *25*(3), 319–330. https://doi.org/10.1007/s11002-014-9305-2

Nguyen, A. T. van, McClelland, R., & Thuan, N. H. (2022). Exploring customer experience during channel switching in omnichannel retailing context: A qualitative assessment. *Journal of Retailing and Consumer Services*, *64*. https://doi.org/10.1016/j.jretconser.2021.102803

Nord, J. H., Koohang, A., & Paliszkiewicz, J. (2019). The Internet of Things: Review and theoretical framework. In *Expert Systems with Applications* (Vol. 133, pp. 97–108). Elsevier Ltd. https://doi.org/10.1016/j.eswa.2019.05.014

Norman, D., & Nielsen, J. (2016). The definition of user experience (UX). *Nielsen Norman Group Publication, 1*, 2-1.

Nölke, S. (2009). Das 1x1 des Audio-Marketings. Der Navigator für Audio Brandin und Audio-Interface-Design. Köln: Comevis.

Otnes, C., Lowrey, T. M., & Shrum, L. J. (1997). Toward an understanding of consumer ambivalence. *Journal of Consumer Research*, *24*(1), 80–93. https://doi.org/10.1086/209495

Paine, J. (2018). 10 Real Use Cases for Augmented Reality: AR is set to have a big impact on major industries. *Inc.* Retrieved from https://www.inc.com/james-paine/10-real-use-cases-for-augmented-reality.html

Parasuraman, A. (2000). Technology Readiness Index (TRI) A Multiple-Item Scale to Measure Readiness to Embrace New Technologies. In *Journal of Service Research* (Vol. 2, Issue 4).

Parasuraman, A., & Colby, C. L. (2015). An Updated and Streamlined Technology Readiness Index: TRI 2.0. *Journal of Service Research*, *18*(1), 59–74. https://doi.org/10.1177/1094670514539730

Peck, J., Barger, V. A., & Webb, A. (2013). In search of a surrogate for touch: The effect of haptic imagery on perceived ownership. *Journal of Consumer Psychology*, *23*(2), 189–196. https://doi.org/10.1016/j.jcps.2012.09.001

Peck, J., & Childers, T. L. (2003). Individual differences in haptic information processing: The "need for touch" scale. *Journal of Consumer Research, 30*(3), 430-442. https://academic.oup.com/jcr/article/30/3/430/1790623

Peck, J., & Wiggins, J. (2006). It Just Feels Good: Customers' Affective Response to Touch and Its Influence on Persuasion. *Journal of Marketing*, *70*, 56–69. http://www.marketingpower.com/jmblog.

Pierce, B. S., Perrin, P. B., Tyler, C. M., McKee, G. B., & Watson, J. D. (2021). The COVID-19 telepsychology revolution: A national study of pandemic-based changes in U.S. mental health care delivery. *American Psychologist*, *76*(1), 14–25. https://doi.org/10.1037/amp0000722

Porter, C. E., & Donthu, N. (2006). Using the technology acceptance model to explain how attitudes determine Internet usage: The role of perceived access barriers and demographics. *Journal of Business Research*, *59*(9), 999–1007. https://doi.org/10.1016/j.jbusres.2006.06.003

Prentice, C., Chen, J., & Stantic, B. (2020). Timed intervention in COVID-19 and panic buying. *Journal of Retailing and Consumer Services*, *57*. https://doi.org/10.1016/j.jretconser.2020.102203

Punj, G. (2022). The effect of shopping goals and in-store mobile device use on purchase outcomes in brick-and-mortar stores. *Journal of Retailing and Consumer Services*, *64*. https://doi.org/10.1016/j.jretconser.2021.102816

Purwantono, H. Y., Gunawan, A. A. S., Tolle, H., Attamimi, M., & Budiharto, W. (2021). A literature review: Feasibility Study of technology to improve shopping experience. *Procedia Computer Science*, *179*, 468–479. https://doi.org/10.1016/j.procs.2021.01.030

Ray, M. (2004). University/college libraries. *Journal of Library Administration*, *40*(3–4), 111–119. https://doi.org/10.1300/J111v40n03_09

Rejón-Guardia, F., & Luna-Nevarez, C. (2017). "Showrooming" in Consumer Electronics Retailing: An Empirical Study. *Journal of Internet Commerce*, *16*(2), 174–201. https://doi.org/10.1080/15332861.2017.1305812

Rice, A., Garrison, Y. L., & Liu, W. M. (2020). Spending as Social and Affective Coping (SSAC): Measure Development and Initial Validation. *Counseling Psychologist*, *48*(1), 78–105. https://doi.org/10.1177/0011000019878848

Richardson, A. (2010). Using customer journey maps to improve customer experience. HBR Blog Network. Retrieved December 18, 2021, from http://blogs.hbr.org/2010/11/using-customer-journey-maps-to/

Robert-Islam, B. (2020). How Digital Fashion Could Replace Fast Fashion, And The Startup Paving The Way?. *Forbes*. Retrieved December 31, 2021, from https://www.forbes.com/sites/brookerobertsislam/2020/08/21/how-digital-fashion-could-replace-fast-fashion-and-the-startup-paving-the-way/

Rodrigues, T., Silva, S. C., & Duarte, P. (2017). The value of textual haptic information in online clothing shopping. *Journal of Fashion Marketing and Management*, *21*(1), 88–102. https://doi.org/10.1108/JFMM-02-2016-0018

Rosenbaum, M. S., Otalora, M. L., & Ramírez, G. C. (2017). How to create a realistic customer journey map. *Business Horizons*, *60*(1), 143–150. https://doi.org/10.1016/j.bushor.2016.09.010

Rösing, H., Oerter, R., & Bruhn, H. (2002). Musikpsychologie. Hamburg: Rohwohlt.

Rubin, H. J., & Rubin, I. S. (2011). *Qualitative interviewing: The art of hearing data*. sage.

Sebald, A. K., & Jacob, F. (2020). What help do you need for your fashion shopping? A typology of curated fashion shoppers based on shopping motivations. *European Management Journal*, *38*(2), 319–334. https://doi.org/10.1016/j.emj.2019.08.006

Şener-Pedgley, Bahar. (2022). *Personal conversation.*

Şener, B., & Pedgley, O. (2021). "Wearable Tactual Communicators: Designing Products with Technology-Mediated Touch". *'Proceedings of the 23rd International Conference on Engineering and Product Design Education (E&PDE 2021)'* In Grierson, Hilary; Bohemia, Erik; Buck, Lyndon (eds). VIA Design, VIA University in Herning, Denmark. 9th -10th September 2021.

Shankar, V. (2018). How Artificial Intelligence (AI) is Reshaping Retailing. *Journal of Retailing*, *94*(4), vi–xi. https://doi.org/10.1016/s0022-4359(18)30076-9

Sheth, J. N. (2021). Future of brick and mortar retailing: how will it survive and thrive? *Journal of Strategic Marketing*, *29*(7), 598–607.

Simonson, A., & Schmitt, B. H. (1997). *Marketing aesthetics: The strategic management of brands, identity, and image.* Simon and Schuster

Singh, S., & Jang, S. (2020). Search, purchase, and satisfaction in a multiple-channel environment: How have mobile devices changed consumer behaviors? *Journal of Retailing and Consumer Services*, 102200.

Squarespace. (2021). Squarespace Survey Reveals Gen Z Find Digital Life More Important And Memorable Than In-Person Life. Squarespace Newsroom. Retrieved from January 2, 2022, https://newsroom.squarespace.com/blog/squarespace-survey-reveals-genz

Snowden, F.M., 2019. Epidemics and Society: from the Black Death to the Present. Yale University Press.

Soars, B. (2009). Driving sales through shoppers' sense of sound, sight, smell and touch. *International Journal of Retail and Distribution Management*, *37*(3), 286–298. https://doi.org/10.1108/09590550910941535

Sonneveld M. H. Tactile aesthetics: An additional perspective on comfort and discomfort (translated from Dutch). *Tijdschrift voor Ergonomie,* 2010, 35(4), 15-19.

Sparkes, M. (2021). What is a metaverse. *New Scientist*, *251*(3348), 18. https://doi.org/10.1016/S0262-4079(21)01450-0

Stickdorn, M., and Schneider, J. (2011). This Is Service Design Thinking: Basics, Tools, Cases. Hoboken, NJ: Wiley.

Taschenbuch Verlag Schiffman, H. R. (2001). Sensation and Perception: An Integrated Approach. New York: John Wiley & Sons, Inc.

Terblanche, N. S., & Kidd, M. (2021). Exploring an in-store customer journey for customers shopping for outdoor apparel. *Journal of Retailing and Consumer Services*, *63*. https://doi.org/10.1016/j.jretconser.2021.102722

The Moodie Davitt Report News Room. (2021). The Customer Experience Column: Are you ready for the Metaverse? *The Moodie Davitt eZine, 301.* https://ezine.moodiedavittreport.com/ezine-301/the-customer-experience-column/

Tran, A. D., Pallant, J. I., & Johnson, L. W. (2021). Exploring the impact of chatbots on consumer sentiment and expectations in retail. *Journal of Retailing and Consumer Services*, *63*. https://doi.org/10.1016/j.jretconser.2021.102718

Tueanrat, Y., Papagiannidis, S., & Alamanos, E. (2021). Going on a journey: A review of the customer journey literature. In *Journal of Business Research* (Vol. 125, pp. 336–353). Elsevier Inc. https://doi.org/10.1016/j.jbusres.2020.12.028

Valberg, A. (2005). *Light vision color.* John Wiley & Sons.

van Kerrebroeck, H., Willems, K., & Brengman, M. (2017). Touching the void: Exploring consumer perspectives on touch-enabling technologies in online retailing. *International Journal of Retail and Distribution Management*, *45*(7–8), 892–909. https://doi.org/10.1108/IJRDM-09-2016-0156

Verhoef, P. C., Kannan, P. K., & Inman, J. J. (2015). From Multi-Channel Retailing to Omni-Channel Retailing. Introduction to the Special Issue on Multi-Channel Retailing. *Journal of Retailing*, *91*(2), 174–181.

Walsh, G., & Mitchell, V. W. (2010). The effect of consumer confusion proneness on word of mouth, trust, and customer satisfaction. *European Journal of Marketing*, *44*(6), 838–859. https://doi.org/10.1108/03090561011032739

Wenzel, S., & Benkenstein, M. (2018). Together always better? The impact of shopping companions and shopping motivation on adolescents' shopping experience. *Journal of Retailing and Consumer Services*, *44*, 118–126. https://doi.org/10.1016/j.jretconser.2018.06.001

Wijesooriya, N. R., Mishra, V., Brand, P. L. P., & Rubin, B. K. (2020). COVID-19 and telehealth, education, and research adaptations. In *Paediatric Respiratory Reviews* (Vol. 35, pp. 38–42). W.B. Saunders Ltd. https://doi.org/10.1016/j.prrv.2020.06.009

Wolny, J., & Charoensuksai, N. (2014). Mapping customer journeys in multichannel decision-making. *Journal of Direct, Data and Digital Marketing Practice*, *15*(4), 317–326. https://doi.org/10.1057/dddmp.2014.24

Xiao, B., & Benbasat, I. (2007). E-Commerce Product Recommendation Agents: Use, Characteristics, and Impact. In *Source: MIS Quarterly* (Vol. 31, Issue 1). http://www.forrester.com/Research/Document/Excerpt/0,7211,34576,00.

APPENDICES

A. SURVEY QUESTIONS IN TR

ÇEVRİMİÇİ ANKET

Karşılama Ekranı:

Bu araştırma ODTÜ Endüstriyel Tasarım Yüksek Lisans öğrencisi Zeynep Yılmaz Ünlü tarafından, Prof. Dr. Bahar Şener-Pedgley danışmanlığında yürütülmektedir. Bu araştırmada, pandemi öncesi ve koşullarında kullanıcıların mağazadan ve internet üzerinden kıyafet alışverişi deneyimleri incelenerek, kullanıcı deneyimini tasarım yoluyla geliştirmek amaçlanmaktadır.

Anket 2 bölüm ve 25 sorudan oluşmakta, tamamlanması yaklaşık 10 dakika sürmektedir. Toplanan veriler yalnızca araştırmacılar tarafından değerlendirilecektir. Bu araştırmanın sonuçları bilimsel ve profesyonel yayınlarda veya eğitim amaçlı kullanılabilir, fakat katılımcıların kimliği gizli tutulacaktır.

Daha fazla bilgi almak, sorularınızı ve yorumlarınızı iletmek için araştırmacı Zeynep Yılmaz Ünlü'ye (zeynepyilmaz.id@gmail.com) ulaşabilirsiniz.

Anket soruları:

Bu çalışmaya gönüllü olarak katıldığımı ve katkılarımın araştırma amacıyla isimsiz olarak kullanılmasına izin verdiğimi kabul ediyorum.

- ○ Kabul ediyorum
- ○ Kabul ETMİYORUM.

1. Yaşınız:

2. Cinsiyetiniz:
   - ○ Kadın
   - ○ Erkek
   - ○ Belirtmek istemiyorum

Lütfen aşağıda yer alan ifadelerde size en uygun olan seçeneği işaretleyiniz.

	Tamamen katılmıyorum	Katılmıyorum	Nötr	Katılıyorum	Tamamen katılıyorum
3. Yeni teknolojiler daha iyi yaşam kalitesine katkıda bulunur.					
4. Teknoloji bana daha fazla hareket özgürlüğü verir.					
5. Teknoloji, insanlara günlük yaşamları üzerinde daha fazla kontrol sağlar.					
6. Teknoloji beni kişisel hayatımda daha üretken kılar.					
7. Diğer insanlar yeni teknolojiler hakkında tavsiye almak için bana gelir.					
8. Genel olarak, arkadaş çevremde ortaya çıktığında yeni teknolojiyi ilk alanlardanımdır.					
9. Yeni yüksek teknolojili ürün ve hizmetleri başkalarının yardımı olmadan bulabilirim.					
10. İlgi alanımdaki en son teknolojik gelişmeleri takip ederim.					
11. İleri bir teknoloji ürünü veya hizmet sağlayıcısından teknik destek aldığımda, bazen benden daha fazlasını bilen biri tarafından istifade ediliyormuş gibi hissederim.					
12. Teknik destek çağrı merkezleri, soruduğum soruları anladığım terimlerle açıklamadıkları için yardımcı olmuyor.					
13. Bazen teknoloji sistemlerinin sıradan insanlar tarafından kullanılmak üzere tasarlanmadığını düşünürüm.					
14. Sade bir dille yazılmış yüksek teknoloji ürünü ürün veya hizmet kılavuzu diye bir şey yoktur.					
15. İnsanlar, teknolojinin onlar için bir şeyler yapmasına çok bağımlılardır.					
16. Çok fazla teknoloji, insanların dikkatini zararlı olabilecek bir noktaya kadar dağıtır.					
17. Teknoloji, kişisel etkileşimi azaltarak ilişkilerin kalitesini düşürür.					
18. Yalnızca çevrimiçi ulaşılabilen bir yerle iş yaptığımda güvenli hissetmem.					

19. Kıyafet alışverişlerinizi şu an (pandemi dönemi) nasıl yapıyorsunuz?

- ○ Tamamen çevrimiçi.
- ○ Çoğunlukla çevrimiçi, nadiren mağazadan.
- ○ Hem internet üzerinden hem mağazadan
- ○ Çoğunlukla mağazadan, nadiren çevrimiçi.
- ○ Tamamen mağazadan.

20. Kıyafet alışverişlerinizi pandemi öncesinde nasıl yapıyordunuz?

- ○ Tamamen çevrimiçi.
- ○ Çoğunlukla çevrimiçi, nadiren mağazadan.
- ○ Hem internet üzerinden hem mağazadan
- ○ Çoğunlukla mağazadan, nadiren çevrimiçi.
- ○ Tamamen mağazadan.

21. Çevrimiçi kıyafet alışverişi yaparken hangi araçları kullanıyorsunuz?

- ○ Sadece bilgisayar
- ○ Çoğunlukla bilgisayar, nadiren akıllı telefon
- ○ Çoğunlukla akıllı telefon, nadiren bilgisayar
- ○ Sadece akıllı telefon
- ○ *Diğer…*

22. Kıyafet alışveriş deneyiminizi en iyi anlatan seçenek nedir?

- ○ Çevrimiçi araştırma, çevrimiçi alışveriş..
- ○ Çevrimiçi araştırma, mağazaya giderek alışveriş.
- ○ Mağazaya giderek araştırma, çevrimiçi alışveriş.
- ○ Mağazaya giderek araştırma, mağazada alışveriş.

23. Çevrimiçi kıyafet alışverişi tercihinizi hangi kanallardan gerçekleştiriyorsunuz? (Uygun olan tüm seçenekleri işaretleyiniz)

- ☐ Markaların ortak bulunduğu alışveriş siteleri üzerinden (Trendyol, Hepsiburada vb.)

- ☐ Markaların kendi internet siteleri üzerinden
- ☐ Markaların kendi mobil uygulamaları üzerinden
- ☐ Sosyal medya uygulamaları üzerinden
- ☐ *Diğer…*

24. Kıyafet alışverişi öncesinde nasıl bir araştırma yapıyorsunuz? (Uygun olan tüm seçenekleri işaretleyiniz)

- ☐ Çevrimiçi olarak, ürünlerin fiyatlarını araştırıyorum.
- ☐ Çevrimiçi olarak, ürünlerin puanlarını ve yorumlarını okuyorum.
- ☐ Çevrimiçi olarak, ürünlere ait kumaş ve beden bilgilerini araştırıyorum.
- ☐ Çevrimiçi olarak, ürünlerin mağaza stok bilgilerini öğreniyorum.
- ☐ Ürünleri görmek için mağazaya gidiyorum.
- ☐ Ürünleri denemek için mağazaya gidiyorum.
- ☐ Kıyafet alışverişi öncesinde bir araştırma yapmıyorum.
- ☐ *Diğer…*

25. Bu çalışmanın devamında kıyafet alışveriş deneyiminiz ile ilgili kısa bir görüşmeye katılmak ister misiniz?

- ○ Evet.
- ○ Hayır.

Cevabınız evet ise, görüşme için sizinle iletişime geçilmesini istediğiniz e-posta ya da telefon numaranızı yazabilir misiniz?

_____

Katılımınız için Teşekkürler!

B. SURVEY QUESTIONS IN EN

ONLINE QUESTIONNAIRE

Welcome Screen:

This study is conducted by Zeynep Yılmaz Ünlü who is a master's student in Middle East Technical University Department of Industrial Design, supervised by Prof. Dr. Bahar Şener-Pedgley. In this research, it is aimed to examine the clothes shopping experiences of the users before and during the pandemic, and to improve the user experience through design.

The questionnaire consists of 2 parts and 25 questions and takes approximately 15 minutes to complete. The results of this research can be used in scientific and professional publications or for educational purposes. The data used will remain anonymous, meaning that you will not be identifiable, and your comments and actions will be confidential in this research.

You can contact researcher Zeynep Yılmaz Ünlü (zeynepyilmaz.id@gmail.com) to get more information, and to send your questions and comments.

I read the consent form in the welcome screen, and I accept that I voluntarily participate in this study and give consent for my contributions to be used anonymously for research purposes.

- ○ I accept
- ○ I DO NOT accept

1. Your age:

2. Your gender:
   - ○ Female

○ Male

○ Prefer not to say

Please mark the option that best suits you in the statements below.

	Totally disagree	Disagree	Neutral	Agree	Totally agree
3. New technologies contribute to a better quality of life.					
4. Technology gives me more freedom of mobility.					
5. Technology gives people more control over their daily lives.					
6. Technology makes me more productive in my personal life.					
7. Other people come to me for advice on new technologies.					
8. In general, I am among the first in my circle of friends to acquire new technology when it appears.					
9. I can usually figure out new high-tech products and services without help from others.					
10. I keep up with the latest technological developments in my areas of interest.					
11. When I get technical support from a provider of a high-tech product or service, I sometimes feel as if I am being taken advantage of by someone who knows more than I do.					
12. Technical support lines are not helpful because they don't explain things in terms I understand.					
13. Sometimes, I think that technology systems are not designed for use by ordinary people					
14. There is no such thing as a manual for a high-tech product or service that's written in plain language.					
15. People are too dependent on technology to do things for them.					
16. Too much technology distracts people to a point that is harmful.					
17. Technology lowers the quality of relationships by reducing personal interaction.					
18. I do not feel confident doing business with a place that can only be reached online.					

19. How do you shop for clothes right now?

○ Completely online.

○ Mostly online, rarely in store.

- ○ Both online and in the store.
- ○ Mostly from the store, rarely online.
- ○ Completely from the store.

20. How did you shop for clothes before the pandemic?

- ○ Completely online.
- ○ Mostly online, rarely in store.
- ○ Both online and in the store.
- ○ Mostly from the store, rarely online.
- ○ Completely from the store.

21. Which mediums do you use when shopping for clothes online?

- ○ Only desktop/laptop
- ○ Mostly desktop/laptop, rarely smartphone
- ○ Mostly smartphone, rarely desktop/laptop
- ○ Only smartphone
- ○ *Other…*

22. What is the best option to describe your clothing shopping experience?

- ○ Online research, online shopping.
- ○ Online research, in-store shopping.
- ○ In-store search, online shopping.
- ○ In-store search, in-store shopping.

23. Which shopping channels do you prefer for online clothes shopping?

- ☐ Online shopping websites including different brands
- ☐ Brands' websites
- ☐ Brands' mobile applications
- ☐ Social media platforms
- ☐ *Other…*

24. What kind of research do you do before shopping for clothes?

- ☐ I search the prices of the products online
- ☐ I read ratings and reviews of the products online
- ☐ I search for the fabric and size information of the products online
- ☐ I learn the store stock information of the products online

- ☐ I go to the store to try the products
- ☐ I go to the store to see the products
- ☐ I do not search before shopping for clothes
- ☐ *Other…*

25. Would you like to participate in a short interview about your clothes shopping experience, and contribute to this study further?

- ○ Yes.
- ○ No.

If yes, please provide your e-mail, or phone number so the researcher can contact you for further studies.

Thank you for your participation!

C. INFORMED CONSENT FORM

ARAŞTIRMAYA GÖNÜLLÜ KATILIM FORMU

Bu araştırma, ODTÜ Endüstriyel Tasarım Bölümü Yüksek Lisans öğrencisi Zeynep Yılmaz Ünlü tarafından Prof. Dr. Bahar Şener-Pedgley danışmanlığındaki yüksek lisans tezi kapsamında yürütülmektedir. Bu form sizi araştırma koşulları hakkında bilgilendirmek için hazırlanmıştır.

Çalışmanın Amacı Nedir?

Kişilerin kıyafet alışverişi yapma deneyimlerini ortaya koymak; pandemi öncesi ve sonrası değişen eğilim ve beklentilerini tespit etmek; tasarım yoluyla, kıyafet alışverişi yapma deneyimlerinin pandemi sonrasında ne yönde değişip, iyileştirilebileceğini öngörerek deneyim ve servis tasarımcıları ile kıyafet alışverişi konusunda çalışan pratisyenler ve araştırmacılar için yol gösterici olabilecek bir kaynak oluşturmak amaçlanmaktadır. Araştırmaya katılmayı kabul ederseniz, sizinle bir anket çalışması yapılacaktır. Bu çalışma ortalama olarak 10 dakika sürmektedir.

Bize Nasıl Yardımcı Olmanızı İsteyeceğiz?

Bu anket çalışması online bir link ile size iletilecektir. Ankette bulunan sorular ile mağazada ve internet üzerinden kıyafet alışverişi yapma deneyiminiz ve beklentileriniz genel hatlarıyla ortaya konmak istenmektedir. Anketin sonunda bulunan kişisel bilgiler kısmını doldurmanız halinde, bu araştırmanın bir sonraki aşaması olan yarı planlı mülakatlarda katılımcı olmanız için size ulaşılacaktır.

Sizden Topladığımız Bilgileri Nasıl Kullanacağız?

Araştırmaya katılımınız tamamen tamamen gönüllülük esasına dayalıdır. Araştırmaya katılanlardan toplanan veriler tamamen gizli tutulacak, veriler ve kimlik bilgileri herhangi bir şekilde eşleştirilmeyecektir. Katılımcıların isimleri bağımsız bir listede toplanacaktır. Ayrıca toplanan verilere sadece araştırmacılar ulaşabilecektir. Bu araştırmanın sonuçları bilimsel ve profesyonel yayınlarda veya eğitim amaçlı kullanılabilir, fakat katılımcıların kimliği gizli tutulacaktır.

Katılımınızla ilgili bilmeniz gerekenler:

Çalışma, genel olarak kişisel rahatsızlık verecek sorular içermemektedir. Katılım sırasında sorulardan ya da herhangi başka bir nedenden ötürü kendinizi rahatsız hissederseniz cevaplama işini yarıda bırakıp çıkmakta serbestsiniz. Böyle bir durumda çalışmayı uygulayan kişiye, çalışmadan çıkmak istediğinizi söylemek yeterli olacaktır. Çalışma sonunda, bu araştırmayla ilgili sorularınız cevaplanacaktır.

Araştırmayla ilgili daha fazla bilgi almak isterseniz:
Bu çalışmaya katıldığınız için şimdiden teşekkür ederiz. Çalışma hakkında daha fazla bilgi almak için araştırmacı Zeynep Yılmaz Ünlü (E-posta: zeynepyilmaz.id@gmail.com) ile iletişim kurabilirsiniz.

Katılımcı Ad-Soyad

_____

Tarih

___/__/____

Yukarıdaki bilgileri okudum ve bu çalışmaya tamamen gönüllü olarak katılmayı kabul ediyorum.

○ Evet, kabul ediyorum.

○ Hayır, kabul etmiyorum.

D. INTERVIEW QUESTIONS IN EN

INTERVIEW QUESTIONS

I. Introduction

This study is conducted by Zeynep Yılmaz Ünlü who is a master's student in Middle East Technical University Department of Industrial Design, supervised by Prof. Dr. Bahar Şener-Pedgley. In this research, it is aimed to examine the clothes shopping experiences of the users before and during the pandemic, and to improve the user experience through design.

The interview takes approximately 45 minutes. The results of this research can be used in scientific and professional publications or for educational purposes. The data used will remain anonymous, meaning that you will not be identifiable, and your comments and actions will be confidential in this research.

You can contact researcher Zeynep Yılmaz Ünlü (zeynepyilmaz.id@gmail.com) to get more information, and to send your questions and comments.

II. Questions

Interview questions consist of 3 main parts: Clothes Shopping Experience in General, Online Clothes Shopping Experience and In-store Clothes Shopping Experience. Each section contains open-ended questions.

Clothes Shopping Experience in General

1. What were your reasons to shop for clothes before the pandemic?
2. What are your reasons to shop for clothes during the pandemic?
3. Which channels do you used to prefer to shop for clothes before the pandemic? (completely online shopping, searching from store shopping online, searching online shopping from store, and in-store shopping)
4. Which channels do you prefer to shop for clothes during the pandemic? (completely online shopping, searching from store shopping online, searching online shopping from store, and in-store shopping)
5. In what extent has the pandemic affected your use of these channels?

6. How has the frequency of using these channels changed with the COVID-19 pandemic?
7. What do you predict about frequency of using these channels after the COVID-19 pandemic?

Online Clothes Shopping Experience

In this section, online clothes shopping process will be examined in 3 parts: pre-shopping, during shopping and post-shopping. For each section, pre- and during-pandemic experiences will be discussed separately.

1. Could you briefly explain why you shop for clothes online?
2. Do you know what to buy before shopping for clothes online? What motivates you to shop for clothes?
3. Through which channels and tools do you mostly shop for clothes online? (On the website using a desktop computer, on the mobile site using a phone, mobile applications, etc.)
4. How do you make a search for clothes?
5. What information do you look for while shopping for clothes?
6. Do you apply a filtering and sorting while looking for the clothes?
7. How do you compare the products you chose? (Screen view, app features, etc.)
8. Do you make your own decisions during the ordering process?
9. What are the factors that affect your decision making?
10. Which payment options and how often do you use at the payment stage?
11. What are your reasons for using this option(s)?
12. What do you do/feel during the delivery process of the clothes you ordered?
13. Do you wait for wearing the clothes you ordered after you receive it, how much has it changed during the pandemic?
14. How often and what kind of problems do you have with the clothes you ordered?
15. How do you solve this/these problem/s?
16. How often and for what reason do you return the clothes you ordered?

In-store Clothes Shopping Experience

In this section, in-store clothes shopping process will be examined in 3 parts: pre-shopping, during shopping and post-shopping. For each section, pre- and during-pandemic experiences will be discussed separately.

1. Could you briefly explain why you shop for clothes in-store?
2. Do you know what to buy before shopping for clothes from physical stores? What motivates you to shop for clothes?
3. Do you prefer someone to accompany you while shopping for clothes at the physical store?
4. How do you search for clothes?
5. What information do you look for while shopping for clothes?
6. What physical features of the clothes do you pay attention while shopping?
7. How do you compare the products you chose?
8. Do you make your own decisions?
9. What are the factors that affect your decision making?
10. Which payment options and how often do you use at the payment stage?
11. What are your reasons for using this option(s)?
12. Do you wait for wearing the clothes you bought from the physical stores, how much has it changed during the pandemic?
13. How often and what kind of problems do you have with the clothes you bought from physical stores?
14. How do you solve this/these problem/s?
15. How often and for what reason do you return the clothes you bought from physical stores?

Thank you for participating in the interview!

E. INTERVIEW BOARDS

Stage 1 - General Clothes Shopping Experience

General Clothes Shopping Experience

1.What were your reasons to shop for clothes before the pandemic?

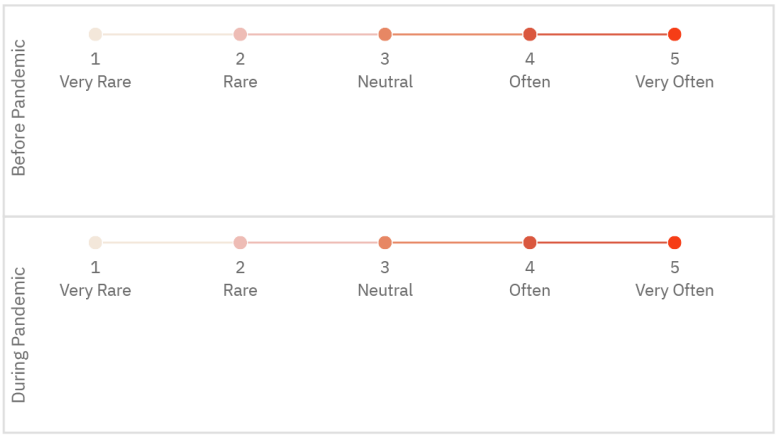
2.What are your reasons to shop for clothes during the pandemic?

3.Before the outbreak, in which ways did you use to prefer to shop for clothes? (Please sort the cards on the left depending on frequency of use)

4.During the outbreak, in which ways do you prefer to shop for clothes? (Please sort the cards on the left depending on frequency of use)

5.In what extent has the pandemic affected your use of these channels?

6.How has the frequency of using these channels changed with the COVID-19 pandemic?



7.What do you predict about frequency of using these channels after the COVID-19 pandemic?

Stage 2 - In-store Clothes Shopping Experience

In-store Shopping	Pre-Shopping			During Shopping					Post Shopping		
	Inspiration	Search for store	Companion	Search In-store	Choice	Comparison	Decision	Payment	Social activities	Wearing	Dissatisfaction
Before Pandemic											
During Pandemic											

Stage 3 - Online Clothes Shopping Experience

Online Shopping	Pre-Shopping			During Shopping							Post Shopping		
	Inspiration	Channel / Device	Plan	Search	Info. about product	Choice	Comparison	Decision	Order	Payment	Delivery	Trying-on at Home	Dissatisfaction
Before Pandemic													
During Pandemic													

F. ETHICAL APPROVAL

UYGULAMALI ETİK ARAŞTIRMA MERKEZİ
APPLIED ETHICS RESEARCH CENTER

ORTA DOĞU TEKNİK ÜNİVERSİTESİ
MIDDLE EAST TECHNICAL UNIVERSITY

DUMLUPINAR BULVARI 06800
ÇANKAYA ANKARA/TURKEY
T: +90 312 210 22 91
F: +90 312 210 79 59
ueam@metu.edu.tr
www.ueam.metu.edu.tr

Sayı: 28620816 /

15 NİSAN 2021

Konu : Değerlendirme Sonucu

Gönderen: ODTÜ İnsan Araştırmaları Etik Kurulu (İAEK)

İlgi : İnsan Araştırmaları Etik Kurulu Başvurusu

Sayın Prof.Dr. Bahar Şener PEDGLEY

Danışmanlığını yürüttüğünüz Zeynep Yılmaz ÜNLÜ'nün "COVID-19 Pandemisiyle Birlikte Değişen Kıyafet Alışverişi Deneyimi Üzerine Tasarım Öngörüleri" başlıklı araştırması İnsan Araştırmaları Etik Kurulu tarafından uygun görülmüş ve **142-ODTU-2021** protokol numarası ile onaylanmıştır.

Saygılarımızla bilgilerinize sunarız.

Dr.Öğretim Üyesi Ali Emre TURGUT
İAEK Başkan Vekili