

DESIGN FOR ONLINE GROCERY SHOPPING EXPERIENCE  
FOLLOWING COVID-19 PANDEMIC:  
AN INVESTIGATION INTO GROCERY SHOPPING APPS

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## ABSTRACT

### **DESIGN FOR ONLINE GROCERY SHOPPING EXPERIENCE FOLLOWING COVID-19 PANDEMIC: AN INVESTIGATION INTO GROCERY SHOPPING APPS**

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While people prefer shopping apps more and more with the developing information and communication technologies (ICT), grocery shopping apps are also preferred by more and more users every day. With the advent of the Covid-19 pandemic, grocery shopping apps are becoming more popular due to mobility restrictions and health concerns. This research aims to discover the dimensions of the user experience in grocery shopping apps, especially with the restrictions brought by the Covid-19 outbreak in Turkey. For this reason, after the literature review, the fieldwork was carried out in three stages. In the first phase, online grocery shopping platforms were reviewed to explore their current features. Then, an online survey was conducted with 121 participants to reveal their online grocery shopping habits. Finally, interview sessions were held with 8 participants as the third phase of the fieldwork. Interview sessions took place with applying think-aloud protocol to understand user actions, creating customer journey map to determine user needs and expectations. In conclusion, suggestions for grocery shopping app designers and touchpoints that can improve the user experience of grocery shopping app services, as well as limitations of the study and suggestions for future studies are presented.

Keywords: Grocery Shopping Apps, Food Shopping Apps, User Experience, Covid-19

## ÖZ

### **COVID-19 PANDEMİSİ SONRASINDA ÇEVİRİM İÇİ GIDA ALIŞVERİŞ DENEYİMİ İÇİN TASARIM: GIDA ALIŞVERİŞ UYGULAMALARI ÜZERİNE BİR ARAŞTIRMA**

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İnsanlar gelişen bilgi ve iletişim teknolojileri (BİT) ile birlikte alışveriş uygulamalarını her geçen gün daha çok tercih ederken, gıda alışveriş uygulamaları da buna paralel olarak daha çok kullanıcı tarafından tercih edilmektedir. Covid-19 pandemisinin ortaya çıkmasıyla, hareket kısıtlamaları ve sağlık endişeleri nedeniyle gıda alışverişi uygulamaları daha popüler hale gelmektedir. Bu araştırma, özellikle Türkiye'de Covid-19 salgınının getirdiği kısıtlamalar ile gıda alışverişi uygulamalarındaki kullanıcı deneyiminin boyutlarını ortaya çıkarmayı amaçlamaktadır. Bu nedenle literatür taramasının ardından saha çalışması üç aşamada gerçekleştirilmiştir. İlk aşamada, çevrimiçi gıda alışveriş platformları, mevcut özelliklerini tespit etmek için gözden geçirilmiştir. Ardından, çevrimiçi gıda alışverişi alışkanlıklarını ortaya çıkarmak için 121 katılımcı ile çevrimiçi anket gerçekleştirilmiştir. Son olarak, üçüncü aşamada 8 katılımcı ile yapılan mülakatlarda kullanıcı eylemlerini anlamak için sesli düşünme protokolü uygulanmış ve kullanıcı ihtiyaç ve beklentilerini belirlemek için müşteri yolculuk haritaları oluşturulmuştur. Sonuç olarak, gıda alışveriş uygulaması tasarımcıları için öneriler ve bu uygulamaların kullanıcı deneyimini geliştirebilecek hizmetlerin yanı sıra, çalışmanın sınırlılıkları ve gelecek çalışmalar için öneriler sunulmuştur.

Anahtar Kelimeler: Gıda Alışveriş Uygulamaları, Kullanıcı Deneyimi, Covid-19

To women of my family

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## CHAPTER 1

### INTRODUCTION

#### 1.1 Problem Definition

Technology is becoming a part of almost every routine in our daily life. Shopping, one of these routines, finds new channels with the opportunities offered by technology. Today, people do their shopping through many channels such as apps and websites. Grocery is one of the products that people prefer to shop online. Online grocery shopping entered our lives in the 2010s and adoption of online grocery shopping by people is increasing.

As of December 2019, the Covid-19 pandemic began to spread rapidly all over the world. In Turkey, first positive cases were identified in March 2020 and full-restriction period took place accordingly with the slogan of ‘mask, social distance, hygiene’. The Covid-19 pandemic is more than just a health crisis; it is a disaster that affects the socio-economic structures and social behaviors of societies globally at micro and macro levels (Sustainable Development Group, 2019). As a result of this disaster on a global scale, people all over the world were locked in their homes under different regulations, and in this process, they met all their needs other than brick and mortar forms. Due to the Covid-19 pandemic, many people are locked in their homes to reduce one-on-one interaction, even when there is no legal barrier to going out. In this forced or preferential closure process, people tended to postpone many of their needs and put their wishes in the background. However, the need for nutrition is not one of them.

Along with the pandemic, it is observed that people tend to stock up on non-perishable grocery products, their food preparation and eating behaviors at home

increase, eating disorders are seen due to concerns about food safety, and the interest in special consumption foods such as super foods decreases (Güney & Sangün, 2021).

With the emergence of the Covid-19 Pandemic, the use of online grocery shopping, which has become increasingly popular, has accelerated. Many brick-and-mortar stores and local grocery shops that do not yet offer online services had to start offering online services to survive the quarantine and full shutdown periods. According to data the Republic of Turkey Ministry of Trade shared, while people preferred online channels at a rate of 0,5% in 2019 for their nutritional needs in Turkey, this rate reached 1,6% in 2020, with a growth rate of %420 (Sakarya Pehlivan, 2020).

Considering this rising rate, it can also be said that new users are formed with the pandemic. Many people, who do not normally do online grocery shopping or not do it regularly, have begun to shop for groceries online to reduce face-to-face contact and because they could not go out during full closure periods.

In parallel to this, it is observed that there has been an increase in research activities that study user characteristics such as household number, technology acceptance level, buying behavior, food consumption behavior of users in the field of online grocery shopping to improve the online grocery shopping industry. However, since these studies are covering pre-Covid-19 pandemic and did not define all dimensions of the current user experience and the reviews remained one-dimensional, potential areas for improvements of online grocery shopping experience cannot be revealed.

Based on all this information, within the scope of this research, it is investigated how to understand the needs and expectations of both existing and new online grocery shopping users in the context of Covid-19 and how to improve the user experience through design according to these expectations.

## **1.2 Aim and Objectives of the Research**

The aim of the research is the identification of the dimensions of user experience with grocery shopping applications following the COVID-19 pandemic in Turkey. With this aim, the following objectives are set.

- To understand how user interaction with online grocery shopping apps have changed following the Covid-19 pandemic, specifically in Turkey (general grocery shopping culture will be integrated into this),
- To develop design directions to improve users' experience with grocery shopping apps.

## **1.3 Scope of the Research**

This research focuses on the user experience of online grocery shopping that has changed with the Covid-19 pandemic. The term 'grocery' is used for including uncooked and packaged foods that need preparation and excluding cleaning products, or food prepared in restaurants in this research. Fieldwork includes participants who live in Turkey, do online grocery shopping, and are over the age of 18 and no other limitations are employed since grocery shopping is a common need for people.

The fieldwork is carried out during the Covid-19 breakout, specifically first phase in October 2020, second phase in May 2021 and third phase between August 2021 to October 2021. Due to 'social distance' policy, interview sessions conducted online as they planned. Also, to captivate a larger perspective on the Covid-19 context, since the topic is emerging and there were almost no studies in the literature; news, podcasts, online public meetings with the nutrition, health and retailing specialists were included in this research.

## 1.4 Research Questions

The three main research questions and supportive research questions are as follows.

- What are the dimensions of user experience with grocery shopping applications?
  - What phases do online grocery shopping experience consists of?
  - How has pandemic affected users' shopping habits/behaviors? (non-online, general)
- What are the pain points and opportunities of user experience in online grocery shopping context?
- What are the potential areas for design interventions/design directions to improve user experience with grocery shopping apps?

## 1.5 Structure of the Thesis

This thesis consists of five chapters explained following:

Chapter 1, *Introduction*, gives brief information about background of the Covid-19 context and online grocery shopping experience followed by research aim and objectives of the study. Later, scope of this study and finally research questions are presented.

Chapter 2, *Literature Review*, discusses relevant literature beginning with introduction of online shopping and going deeper into the online grocery shopping experience. Following, relevant theories and models which are built to reveal dimensions of the experience is introduced. Then, affecting factors of online grocery shopping experience identified from earlier studies are analyzed together. Lastly, impact of Covid-19 on the grocery shopping experience with a focus on grocery shopping apps is presented.

Chapter 3, *Fieldwork*, presents the methodology of the proposed field study which consists of three stages. Data collection and data analysis tools and methods are introduced in this chapter.

Chapter 4, *Fieldwork Results and Analysis*, presents the results and analysis of the fieldwork followed by related discussion.

Chapter 5, *Conclusions*, answers research questions with findings of the study and includes limitations and future studies.



## **CHAPTER 2**

### **LITERATURE REVIEW**

At this chapter, related literature of online grocery shopping experience is presented. First, to have a wider perspective, online shopping is examined, followed by a further investigation with a particular focus on the context of 'grocery'. Then, related theories and models to understand an experience is explained since the scope of this research is to reveal the dimensions of online grocery shopping experience. With these terms in mind, related literature about affecting factors of online grocery shopping experience and then grocery shopping app experience are reviewed. Lastly, in line with the focus of the study, the impact of Covid-19 pandemic on grocery shopping app experience is explored.

#### **2.1 Background of Online Grocery Shopping**

##### **2.1.1 Online Shopping**

In the recent years, the way people shop has changed drastically. In addition to brick-and-mortar store shopping, shopping has also become an online experience thanks to the developments in information and communication technologies (ICT) (Frag et al., 2006). Many different definitions are used in different sources for this experience such as online shopping, e-shopping, web-based shopping, internet shopping, etc. People's life has become extremely easy as shopping can be done online, and there is no need to go to physical stores for shopping, which is a part of daily life (Hsiao, 2009). Also, people can now make their payments mostly online, as they shop over the internet, and it is called e-commerce which is the transaction

of goods and payment via digital platforms. So, the shopping experience has increasingly become more convenient and flexible, thus more popular (Wahyudin & Azali, 2020).

### **2.1.2 Online Grocery Shopping**

Grocery shopping is considered a routine behavior of people in their daily lives since it is done automatically, without detailed thinking, and due to habits (Kumar Shukla, 2016). Among other online shopping items, the grocery section has also been growing, although relatively slower. That's why the investigation of users' motivations and pain points of the online grocery shopping experience is an area that needs to be further studied (van Droogenbroeck & van Hove, 2017).

According to the report of Nielsen Group (2015), a quarter of users shop for groceries online, with more than half having the intention to do so. In addition to events that fundamentally affect life, such as birth and death, cultural and geographical factors, and variables such as product quality and convenience impact the intention to shop for groceries online (Blitstein et al., 2020).

Unlike other types of online shopping, more than one purchase is made in multiple product types in a single grocery shopping session. This aspect puts the grocery category in a different place from other online shopping types in terms of usability. Also, while online shopping can be used for purchasing non-essential products, groceries are an essential need. That's why 'efficiency' rather than 'enjoyment' is more prominent when researching experience (Freeman, 2009).

Online grocery shopping stands out from in-store grocery shopping for convenience, as there is no need to carry grocery products home or wander between the shelves. But for online grocery shopping to become a habit, it takes more than just delivery and time-saving benefits. Also, even though many studies and reports predict online grocery shopping will increase in the next few years, it is only possible by providing users with a satisfying user experience (Freeman, 2009).



## **2.2 User Experience**

According to Hassenzahl & Tractinsky (2006), experience occurs when users interact with a product, system, or service. User experience (UX) is formed by the user's expectations, motivation, needs, the system's complexity, usefulness, and functionality, as well as the meaningfulness of the context where the interaction occurs between user and system (Hassenzahl & Tractinsky, 2006).

### **2.2.1 Temporality of Experience**

According to Karapanos et al. (2009), the adoption of a product consists of three phases: orientation, incorporation, and identification. These phases follow a path from the orientation to the identification stages. At each phase, distinct qualities of the product form a temporal pattern. In addition, three main forces occur, which provide the transition between the phases, and by doing so, a user experiences the product over time. These forces emerge as increased familiarity, functional dependency, and emotional attachment (Karapanos et al., 2009). Figure 2.1 shows the temporality of the experience.

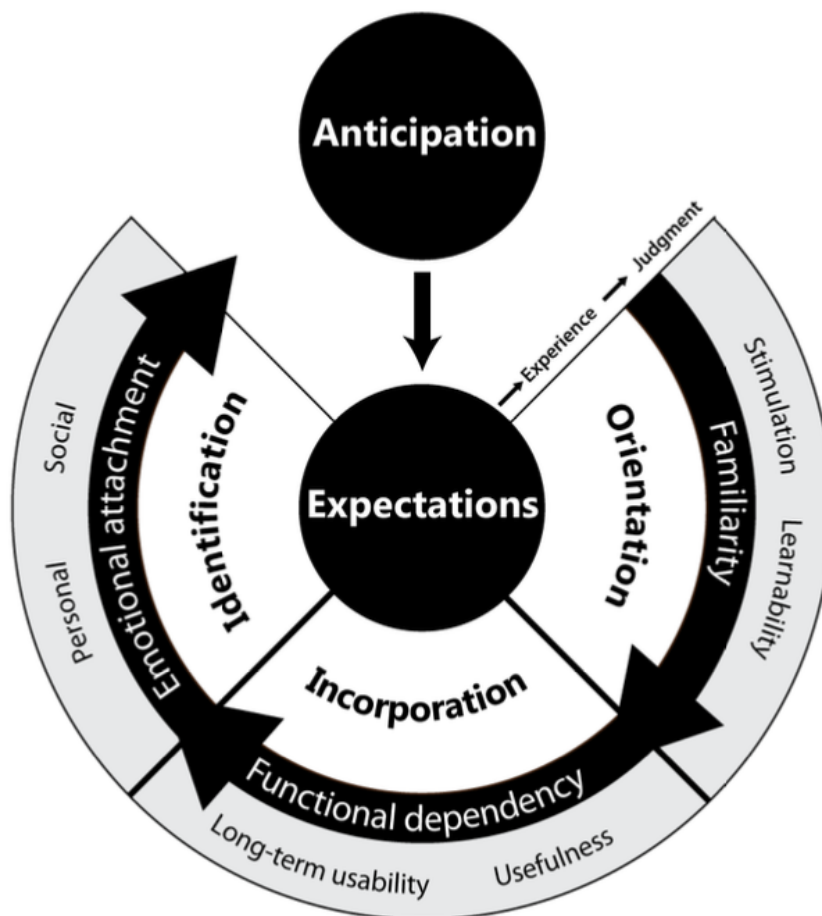


Figure 2.1 Temporality of experience (Karapanos et al., 2009)

Karapanos et al. (2009) explained the temporality of the experience model as follows: Anticipation is the user's prediction of an experience with the product that occurs before the actual experience. Its 'micro-temporality' makes it an episode of an experience, and the experience itself is constructed with the combination of episodes. Each episode points out a different product quality, such as aesthetic. Episodes may occur in the same time frame. The time frames of the episodes may be distributed differently in time. This difference in time distribution results in the transition between phases of adoption of the product. Orientation is the first phase of the experience, which occurs while the user interacts with the product. This indicates the excitement or frustration towards flaws while learning. The second phase is incorporation, where the user attributes a meaning to the product, which is constructed by long-time usability, making it more crucial than learnability. This

makes usefulness the main factor of experience for that time. The third and last phase is identification. At this phase, the product becomes a part of the user's life. It connects the user to others or the way around by relating with the self-identity of the user (Karapanos et al., 2009).

### 2.2.2 Theory of Planned Behavior

The theory of planned behavior (TPB) is a behavioral model used to understand and predict human behavior (Ajzen, 1991). It was built on the Theory of Reasoned Action (TRA) (Ajzen & Fishbein, 1977), which was improved by adding a third factor, 'Perceived Behavioral Control,' to improve the model's predictability. According to this model, an individual's intention to undertake a specific behavior is a strong determinant for the likelihood of performing that behavior. Intentions represent a person's motivation to engage in a given behavior; thus, stronger the intention is, the higher the chance to perform that given action. TPB suggests that a person's intention is determined by three factors: attitudes toward the behavior, subjective norms, and perceived behavioral control (Figure 2.2).

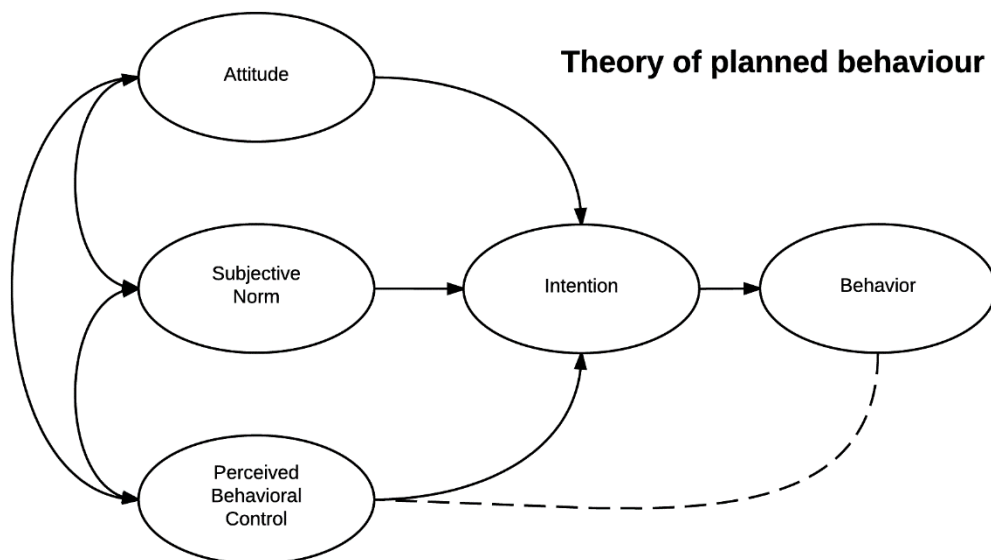


Figure 2.2 Theory of Planned Behavior (Ajzen, 1991)

Ajzen (1991) describes an attitude toward a behavior as how a person evaluates that given behavior and its likely consequences. For example, if the person believes that the behavior will make a positive difference in her/his life, it is more likely that he/she will perform the behavior. The second determinant is the subjective norm which refers to how people in one's social circle will think about a specific behavior. Lastly, the third determinant of intention is the perceived behavioral control, referring to whether a person has the necessary means to exhibit the behavior or its perceived ease or difficulty. It is assumed that perceived behavioral control is also related to one's past experiences and expected challenges, as Ajzen (1991) suggested. So, according to TPB, people will likely be engaged in a behavior if they evaluate a specific behavior (i.e., online grocery shopping) with a positive attitude and believes that their significant others will want them to perform that behavior; while also if they feel they have behavioral control, then there is a higher intention or motivation to carry out the behavior.

### **2.2.3 Technology Acceptance Model (TAM)**

Similarly, the Technology Acceptance Model was adapted from the Theory of Reasoned Action to specifically address user acceptance of the information systems (Davis, 1989). The model posits that perceived usefulness and perceived ease of use have a direct effect on behavioral intention. Perceived usefulness refers to a user's perception that using a specific system or technology will increase his/her job performance. On the other hand, perceived ease of use refers to the degree a user expects the use of a system to be easy/free of effort. Perceived ease of use has been hypothesized to have a direct effect on its usefulness.

Building on the perceived ease of use and the perceived usefulness of technological systems pointed out on the TAM, it can be asserted that various aspects of online shopping platforms have an impact on users' shopping behavior. According to Sreeram et al. (2017), many features of online grocery shopping platforms, along with the existing product diversity, product discounts, and convenience regarding

time combined with the novelty of the technology, are all highly likely to trigger purchase behavior. Moreover, the product variety provided on the online shopping platforms and the possibility of buying the groceries through a single channel also affect users' behavioral intentions (Sreeram et al., 2017).

However, although the advantages offered by the technology on online shopping platforms are indispensable for user satisfaction, it has been seen that user satisfaction alone does not suffice for the long-term adoption of such systems. Users might opt for and complete all their shopping on a single platform just because of the lack of many options (Sreeram et al., 2017).

### **2.3 Factors Affecting Online Grocery Shopping Experience**

In this section, first, the effecting factors of the online grocery shopping experience in the general context identified in the literature are revealed. Following, studies relevant to the impact of Covid-19 on the online grocery shopping experience are presented.

With a glance into the literature studies focused on online grocery shopping adoption, development of online grocery shopping behavior, or increasing online grocery shopping is discovered a variety of reasons affecting them. For example, Freeman (2009) looked at the decision-makers of users between shopping online or in-store for groceries, which he founds depends on many factors such as convenience, payment methods, product freshness, product variety, product quality, price and help service in changing rates for each user. Blitstein, Frenz & Jilcott Pitts (2020) identified the motives of users for doing grocery shopping online and reveal the economy as the leading motive which is explained as timesaving and bringing price advantage. In another study, Kaur & Shukla (2016), investigated behavior development and found that both product visuals, content, and ease of use of online platforms affect participants. In the same study, they also revealed that full-time working users prefer online grocery shopping due to save time. In fact, instead of

taking their time, using the home delivery method, and paying more, they approach it as value for time and effort saving (Kaur & Shukla, 2016). In another study, Çakır & Kazançoğlu (2020) focused on the effects of the technology aptitude of users, and they stated that users with low technological readiness think that the return and shopping processes will take more time than in-store shopping which will cause more financial losses due to logistics-related costs.

Moreover, the same factors are highlighted in different studies also, and there were both contradictions and similarities between their findings. Following, some study results are presented together with relevant studies.

### **Health factor**

According to the study conducted by Akgüngör et al. (2010) in Turkey, with the perception of lower health risk and higher nutritional value, users prefer to buy organic foods. In another study, Blitstein, Frentz & Jilcott Pitts (2020), conducted multi-method research to identify both positive and negative effects of online grocery shopping on healthy nutrition in Germany and the US. According to their results, only 2% of US participants said they preferred online grocery shopping for their healthy eating concerns, while 10% of Germans stated that they could achieve their nutritional goals thanks to online grocery shopping. Also, online grocery shopping caused a decrease in impulse buying behavior, and fruit and vegetable intake decreased by buying more packaged products due to perishing foods. (Blitstein, Frentz & Jilcott Pitts, 2020).

### **Product quality**

In the same study, Blitstein, Frentz & Jilcott Pitts (2020) stated that availability and variety are influential factors of the product, from special nutritional needs to providing access to more variety and fresher food. Participants also explained that they use online grocery shopping to access higher quality products with options such as local foods and organic foods (Blitstein, Frentz & Jilcott Pitts, 2020)

In another study from Turkey, participants with low intention to shop online are worried about having poor quality or perished products, since they cannot play an active role in the selection of products. They want to select the products where standard quality is difficult to achieve, such as meat, fish, poultry products, and fruit and vegetables, unlike packaged grocery products. On the other hand, they tend to prefer products that have standard quality and are difficult to carry in terms of weight (Çakır & Kazançoğlu, 2020).

### **Demographics**

Many different results are contradicting each other on the effect of users' demographics on adopting online grocery shopping. According to the results of research conducted in India, while gender does not affect the adoption of online grocery shopping, income and age emerge as effective factors. Also, no effect of marital status and occupation on online grocery shopping behavior is observed. (Kaur & Shukla, 2016).

In another study, Wahyudin & Azali (2020) found that gender and occupation have an impact on adopting online grocery shopping. They stated that women do more online grocery shopping. Also found that working people do more online grocery shopping because they have limited time.

Unlike many other studies, Lu et al. (2022) explained in their study that male users were doing more online grocery shopping before the pandemic. In addition, they also didn't observe a significant effect on education and income due to the internet shopping is no longer a privilege in our age (Lu et al., 2022).

Research in the field of online grocery shopping adoption generally focuses on sociodemographic since this information are easy to identify according to Van Droogenbroeck & Van Hove (2017). They explained that in many studies, the results did not reflect the actual situation, since being an online shopper is not asked participants as a requirement. Also, they stated the results remain one-sided since different dimensions of demographics are not considered together. For example,

income and education impact were ignored in gender-based research Van Droogenbroeck & Van Hove (2017).

The general comment on gender is that it seems that women's adoption of online grocery shopping is not related to technological predisposition, but their role in the family as a homemaker. For this reason, it is biased to say that women adopt online grocery shopping more without exploring both technological readiness and different demographic information of users together (van Hove, 2022).

### **Household**

According to Van Droogenbroeck and Van Hove's study (2017), although different factors impact the adoption level of online shopping platforms, household characteristics have also been found to be directly related to the users' motivation to adopt them. Thus, focusing merely on the demographic aspects such as age would be misleading in terms of the identification of the underlying reasons behind adoption. In Van Droogenbroeck and Van Hove's study (2017), it is shown that the impact of the age factor on the adoption of online grocery shopping is less compared to household characteristics. However, age and occupation have been seen to be linked to the users' intention of saving time (Van Droogenbroeck & Van Hove, 2017).

### **Physical Interaction**

While doing online grocery shopping, users want to be able to see the product to understand product dimensions, freshness, etc. At this point, the sense of sight becomes important. In addition, a sense of touch seems to be important for users to evaluate the freshness of the product, especially for vegetables/fruits. When the user cannot touch it, they must trust the vendor. (Freeman, 2009).

According to (Argo et al., 2006), although users want to explore grocery products by touching them to understand their freshness and quality, users also don't want other people to touch grocery products due to hygiene concerns.



### 2.3.1 Grocery Shopping Apps

We are in a new era called the "smartphone age", where innovation and creativity come together. Smartphones have turned into multi-purpose and highly functional devices used not only for communication but also for computing activities (Chakraborty et al., 2022).

To design meaningful experiences, mobile apps on smartphones are prominent according to Chakraborty et al. (2022). With the advancements in ICT, users may save time since they don't need to put much effort to access information. Furthermore, with mobile apps, an interactive user engagement is maintained.

Mobile apps on smartphones are especially promising in terms of creating meaningful experiences for their users. The advances in such technologies offer users ease of access to information while also holding the potential for users to save time substantially. Moreover, these apps also provide an interactive engagement to their users (Chakraborty et al., 2022).

There were studies focused on the decision of shopping in-store or online, the perception of users' intention to adopt grocery shopping apps has not been fully explored yet according to Chakraborty et al. (2022). Today, grocery shopping apps have increasingly become the most convenient option for users compared to brick-and-mortar stores. Also, with the increase in smartphone usage and technological developments that make online payment methods safer and easier, apps are preferred more for grocery shopping by users than brick-and-mortar stores (Lu et al., 2022).

The more comfortable users are with technology, the more grocery shopping app usage increases (Bruwer et al., 2022). Not surprisingly, according to the recent study by Wahyudin & Azali (2020), more than 89% of their participants used apps on their mobile phones for grocery shopping because it was practical.

### **2.3.2 Impact of Covid-19 on Online Grocery Shopping**

#### **Frequency**

In their study, Lu, Wang & Li (2021) compare user behavior towards online fresh food shopping before and after Covid-19 in China and define factors that resulted in the increasing frequency of online grocery shopping. In the results, they observed the frequency of online grocery shopping increased 71% during Covid-19. When going deeper into the effecting factors, they discover education and income have no significance both before and after Covid-19 since fresh food is not preferred by users due to concerns regarding food quality. Also, due to the flexibility of their time, freelancers shop groceries online more than self-employed people before Covid-19. However, since everyone started working from home with Covid-19, occupation and working hours also lost their significance to perceived infection risk. (Lu, Wang & Li, 2021).

Chang & Meyerhoefer (2021) also found that online grocery shopping increased with Covid-19 in Taiwan, similarly to findings of Dannenberg et al. (2020) from Germany. One of the reasons for this is to prepare meals at home instead of ordering or going to restaurants, which also results in buying new grocery products according to Chang & Meyerhoefer (2021). They also explain that since the 'stay home' policy is not adopted in Taiwan and mobility of users continues, the increase in online grocery shopping is not due to restrictions, but to changes in user behavior, similar to the findings of (Andersen et al., 2020) from Denmark and Sweden (Chang & Meyerhoefer, 2021).

Moreover, Güney & Sangün (2021) support these results with their findings from Turkey and they also stated that even though adoption of online grocery shopping is increased, it is not the most preferred shopping channel in Turkey. Discount stores and neighborhood stores are preferred mostly by users due to their closeness to users' home and there are fewer people in discount stores and neighborhood stores than supermarkets (Güney & Sangün, 2021).

In line with the findings of Güney & Sangün (2021), Grashuis et al. (2020) also stated that in-store shopping is the most popular preference of users while the number of the Covid-19 cases both increasing, decreasing, and in-balance. Moreover, they found that when the number of cases increases, the home delivery option stands out, and when decreases, in-store shopping stands out more than other options. However, as the number of cases decreased, the impact of delivery options on online grocery shopping preferences also decreased. Accordingly, researchers infer that online grocery shopping behavior is affected by virus fear (Grashuis et al., 2020).

### **Stockpile Behavior**

Even though there were restrictions due to Covid-19 or not, with the fear of the infection, people tend to stay at home and cook their meals at home, which is resulted in buying more grocery products according to Chenarides et al. (2021). During their fieldwork in the US in May 2020, they found that almost half of the participants bought more food products than they normally would and purchased surplus food was stocked. Also, their results shows that the majority of participants had to buy products they could find in the grocery store due to empty shelves (Chenarides et al., 2021).

When the reasons of stockpiling investigated, most of the participants stated that they are stocking up on food in case it becomes out-of-stock. In addition, while in-store shopping, they buy popular food products, even if they do not need them, while it is ready and not out of stock Chenarides et al (2021). According to another study, excessive food buying, and stockpiling occurred as food access became more difficult and cooking at home fed stockpile behavior (Güney & Sangün, 2021).

When the consuming of stocked food is examined, Chenarides et al (2021). Found that people are mostly consuming the stock food and stocking the new one instead. However, around 10% of stockpile respondents said they would open stocks when they thought the food crisis was over Chenarides et al (2021).

Moreover, grocery product preferences of people changed during Covid-19 since they prefer non-perishable and suitable stock foods such as grains, legumes, and frozen food (Chang & Meyerhoefer, 2021). Fruits & vegetables, on the other hand, are ordered from local producers and farm-related platforms due to perceived food freshness according to findings of Chang & Meyerhoefer (2021).

With the results of the stockpile behavior researches, Güney & Sangün brought attention to food waste. According to their study, during Covid-19, people have become more sensitive about food waste due to excessive food purchase which is resulted in concerns due to food access in some people (Güney & Sangün, 2021). Also, the increasing consumption were reflected in the prices with the supply process problems. Additionally, food prices have become more important to users as some people lost their jobs due to Covid-19 (Güney & Sangün, 2021).

## **2.4 Conclusion**

Related previous literature on the experience of online grocery shopping is presented in this chapter with the context of Covid-19. A great number of studies that focus on adoption of online grocery shopping and user behavior towards the subject highlight the importance of these subjects. However, with the advancements in the ICT, experience of grocery shopping as a daily activity is changing. Since technology is developing faster and the way people experience online grocery shopping is changing, the studies conducted on online grocery shopping are losing their validity. Moreover, in the times of the Covid-19 health crisis, the change in the grocery shopping experience changed itself.

Lastly, this study started in mid-2020s, and the fieldwork took place between October 2020 and October 2021. While starting to this study, there were almost no studies focused on the experience of grocery shopping apps with the impact of Covid-19, however nowadays, several studies are focusing on the subject, which proves the importance of this study. Since the experience of grocery shopping apps

with the impact of Covid-19 are examined in this study, some results and theories from the literature for understanding factors affecting the use of grocery shopping apps will be taken into account while revisiting the research questions in the conclusion chapter.



## **CHAPTER 3**

### **FIELDWORK**

In this chapter, firstly, the need for fieldwork into online grocery shopping experience is explained. Following, the aim and overview of the fieldwork are presented. Accordingly, each stage of the fieldwork methodology is introduced with the information on participant selection, data collection tools, venue and equipment, and data analysis methodology.

#### **3.1 Introduction**

In order to understand the online grocery shopping experience, it is necessary to reveal the user-product interaction first. With the scope of this study, the mentioned product is defined as an online grocery shopping platform. As discussed in detail in the literature chapter, one of the components of this interaction is the user themselves. Many different variables such as the user's dietary habits (Blitstein et al., 2020), technology aptitude (Çakır & Kazançoğlu, 2020) and the number of households (Van Droogenbroeck & Van Hove, 2017) affect the shopping habits and preferences of users.

While it is aimed to improve the user experience for online grocery shopping, another component of user-product interaction is the platforms. Online grocery shopping can be done through many different channels such as websites, mobile applications (apps), social media applications, and mailing lists. Since the capabilities of each channel and the platforms' offerings to the user vary, as the first step of the fieldwork within the scope of this thesis, a review is conducted by the researcher on the platforms that currently provide online grocery shopping services.

While users are engaging in online grocery shopping platforms, each variable creates a space to meet different expectations and needs of the user. In the literature, it is offered to use the product as a tool and support sectoral growth, rather than satisfying these variables from a user experience perspective to better meet user expectations. Although many resources are presented in the literature from the marketing aspect, the lack of resources in which the experience is discussed with the design approach, online survey, and semi-structured interviews, which are the 2nd and 3rd stages of this fieldwork, in order to reveal what the online grocery shopping experience is before the Covid-19 Pandemic, during the full closure period and during the semi closure period of Covid-19 Pandemic.

### **3.2 Aim and Overview of the Fieldwork**

Within the scope of this fieldwork, it is aimed to identify the dimensions of user experience with online shopping platforms and also to discover how it is impacted by the COVID-19 pandemic if any and identify the points that are open to improvement in the online grocery shopping experience of the users.

The fieldwork conducted within the scope of this thesis consists of 3 stages and 6 different tools and methods are adopted:

- Stage 1: A review of existing online grocery shopping platforms/platforms
- Stage 2: Online survey
- Stage 3: Online interview sessions
  - Technology Readiness Index 2.0
  - Semi-structured interview
  - Think Aloud Protocol
  - Customer Journey Map



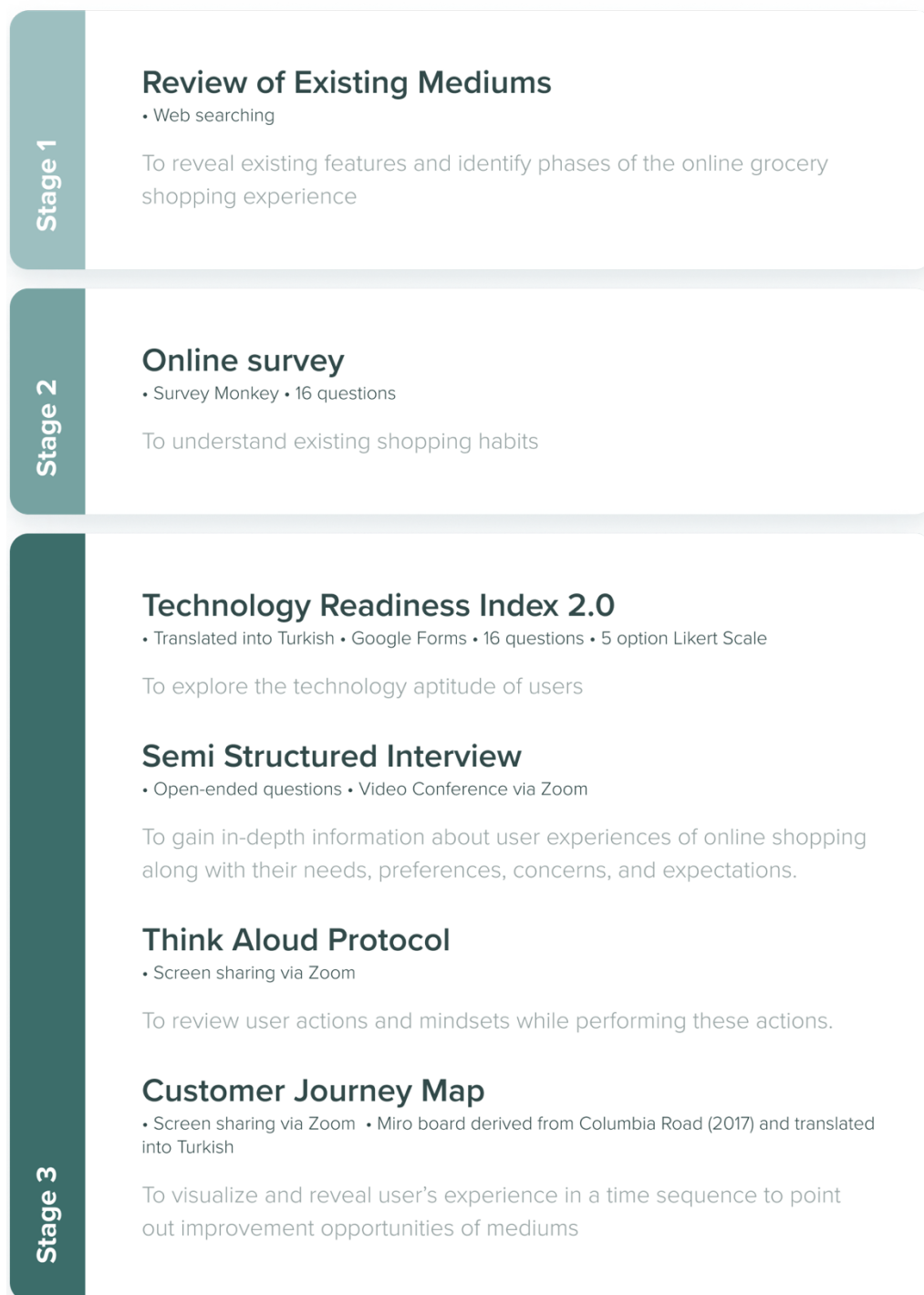


Figure 3.1 Fieldwork stages

For the first stage, a review of online grocery shopping platforms is conducted to identify existing platforms and channels along with each platform's features. Also, the sequence of doing online grocery shopping is acknowledged. With this understanding, existing options of users for each step of the online shopping experience are revealed. With the insight gained from the review on online grocery shopping, the online survey is planned in the defined sequence.

In Stage 2, an online survey is conducted to better understand participants' habits by revealing the information about what participants do and when they do before, during, and after online grocery shopping.

In Stage 3, semi-structured interviews are conducted with participants to have in-depth information about their overall experience with online grocery shopping platforms. Before beginning the interviews, participants are asked to have Technology Readiness Index Online Questionnaire 2.0 (Parasuraman & Colby, 2014). During interviews, user actions while using grocery shopping apps and mindsets while performing these actions are revealed with the help of the Think Aloud Protocol. Lastly, a Customer Journey Map (CJM) is created together according to their shares throughout the interviews to have a holistic experience map.

### **3.3 Data Collection Tools and Methods**

To reveal a user experience more comprehensively, combining different types of sources is necessary (Agar, 1996). To differentiate data sources and gain more in-depth information Blomberg & Burrell (2012) stated that data triangulation, which means using qualitative and quantitative methods to complement each other, is essential. With this consideration, in-depth interviews with think aloud protocol complemented with the customer journey map (CJM) tool are used as qualitative methods, while technology readiness index (TRI) 2.0 and survey methods are adopted as quantitative methods for data collection. However, it is important to note that TRI and survey methods are not central to the research study within the context

of this thesis. In-depth semi-structured interviews constituted the primary method of data collection. Individual TRI results of each participant are discussed in Section 4.3.1 in accordance with the interview analysis findings to reveal the extent to which their technology acceptance levels align with their adoption of online grocery shopping platforms.

### **3.4 Stages of the Fieldwork**

In the following sections, explanations for choosing those specific methods and procedures of application in fieldwork are described under defined fieldwork stages.

#### **3.4.1 Stage 1: Review of Existing Online Grocery Shopping Platforms**

In order to enroll the platforms available to the user for online grocery shopping, platforms that operate both in Turkey and around the world are searched in the internet environment, mobile phone application stores, and social media applications - Instagram and Facebook. During this research, the keywords “grocery shopping” and “food shopping” were used both in Turkish and English. At the same time, the most used or the most satisfying online grocery shopping platforms lists in different countries were also benefited from the web searches conducted at Google Search Engine. Afterward, each platform is listed in different rows and each feature identified is listed in a timely order in columns in the Microsoft Excel table. Checkboxes are used for identifying features each platform offers. All platforms found are processed in the table created in Microsoft Excel until having no new features occur other than already in the prepared table.

Based on the information obtained from this table prepared, the variety of features and services offered by online grocery shopping platforms and phases of online grocery shopping was revealed. These data were used while creating the online survey. Detailed information about how gathered data from the review of online

grocery shopping is used for designing the online survey structure and questions is explained in section 3.4.2.3.

### **3.4.2 Stage 2: Online Survey**

The survey is both a qualitative and a quantitative data collection method for gaining information on large populations' satisfaction, opinions, ideas, and evaluations (Ozok, 2007). To have a general understanding of user habits and preferences on a larger scale, an online survey is planned to be conducted. Using the survey method for this fieldwork aims to reveal participant preferences and habits for grocery shopping in both brick-and-mortar stores and online platforms, along with the context of the Covid-19 pandemic as pre-pandemic and during-pandemic phases.

#### **3.4.2.1 Participant Sampling for Online Survey**

Grocery shopping is necessary for every person; therefore, any limitation for participant demographics is not adopted. However, since the scope of this study is “online” grocery shopping, and it is aimed to gain insights into the user experience of online grocery shopping, using online grocery shopping platforms is defined as a requirement. In addition, snowball sampling, a sampling method from non-probability sampling methods (Ritchie et al., 2003), is adopted with the aim of reaching a variety of participants to have a larger perspective of the online grocery shopping experiences of users. These variables are gathered from literature review such as age, gender, the number of households, cities living in, and occupation (Blitstein et al., 2020; Çakır & Kazançoğlu, (2020); van Droogenbroeck & van Hove, 2017).

### **3.4.2.2 Online Survey Procedure, Venue, and Equipment**

The Survey Monkey platform is used for the online survey, and the survey consists of 16 questions in total. After brief information is given about the purpose of the study on the opening page of the survey, the estimated completion time and the contact information of the researcher are shared. Then, Consent Form approval is obtained from the participants by ticking the checkbox as the requirement of continuing the survey. Afterward, on the first page, questions to understand the general grocery shopping habits of the participant are asked. On the next page, after nine questions asked about their online grocery shopping habits before and during the Covid-19 pandemic, participants were asked to fill in their contact information so that the researcher could contact them if they agreed to be a participant in the interview, which is the next step of the fieldwork.

### **3.4.2.3 Online Survey Questions**

The structure of the online survey is constructed according to the phases of doing online grocery shopping as pre-shopping, during-shopping, and post-shopping phases since shopping is a process. Also, the context of the Covid-19 pandemic is infused in each phase as pre-pandemic and during-pandemic. Later, online grocery shopping platforms' features, product variety, and time sequence of shopping experience identified from the review of online grocery shopping platforms are used for designing the questions and question order of the online survey.

Four different types of questions are used: multiple choice, checkbox, ranking, and open-ended questions. On the first page of the survey, pre-shopping questions about the frequency and amount of grocery shopping, shopping planning phase, and related preferences of participants are asked.

On the second page, participants' preferences are asked both for pre-pandemic and during the pandemic. To elaborate, preferences of product types (such as legumes,

green groceries, etc.), channels (such as websites, apps, etc.), payment options, and delivery options are asked with ranking and multiple selection question types.

Lastly, participants are asked whether they have any sensitivities or criteria while shopping for groceries in the manner of both products, platforms, or services with the open-ended, checkbox, and multiple-choice question types.

### **3.4.3 Stage 3 Online Interview Sessions**

Stage 3 consists of a combination of 4 data collection methods. First, participants are asked to fill in the online Technology Readiness Index (TRI) 2.0 questionnaire by (Parasuraman & Colby, 2014). Following, the online semi-structured interview with think-aloud protocol was conducted and complemented with customer journey map (CJM). In the following sections, all 4 methods are explained in detail. Afterward, the venue and equipment for each method are introduced.

#### **3.4.3.1 Technology Readiness Index (TRI) 2.0**

This method is used for recognizing the tendency of participants to adopt and use new technologies in their daily lives, as Parasuraman and Colby (2014) stated. Thus, participants' technology aptitude levels impact their online grocery shopping adoption is critical for this study. Also, in the literature, several studies show technology acceptance levels of users are crucial while exploring the user experience of online shopping (Bruwer et al., 2022; Park, 2009; Prabowo & Noegraheni Hindarwati, 2020).

TRI 2.0 questionnaire consists of 16 questions to assess 4 dimensions: optimism, innovativeness, discomfort, and insecurity. A 5-point Likert scale is used for rating each question.

### **3.4.3.2 Semi-Structured Interview**

Since the questions posed to the participants during the online survey are designed to receive specific answers and to provide information about user habits, in-depth semi-structured interview method is employed to further investigate participants' user experience of online grocery shopping. This method is used to create a space where participants can express their online grocery shopping experiences with the explanation of their needs, expectations, and preferences to answer questions "why" and "how" (Wilson, 2014) and in this way, to obtain more comprehensive information about the experiences of the participants. During semi-structured interviews, the concurrent think-aloud protocol is employed to understand the participants' experience when interacting with the user interface of a selected grocery shopping platform, along with its aspects leading to frustration, confusion, or satisfaction. For doing so, participants are asked to verbalize what they do and think while completing a certain task (perform your regular online purchase on your selected/most used grocery shopping application) during the interview session.

#### **3.4.3.2.1 Participant Sampling for Semi-structured Interview**

As the last question in the online survey, participants are asked to share their contact information if they volunteer for the interview, which is the next stage of the fieldwork. Among the participants who volunteered by answering this question in the online survey, participants who meet the requirement of doing online grocery shopping are selected from a variety of cities with the adoption of convenience sampling from the non-probability sampling methods. Living in different cities is determined as a variety due to the number of online grocery shopping platforms serving in this city and accordingly the variation of the participant's options.

According to Namey et al. (2016) the number of interviews required to reach an acceptable level for data collection, the participant number threshold was 8. With this information, the interviews are conducted with 8 participants.

### 3.4.3.3 Customer Journey Map

With Customer Journey Map, it is aimed to represent users' experience with online grocery shopping applications over time. It is also useful for revealing the features of the platforms and the services they offer to participants and determining the interaction points that are already offered by focusing on the user-product interaction. When a customer journey map focuses on a current experience and not a future experience, this method guides researchers to find gaps in the experience while highlighting improvement opportunities in the service, experience, and the product, according to (Stickdorn et al., 2018)

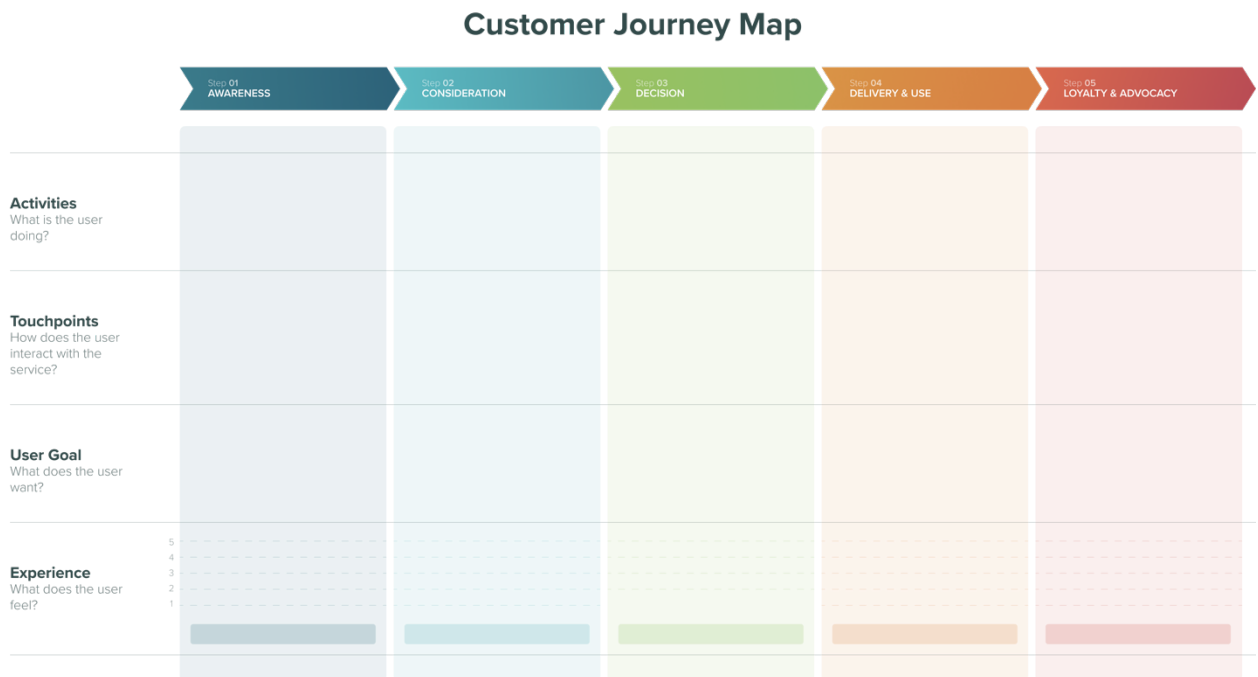


Figure 3.2 Customer journey map

### 3.4.3.4 The procedure, Venue, and Equipment of Stage 3

In the first phase of Stage 3, the participants are asked to fill in the online TRI Questionnaire (Parasuraman & Colby, 2014). Since all participants are Turkish and



the study is conducted in Turkey, TRI 2.0 is translated into Turkish. The questionnaire is prepared in Google Forms and a link for the questionnaire is shared with participants before conducting interviews.

After participants complete TRI 2.0 questionnaire, since this study is conducted under the Covid-19 circumstances, the Zoom Video Conferencing platform is used for interviews. The video conference invitation link is sent to the participants via WhatsApp, and the video recording of the call made over this platform is taken. Afterward, interviews are begun by explaining the aim of the interview to the participants, and then, the steps to be followed are introduced.

The flow of the interview questions is arranged in a timely order as pre-shopping, during shopping, and after shopping as in the online survey, with the context of pre-pandemic and during pandemic circumstances. Also, by reminding their answers from the survey, the motivations behind participants' online grocery shopping habits and preferences are revealed.

At the "during online grocery shopping" phase, participants are asked to share their screens via the Zoom Video Conferencing platform with the researcher, and interview session is followed with the think-aloud protocol. Participants are asked to perform their routine online grocery shopping on the online grocery shopping platform they use most frequently. While doing so, they are requested to verbalize what they do, think, and feel.

In the last phase of Stage 3, after completion of discussing each phase of the online grocery shopping experience, participants are expected to create a Customer Journey Map Stickdorn et al. (2011), with the help of typing and reminding their answers by the researcher. For participants to perform the task better, the steps to be followed are explained by screen sharing and showing an example of the Customer Journey Map (Tervala, 2017) prepared by Columbia Road, a "Nordic digital sales consultancy" firm. Following, an empty customer journey map created by the researcher in Miro the Visual Collaboration Platform is screen shared with the

participants and is filled by the operation of the researcher while participants are explaining their experience.

### **3.5 Pilot Study**

A pilot study was conducted with one person for Stage 3. Participant selection was made based on the researcher's ease of access and the participant's continuing usage of online grocery shopping platforms. This study was carried out face to face, and then a voice recording was taken with the mobile phone's own application so that the researcher could analyze the data later. Unlike the procedure described above, in Stage 3, the UX Curve Kujala et al. (2011) method was used instead of the Customer Journey Map.

The UX Curve method is suggested by Kujala et al. (2011) for evaluating long-term user experiences of products or services. However, despite highlighting participants' ranking on a scale for each phase of experience, this method lacks highlighting touchpoints of the experience and the aim of the interaction. For this reason, the UX Curve method is replaced with the Customer Journey Map in the latter stages of the research. Since this phase is changed, the pilot study is not included in the results and analysis chapters for this study.

### **3.6 Data Analysis Overview**

This section describes the data analysis methods carried out for fieldwork. Except for one open-ended question, the quantitative analysis methods will be used for the survey. Then, the 5-point Likert Scale will be used for the TRI 2.0 questionnaire (Parasuraman & Colby, 2014), which is the first step of the interview.

In Stage 3, Grounded Theory and thematic analysis methods will be adopted for the qualitative data analysis.

Grounded Theory is a method in data analysis in which codes are assigned to the repeating statements in the data and then these codes are repeatedly examined to identify the emerging categories (Glaser & Strauss, 1967). In other words, in Grounded Theory, starting with the initial research questions at hand, data guides the analysis leading to the discovery of codes during the process, rather than starting off with a set of pre-defined codes.

Thematic analysis is a qualitative analysis method that is used to identify and analyze the repeating patterns in data to make valid interpretations of it (Braun & Clarke, 2006).

First of all, the answers given by the participants to the questions will be added next to the column of each question in Microsoft Excel, and then each answer of the participants will be processed as themes and sub-themes. Finally, these themes will be evaluated together to create codes that will be the key findings of this fieldwork.

### **3.7 Ethical Considerations**

Since participants will be sharing their personal data, from their feelings to their household numbers, ethical approval is obtained from the Applied Ethics Research Centre of the Middle East Technical University, 122-ODTU-2021. (See Appendix C)



## CHAPTER 4

### FIELDWORK RESULTS AND ANALYSIS

This chapter presents the results and analysis of the fieldwork. Accordingly, it begins with the results of a review aimed to identify existing online grocery shopping platforms. Following that, the results and analysis of the online survey and online interviews are introduced separately. Then, all fieldwork findings are discussed together to reveal participants' online grocery shopping habits, attitudes towards online grocery shopping platforms and their online grocery shopping behavior.

#### **4.1 Results and Analysis of Stage 1: Review of Existing Online Grocery Shopping Platforms**

At this stage, online grocery shopping platforms were reviewed to explore what features were being offered to users, and to identify specific phases of online grocery shopping experience. Online grocery shopping platforms were gathered through web search engines, social media applications and mobile phone application stores were first listed on an Microsoft Excel Sheet. In total, 115 online grocery shopping platforms were collected during October, 2020. Hence, the information reflected this specified time and platforms.

As some features varied according to whether user has an account or not, the researcher created a user profile for some of the shopping platforms offering this option. The researcher also made grocery orders from different platforms that offers shopping in different channels: e.g. web page, app and Instagram as social media. Afterward, all identified features were listed in different columns and all online grocery shopping platforms in lines. These features are categorised under the following headings:

- User account
- Product variety
- Payment method
- Delivery time
- Delivery place
- Delivery follow up
- Help service

Then, options provided for these features were presented under related features. Cross marks and tick marks were used to indicate existing or non-existing options for each online grocery shopping platform. Also, columns for the information about serving channel, additional notes and link for related online grocery shopping platform were included. An example visual listing online shopping features for four brands can be seen in Figure 4.1.

	Novaponics	Organikkapında	Taze Direkt**	Mimi Çiftliği
<b>User Account</b>	×	×	✓	×
<b>Product Variety</b>				
Fruits & Vegetables	×	×	✓	×
Pasta / Legumes	×	✓	✓	×
Dairy products	×	✓	✓	×
Meat products	×	✓	✓	×
Honey / Jam / Syrup	×	✓	✓	×
Sauces / Oils	×	✓	✓	×
Greenery	×	×	✓	×
Local Food (tomato paste, tarhana, etc.)	×	✓	✓	×
Special Foods (micro-sprouts, superfoods, etc.)	✓	×	✓	✓
<b>Payment Method</b>				
Credit Card	✓	✓	✓	✓
Bank Transfer / EFT	×	✓	×	×
Cash	×	✓	✓	×
<b>Delivery Time</b>				
Instant Delivery	×	×	×	×
Post-Dated Delivery	✓	✓	✓	✓
<b>Delivery Place</b>				
Delivery Point	×	×	×	×
Home delivery	✓	✓	✓	✓
Take-away	×	×	×	×
<b>Delivery Follow-Up</b>	×	✓	×	✓
<b>Other</b>				
<b>Serving Channels</b>				
Instagram	×	×	×	×
WhatsApp	—	—	×	×
Web Sitesi	✓	✓	✓	✓
App	—	✓	✓	—
Facebook	×	×	×	×
Link	<a href="http://novaponics.com">novaponics.com</a>	<a href="http://organikapinda.com">organikapinda.com</a>	<a href="http://tazedirekt.com">tazedirekt.com</a>	<a href="http://mimiciftligi.com">mimiciftligi.com</a>
Additional Notes	It produces micro-sprouts with vertical farming especially for restaurants.	There are organization teams in city centers.	It has its own cold chain food transport system. There is a choice of delivery day/time. There are payment options that vary by region.	Links from Facebook to the web for shopping. Delivery and tracking with Yurtiçi Kargo

Figure 4.1 An example visual listing online shopping features for four brands

#### **4.1.1 User Account**

Online grocery shopping platforms can serve through one or more channels (e.g., a mobile app and a website). Some of the shopping platforms offer users to create a user account as an option or it might be a required feature to access the product options. In some shopping platforms serving through websites, the membership requirement is mandatory after the shopping cart is created to be able to proceed to ordering and/or purchasing phases. There are also online grocery shopping platforms that do not require user account.

Generally, while creating a user account, user's name, surname, e-mail address, mobile phone, address information, and optionally credit card information is recorded an option to add multiple addresses is also offered. Besides this information, some mobile apps keep the user's favorite products and past orders lists.

#### **4.1.2 Product Variety**

As introduced in Chapter 1, in this research, the term grocery is referred to edible products and drinks. Within this scope, grocery products were identified as follows.

- Dairy products
- Fruits and vegetables
- Greeneries
- Honey / jams / syrups
- Local foods (tomato paste, tarhana etc.)
- Meat products
- Pasta and legumes
- Sauces / oils
- Special foods (micro-sprouts, super foods etc.)

In the platforms reviewed, there was only one platform (i.e., TazeDirekt) that offered all the product categories. Across all platforms, the most popular grocery products



were found to be fruits and vegetables. Some of the platforms were specified only in fruit and vegetables, even in one kind, such as citrus. Pasta and legumes were offered by most of the platforms. The least popular grocery product was meat. Apart from these, there were no significant differences between the number of platforms offering the remaining grocery products from the list.

Some platforms presented product combinations as a package varying in their amount or the number of grocery products. For example, *Mevsimi* was offering a small package combination for peppers, tomatoes, and oranges; and a platform package with the addition of beetroots, apples, and dill. These product combinations vary seasonal and according to freshness of the products.

#### **4.1.3 Payment Method**

Three common options for payment methods were identified: cash, credit card and EFT/bank transfer. Credit card payment was the far most popular payment method while cash payment is the least in all grocery shopping platforms. However, all reviewed mobile apps for online grocery shopping provided credit card as payment as the only option. Platforms with user account feature had the option for preserving credit card information for future purchases.

#### **4.1.4 Delivery Time**

For online grocery shopping two delivery time options were identified: instant delivery and post-dated delivery. For post-dated delivery, platforms offered time slots to users to choose from possible delivery time alternatives. Some platforms had an additional service to call users on their mobile phone prior to planned delivery time for confirmation.

#### **4.1.5 Delivery Place**

Among the platforms reviewed for online grocery shopping, delivery place appeared as a feature with following options: home delivery, delivery point, and take-aways. All platforms included home delivery option. However, delivery point option was offered only by a few platforms. Some of the platforms offered pick-up point option around the district that users specify. On the other hand, some platforms offered a specified location as a pick-up point, which may be a market that platform is in collaboration with or the field which the purchased products were harvested from.

The platforms with user account feature were keeping the delivery address of users and keeping the address was an optional feature according to users' preferences in some platforms, while other platforms were keeping this data as a part of the user profile.

#### **4.1.6 Delivery Follow-up**

After completing online grocery shopping, majority of the platforms offered information about delivery status. While some platforms had their own operations for deliveries, others collaborated with delivery companies such as *Yurtiçi Kargo*, which is working all around Turkey. Platforms collaborating with delivery companies were using their delivery partner's delivery follow-up feature, if available.

Delivery status generally presented to users in the following steps: 'order is taken', 'preparation of shopping bag', 'carriage by courier', and 'delivery is completed'. Not all grocery vendors offered all these steps in their status. Some platforms integrated a live location tracker of courier that can be accessed by users from their web site or mobile app. Also, during the review it is observed that platforms with an instant/quick delivery option provide a live location tracker feature while platforms with only scheduled delivery options do not have such a feature. Lastly, as mentioned in Section 4.1.4, some online grocery shopping platforms were making phone calls,

e-mailing, and sending SMS text messages to users' mobile phones to update them about the delivery status.

#### **4.1.7 Help Service**

In this section, help service is referred to as a specific feature for solving users' problems related to during-shopping and/or post-shopping phases. Accordingly, all online grocery shopping platforms had a type of help system for users. With this approach, features such as frequently asked questions (FAQs) on web sites and mobile apps were not included. One of the help services offered by the grocery shopping platforms websites and apps was chat bots. Some of the chatbots had options for questions, such as "where is my delivery?" and a text box for users to type their own questions. WhatsApp hotline as a and call center numbers were amongst other option provided.

#### **4.2 Results and Analysis of Stage 2: Online Survey**

The online survey was conducted with the aim of understanding participants' habits in online grocery shopping. Results of Phase 1 -review of existing online grocery shopping platforms- was used for forming the flow of online survey in accordance with the flow of online grocery shopping experience. Features identified from Phase 1 were also infused in online survey questions to reveal participants' preferences about these features.

The survey was prepared and carried out using Survey Monkey. Of the 121 participants, 105 completed the entire survey. 2 of the participants did not agree to give consent in Question 1 and left the survey before starting and 14 participants left the survey on second part. Results of these 14 participants were still included in the analysis of the questions they responded since the questions were not dependent on each other and not completing all questions did not disrupt the analysis.

Survey questions started with general grocery shopping questions on the first part of the survey and continued with online grocery shopping questions on the second part. Participants were directed to the end of the survey if they stated that they do not shop for groceries online. At online grocery shopping questions defined on the second part of the survey, participants' preferences about online grocery shopping platforms' features - which were identified during the review of existing grocery shopping platforms - were investigated within the context of the Covid-19 pandemic. Finally, on the part three, participants' general suggestions or expectations were asked about the online grocery shopping experience without any obligation to answer.

Results and analysis of the specific survey questions are presented in the following sections.

#### **4.2.1 General Grocery Shopping**

In this section, participants were asked five questions in relation to their grocery shopping habits and preferences in general. All five questions were answered by 112 participants.

***Q2. Do you regularly shop for groceries?*** While 90% (107) of the participants indicated that they shop on a regular basis, 10% (12) answered as otherwise.

***Q3. Do you shop groceries only for yourself?*** The participants were asked about whether they shop for themselves or for others (as well). Of the participants answered this question, 27% (33) of them indicated that they only shop for groceries for themselves, while 72% (86) of the participants said that they stated otherwise.

***Q4. How much do you shop groceries?*** This question aimed to understand the participants grocery shopping scale. The participants' answers were as follows: shopping only for instant needs 36% (43); buying enough for a whole week 60% (72); and buying enough for a season or the year if products are non-perishable 3% (4) as can be seen in Figure 4.2.

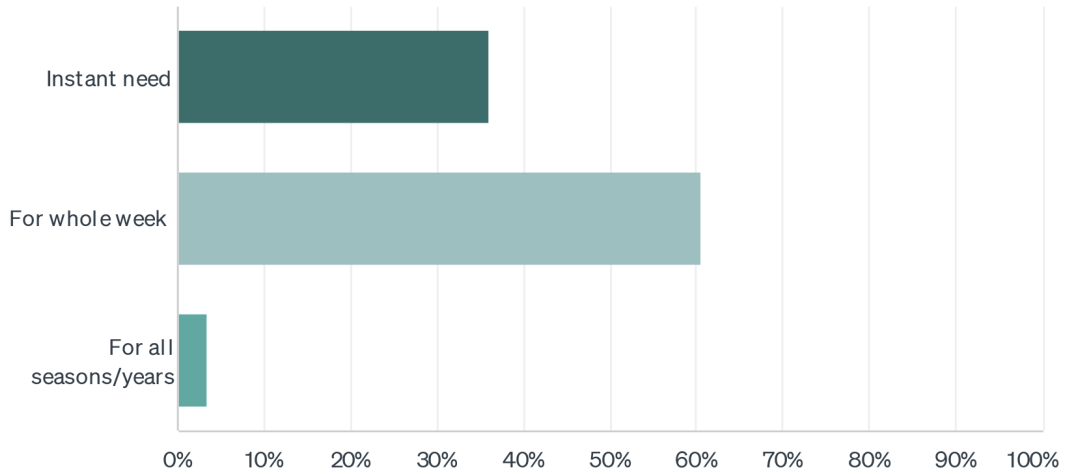


Figure 4.2 How much participants shop for groceries

***Q5. If you are making a shopping list, how long before shopping do you prepare it?*** Participants were asked if they prepare a shopping list for groceries, and if they do, when they prepare it. The participants' answers were shown in Figure 4.3 as follows: no shopping list prepared/shopping spontaneously 31% (37); preparing the list just before the grocery shopping 45% (54); adding grocery items to the shopping list as soon as runs out 18% (22); and other options 5% (6).

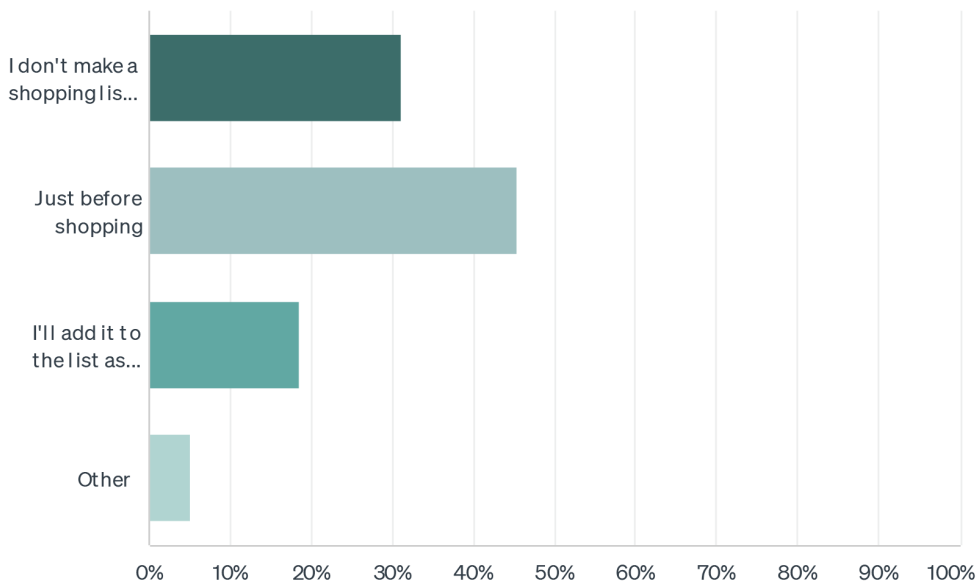


Figure 4.3 Time preferences for preparing a grocery shopping list

For participants who answered Question 4 as they do not prepare a grocery shopping list, a skip logic was used for Question 5 asking participants about their medium preferences for grocery shopping lists.

**Q6. In which environment do you prepare your shopping list?** Distribution of 71 participants, who answered their platform preferences for preparing grocery shopping lists (See Figure 4.4), are as follows: using the mobile phone’s note taking feature 36% (26); third party mobile apps 4% (3); adding the grocery items to shopping bag of the grocery shopping platform 9% (7); paper-based list preparation 39% (28). The remaining participants 9% (7) chose ‘other’ options with the following preferences: Google Keep; sending an SMS (short messaging service) to self; creating a list on a whiteboard (and taking picture of the list to prevent paper waste); Microsoft Excel; hybrid options according to the number of items on the shopping list; and lastly, memorizing the list.

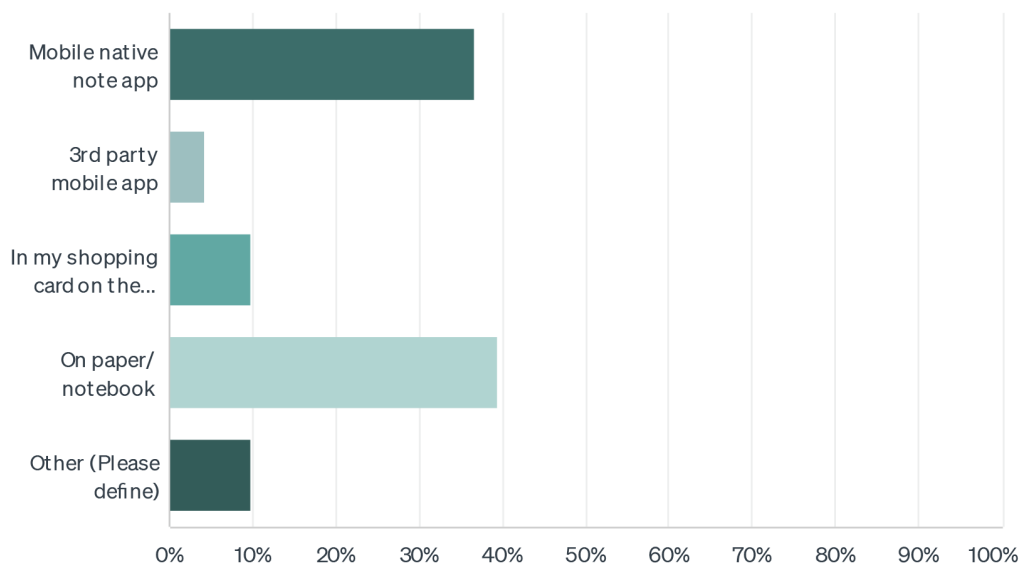


Figure 4.4 Environment preferences of participants for preparing a grocery shopping list

#### **4.2.2 Online Grocery Shopping**

In this section, the participants were asked eight questions (Question 7 to 14) about their online grocery shopping habits and preferences. This section also contained questions related to the context of the Covid-19 pandemic.

***Q7. Please check, if there are new products of groceries that you have started to buy online with the Covid-19 pandemic.*** Participants were asked to tick off all grocery products they started to shop online with the Covid-19 pandemic breakout from a list of twelve grocery items which were gathered from the review of online grocery platforms. Results are presented in Figure 4.5.

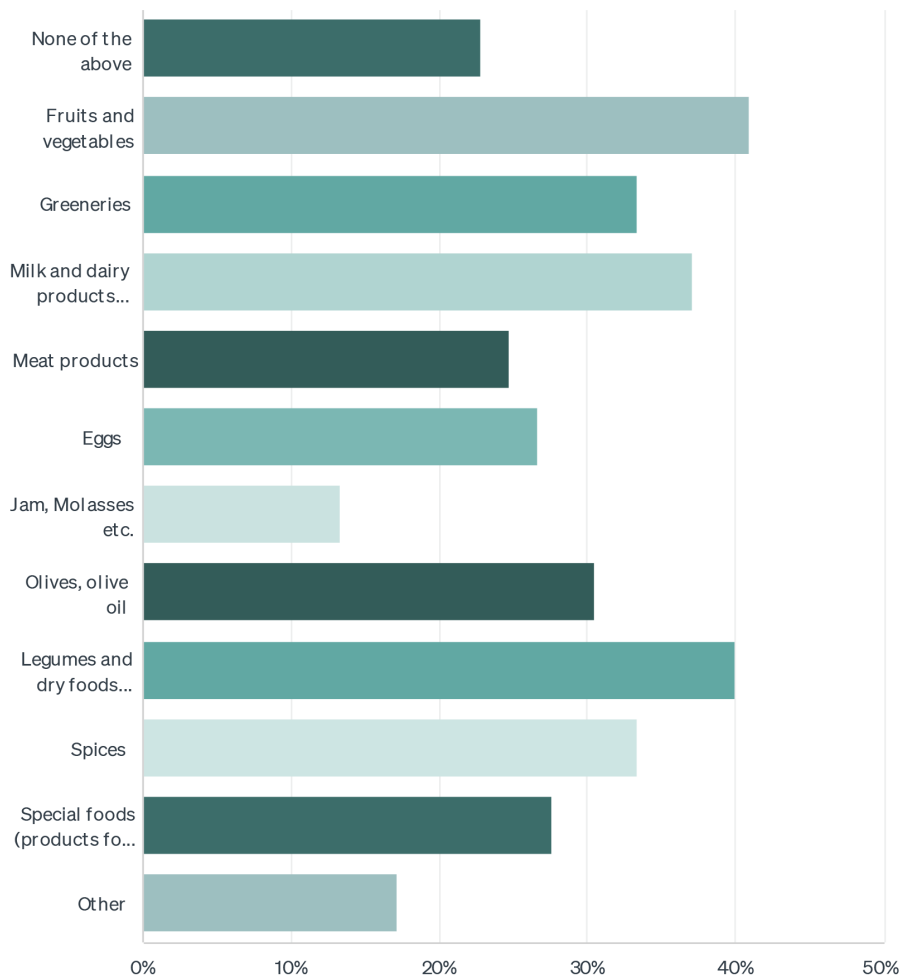


Figure 4.5 List of new grocery products that participants have started to buy online with the Covid-19 pandemic

According to the answers to this question, fruits & vegetables were marked by 40% (43) followed by legumes & dry foods (pasta, rice, tarhana, etc.) that marked by 40% (42) of participants, showing these two grocery product groups are the most popular emerging online grocery products at the Covid-19 pandemic. In contrast, jam & molasses were marked by 13% (14) participants and resulted as the least popular grocery products. Also, 22% (24) of the participants indicated that none of these grocery products are newly started shopping items for them.

***Q8. Which of the following grocery products do you prefer not to shop online?***

Each grocery product participants prefer not to shop online are presented in Figure 4.6. Fruits & vegetables were marked by 45% (47) of participants, greeneries were



marked by 48% (51) of the participants and meat products were marked by 46% (49) of participants, and these grocery products resulted as the least popular shopping items participants shop via online platforms whereas spices and special foods were marked by 9% (9) of the participants as ‘more preferable’ than the others.

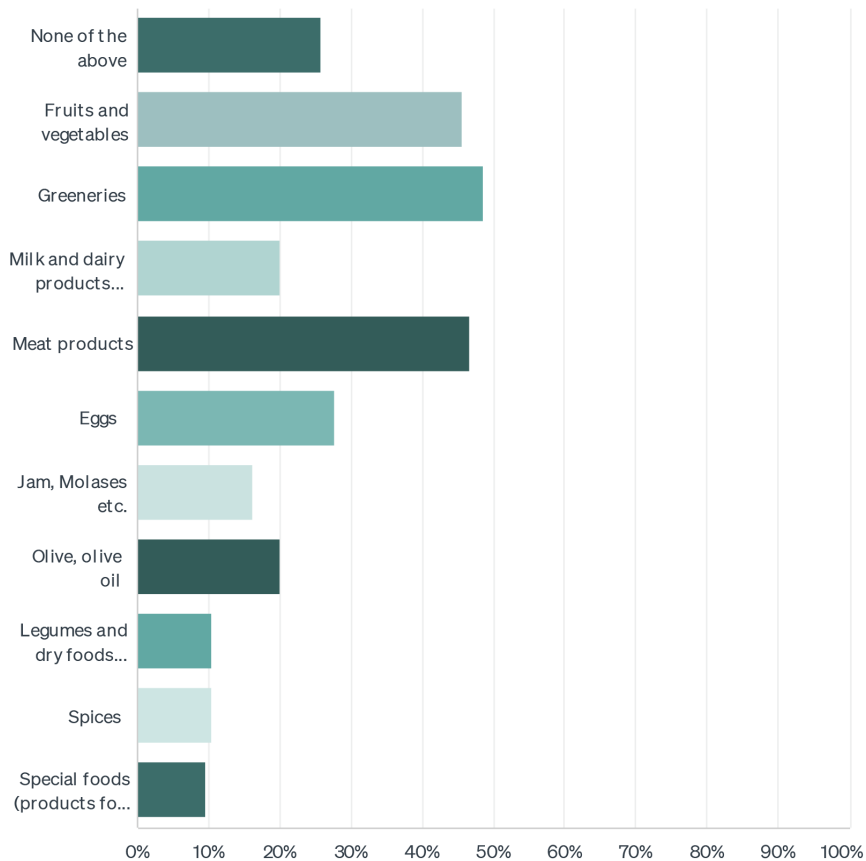


Figure 4.6 Grocery product preferences of participants for not to shop online

It can be seen from the answers to Questions 6 and 7 that, shopping online for fruits and vegetables are coming forward. Since almost half of the participants preferred not to shop for fruits and vegetables online and a near number of participants newly started to shop online for these grocery products, it is highlighted by the researcher to focus on and learn the underlying reasons of participants at Phase 3 – Interview sessions. Moreover, it is observed that the same situation with the fruits and vegetables are valid for greeneries as well. 33% (35) of participants started online

shopping for greeneries after the Covid-19 pandemic, and almost half of the participants still did not shop online for these products.

***Q9. Please rank the following channels, which offer grocery shopping online.***

Participants were asked to rank channels they shop for groceries online on a scale from 4 to 1, 4 indicating the most preferred channel while 1 the least. Results are shown in Figure 4.7. 61.9% (65) of the participants ranked mobile applications with 4, as the most preferred channel for online grocery shopping. The second most preferred channel -the channel ranked with 3 on average- is web sites with 53% (56) percent, followed by social media accounts (Instagram, Facebook etc.) with 37% (39) as the third most preferred channel and lastly, WhatsApp is the least preferred channel for online grocery shopping by participants with 40% (95) percent.

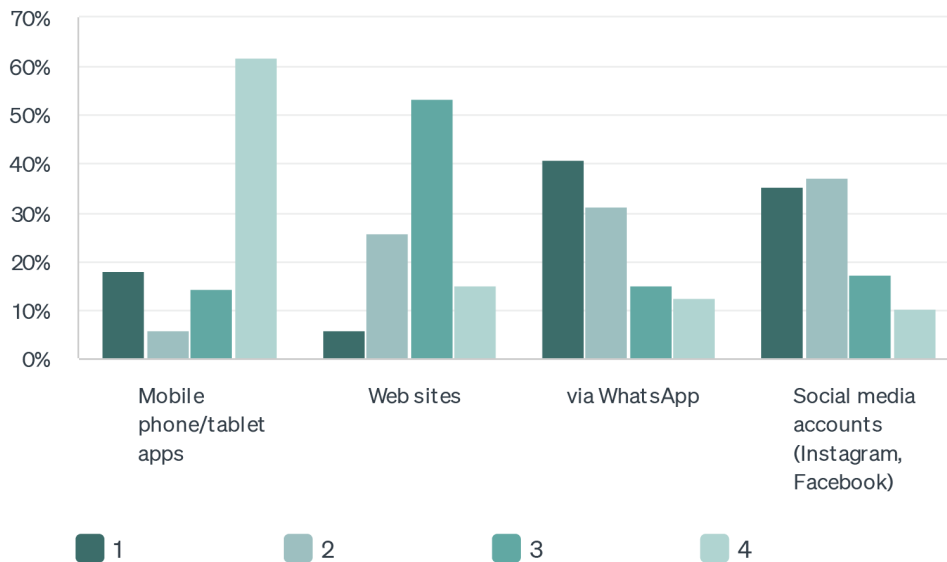


Figure 4.7 Ranking of the channels, which offer grocery shopping online

Since participants ranked all the channels, results allow the researcher to sort participants’ answers both positively and negatively. For example, since 1 is the lowest point and websites got the lowest percentage (5%) of 1 point, it is understood that websites are not only second most preferred online grocery shopping channel, but also has least negative attitude from participants. This data allows the researcher

to articulate tendencies of participants towards channels both from a positive and negative perspective.

**Q10. Which of the following statements best represents your approach to online grocery shopping?** Participants were asked whether they prefer to complete their online grocery shopping through a single platform as much as possible or have different platforms for specific grocery products, such as shopping greeneries always from Platform A. While 42% (45) of the participants prefer a single platform for their online grocery shopping, 57% (60) of them prefer to shop online from multiple platforms. Results are presented in Figure 4.8.

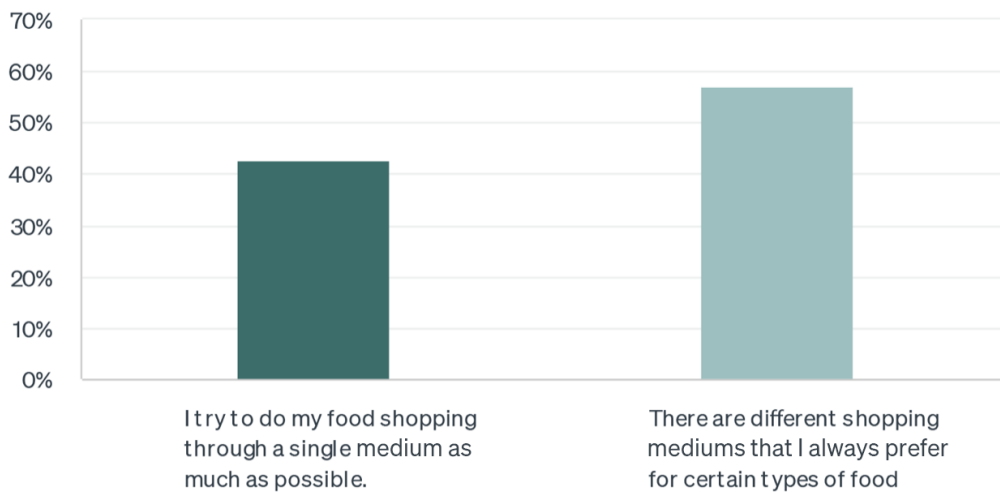


Figure 4.8 Best representation of participants' approach to online grocery shopping  
Since the percentage of participants prefer multi platforms for online grocery shopping is only 15% higher than single platform preferring participants, both habits preserve their significance for this study.

**Q11. When shopping for grocery online, please check the criteria that affect your choices.** Results are presented on Figure 4.9. According to these results, brand familiarity is the most popular criterion for participants and the second most popular one is platform familiarity.

‘Shopping from local manufacturer’ is the least popular answer as a decision criterion for participants, followed by ‘having different options for the same product’ as second least preferred answer.

With these results, it appears that, for example, having Brand A milk on any online shopping platform is preferred more than having any milk brand in Brand X online shopping platform by participants. Also, familiarity for both products and platforms are sought by participants more than localness of product or product variety that platforms offer. With these examples in mind, however, all criteria were selected by at least 23% of the participants, which is a percent not to be underestimated.

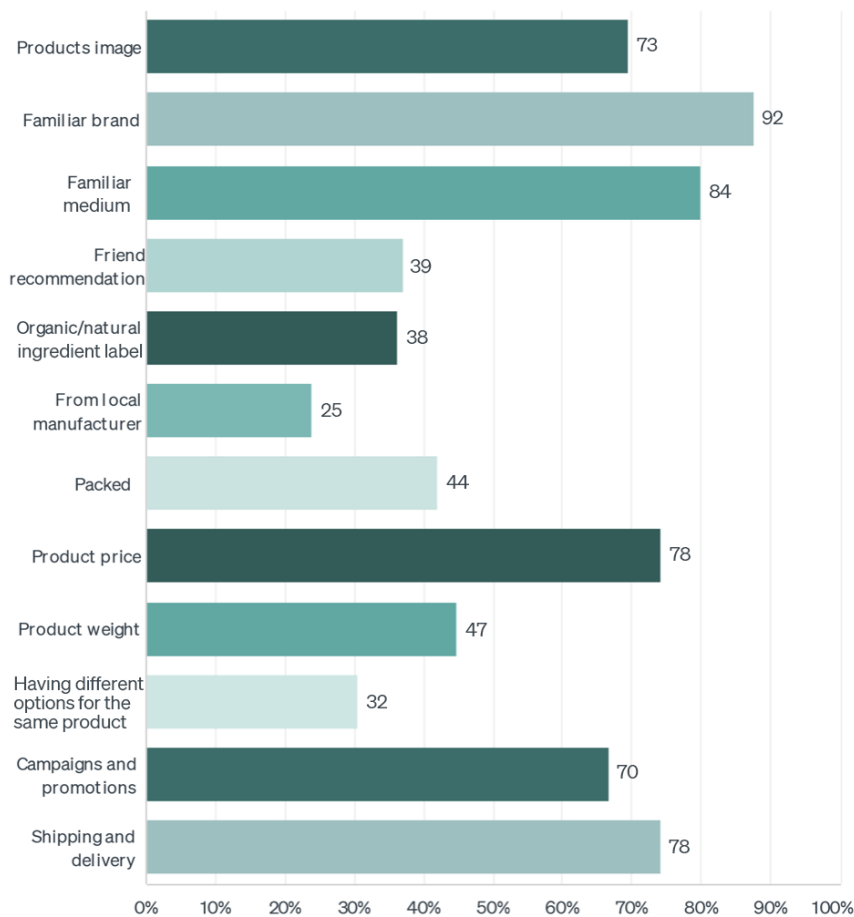


Figure 4.9 Participants' criteria for shopping online for groceries

**Q12. To use for your online grocery purchases, rank the following payment methods from 1 to 4.** Results of payment preferences of participants while shopping online for groceries are presented in Figure 4.10. According to results, the most preferred payment method is ‘online payment with credit card’ by 72% (76) of participants. Second most popular payment method is ‘at door payment with credit card’ preferred by 55% (58), ‘cash at the door’ by 46% (49) and lastly, ‘Transfer/EFT’ by 53% (56) of the participants.

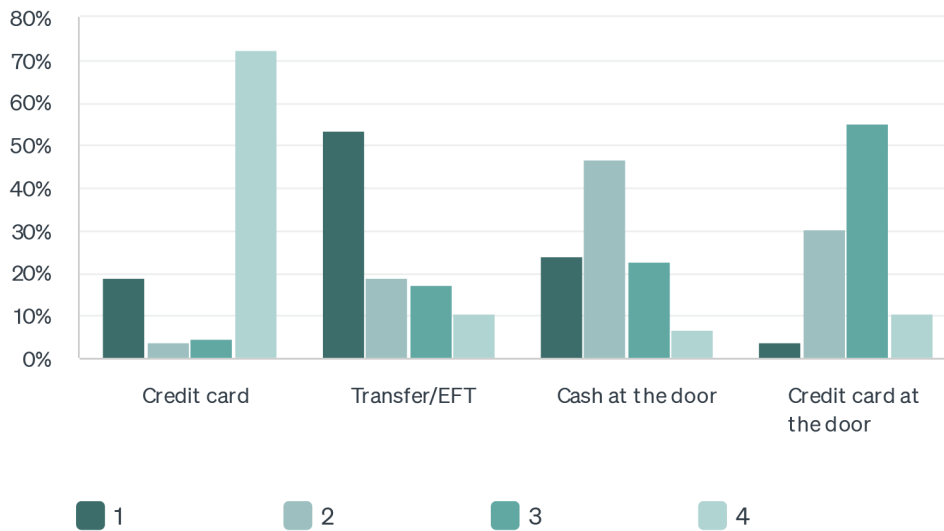


Figure 4.10 Participants’ ranking of the payment methods

**Q13. Would you like to know and follow the delivery processes of the groceries you buy online until they reach you?** Processes are defined as packaging, loading on the delivery vehicle, local/extra-city roaming, etc. Results are presented in Figure 4.11. 92% (97) of the participants preferred to have information and 7% (8) preferred not.

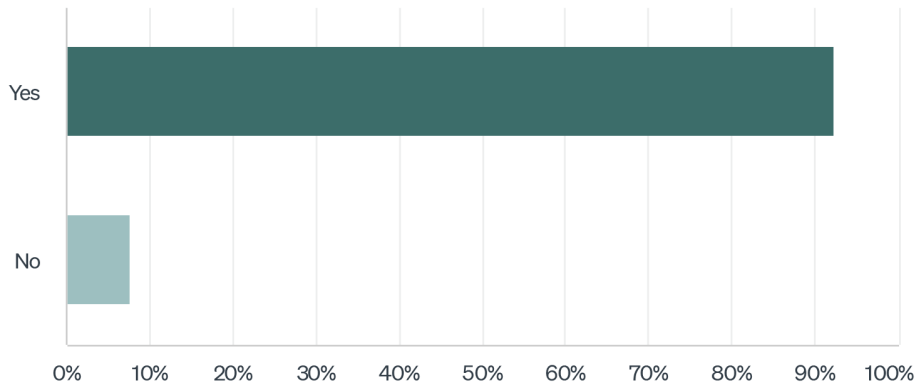


Figure 4.11 Preferences to know and follow the delivery processes of the grocery participants buy online

***Q14. Has the pandemic affected your interest in the packaging of groceries in a way that prevents any contact, the suitability of the packaging material for groceries, etc.?.*** 40% (42) of the participants showed their interest while 60% (63) of participants were not interested in. Results are shown in Figure 4.12.

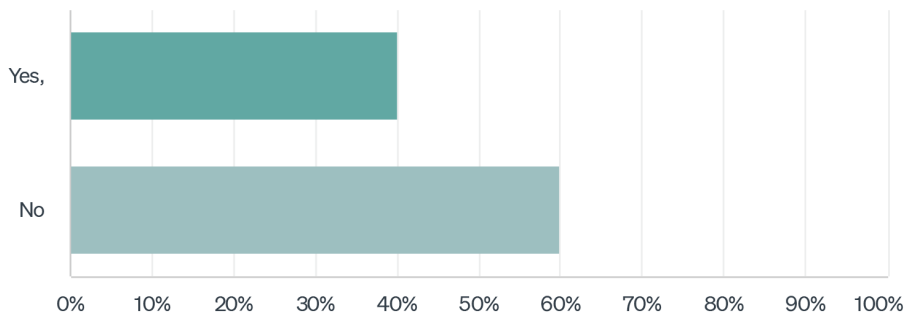


Figure 4.12 Covid-19 pandemic effect on participants' criteria for packaging of groceries

Also, the participants were asked to describe their interest if they answered Question 13 as ‘yes’. Some of the answers highlighted by the researcher are presented as follows:

*‘Even if I shop from a brick and mortar store, I prefer packaged groceries as much as possible.’*

*'I am more sensitive about hygiene.'*

*'Products which packaged at production zone seems more reliable.'*

*'If a product is packaged in more than one layer, I got convinced that workers use gloves while packaging and sorting products.'*

Finally, a non-mandatory question was asked to participants as the last question of the online survey.

***Q15. Do you have any suggestions for online grocery shopping platforms in consideration of the Covid-19 pandemic.*** This question was an open-ended question for participants to mention any concerns, expectations, or suggestions towards online grocery shopping with the context of Covid-19. Some of the answers are presented below:

*'If there were a service to decrease the usage of plastic bags and packages, that would be a reason for preferring a related platform.'*

*'User comments for products would be a good idea.'*

*'Weight options for products.'*

*'I would like to buy medicine from online grocery shops too.'*

All answers for both questions 14 and 15 were collected and the repeated/duplicate answers between participants were eliminated. After Stage 3, interview sessions were completed; codes gathered from interview results were checked whether they already contained the same themes or not. Since interview results already had these themes, answers to question 14 were directed to the convergence of results.

### **4.3 Results and Analysis of Stage 3 – Interview Sessions**

In the interview sessions, which is the third stage of the fieldwork, four complementary methods were employed for data collection. As explained in Chapter 3, these were: technology readiness index 2.0, an online questionnaire, and semi-

structured interviews with the integration of think aloud protocol, and customer journey map. As the fieldwork was carried out during the Covid-19 pandemic period, online video conferencing platform Zoom was used. Interview sessions, were carried out with 8 participants volunteered to take part. They were all over 18 years old, and were living in various cities. There was also variation among the participants' gender, occupation, and household number distribution. Detailed information of participants are given in Table 4.1.

<b>Participant number</b>	<b>Gender</b>	<b>Working situation</b>	<b>Household number</b>	<b>Living environment</b>
P01	Female	Full-time	1	Town center
P02	Female	Full-time	1	Town center
P03	Female	Full-time	1	New settlement
P04	Male	Full-time	3	Town center
P05	Female	Full-time	3	Town center
P06	Female	Full-time	2	Town center
P07	Female	Full-time	3	New settlement
P08	Male	Full-time	2	Town center

Table 4.1 Sociodemographic information of participants

### 4.3.1 Technology Readiness Index 2.0

Technology Readiness Index (TRI) 2.0, developed by Parasuraman & Colby (2015), reveals the relationship of users with technology and is defined by four dimensions consisting of four questions: optimism, innovativeness, discomfort, and insecurity.



For answers to each question, a 5-point Likert scale was used to indicate agreement with the statements as 5 is the highest, 1 is the lowest, and 3 is neutral.

While *optimism* and *innovativeness* are described as positive dimensions of TRI 2.0, *discomfort* and *insecurity* are considered as negative dimensions for users to take on technology. Therefore, negative dimensions' scores are inversed and the total average score is calculated using the formula shown in Figure 4.13, as defined by Parasuraman and Colby (2015).

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

Figure 4.13 Calculation formula of total TRI scores

The average TRI scores of the participants were calculated as 3.59. This data shows that participants' approaches towards technology were positive. In detail, the average score of the participants for each dimension of TRI 2.0 is as follows: average optimism score is 4.18, innovativeness is 3.4, discomfort is 3.6 and insecurity is 2.9. While calculating the average score for discomfort and insecurity dimensions, the inversed calculation defined above was used for these dimensions. Since the value of discomfort is calculated as 3.6 and is above the neutral value (3), indicates that the participants feel comfortable about technology. With the same approach, when the insecurity dimension with an average value of 2.9 is considered, it is understood that the participants felt slightly insecure towards technology. Also, result for each participant can be seen in Table 4.2.

	Opt	Inn	Disc (Inversed)	Ins (Inversed)	Overall TRI Score
P01	3.75	2.5	3.75	2.75	3.18
P02	5	3	4.25	3.75	4
P03	4.5	4	3.5	3.25	3.81
P04	4.25	4	2.75	2	3.25
P05	3.75	3.5	3.25	2.75	3.31
P06	4.25	2.75	3.75	3.25	3.5
P07	3.75	3.5	3.75	3.5	3.62
P08	4.25	4	4.25	2.5	3.75

Table 4.2 Results of each participants TRI score

In conclusion, according to the results of the TRI 2.0 online questionnaire, the participants were optimistic and enthusiastic about technology and felt comfortable while using technology. However, the participants felt insecure about being too much dependent on technology.

#### 4.3.2 Semi-structured Interviews

After participants completed TRI 2.0 online questionnaire, online video conferences were conducted via the Zoom platform. Following the procedure described in Chapter 3, in the later phase of the interviews, which started as a question-and-answer verbally, the participants were asked to simulate a routine online grocery shopping experience of theirs on the platform they use most frequently by sharing the screen. Then, the interview sessions continued with questions and answers about the post-shopping phases. Finally, the results that emerged during the entire interview were written by the researcher on the customer journey maps prepared in

Miro, with the participants' own expressions. Screenshot of one of the participant's customer journey map is presented in Figure 4.14.



Figure 4.14 A screenshot from a participant's customer journey map during an interview session

A total of 8 hours and 49 minutes of recordings were taken during the interview sessions. These recordings were transcribed verbatim by the researcher. A separate sheet was created for each of the participants in Microsoft Excel. The information was organised in the same flow of the interviews. Afterwards, following the thematic analysis method; sub-theme and theme columns were created with also insights column next to the each participants' entry column. After entering each statement of the participants in a separate sheet in the same Microsoft Excel document, sub-themes emerged from these statements were written in the sub-themes column next to each participant's statements column. Also, insights included the researcher's notes about the participant entry in the relevant row. These notes were used for purposes such as reflecting the context of the subject to ease the process to define sub-themes. Finally, more general and comprehensive keywords were obtained by examining the sub-themes in cycles with the help of insights column.

Then, a new sheet was created for collecting each sub-theme gathered from different participants. At this sheet, sub-themes were analyzed together in cycles until there were no repetition among sub-themes. Following, these sub-themes were grouped into themes according to their relevance. The data gathered in that sheet constituted the first draft themes and sub-themes that are the analysis output of the interview phase. Following, each theme and sub-theme were cross-checked in cycles until participants statements, sub-themes gathered from this statements and themes

gathered from relevant sub-themes were in accordance with each other. The themes gathered from interview sessions with their sub-themes are shown in Figure 4.15 and 4.16.



Figure 4.15 List of themes resulted from the interview analysis



Figure 4.16 List of themes resulted from the interview analysis (continued)

After constructing the themes and sub-themes, user experience phases of an online grocery shopping were created as headings in a Miro-Board and each sub-theme was placed under the related heading. User experience phases of an online grocery shopping were defined as the same with customer journey map. These phases and what they represented are as follow:

1. Awareness – *deciding on grocery shopping environment*
2. Consideration – *deciding on online grocery shopping platform*
3. Decision – *actualization of online grocery shopping*
4. Delivery & Use – *receiving, using, problem solving*
5. Loyalty & Advocacy – *behavior developing towards online grocery shopping*

While creating the Miro-Board, for preserving the relationship between themes and sub-themes, color-coding was used. If a sub-theme was related with more than one grocery shopping phase, that sub-theme was copied and put under both phases. Later, sub-themes were separated according to contexts of general online grocery shopping and Covid-19 pandemic. Finally, factors of each grocery shopping phase were revealed. A screenshot of the Miro-Board presenting distributed sub-themes under grocery shopping phases can be seen in Figure 4.17.

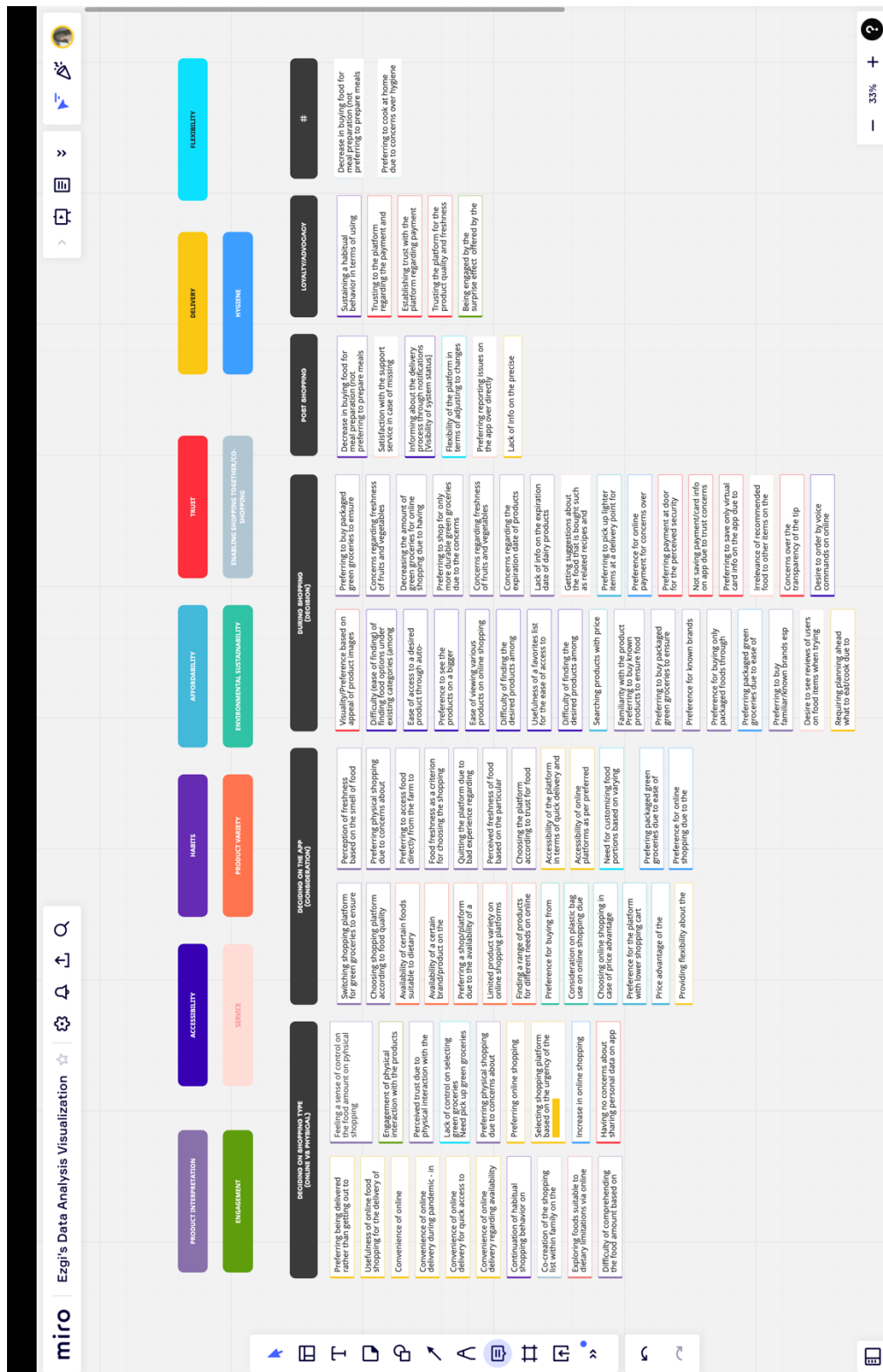


Figure 4.17 A screenshot from the Miro-Board presenting distributed sub-themes under grocery shopping phases



#### **4.3.2.1 Awareness**

This section explains the factors that influence participants' decisions about whether to shop online or in-store for their grocery needs. These factors stand out as 'convenience', 'habits', 'co-shopping', 'engagement', 'product variety', 'flexibility', 'product interpretation', 'trust', and 'hygiene' which can be seen in Figure 4.18. Each factor is discussed together with the sub-themes that led to the emergence of this factor. In the following section, these factors are explained under separate headings in terms of general and Covid-19 pandemic contexts.

## AWARENESS

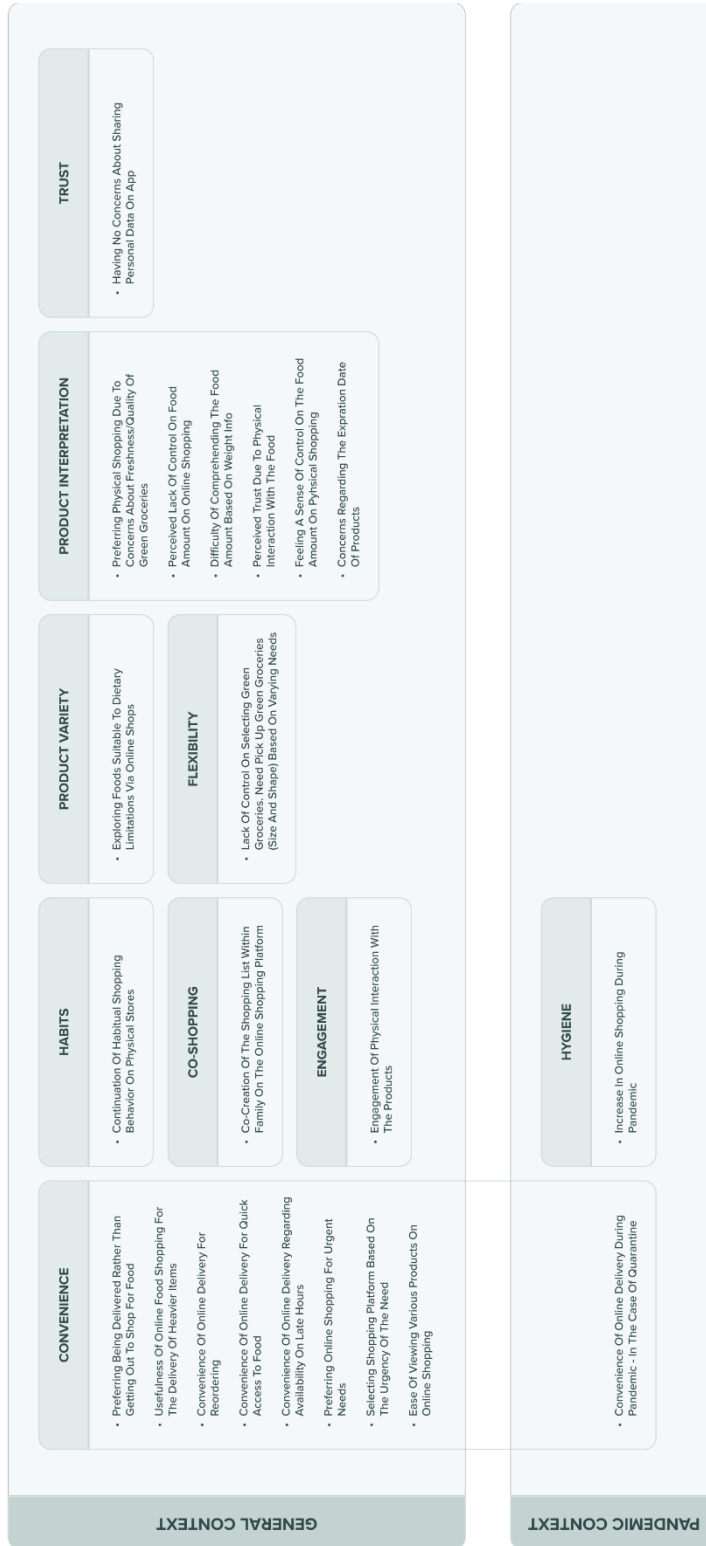


Figure 4.18 Factors related awareness phase

*i) Convenience*

In the interviews, it was observed that one of the major factors affecting participants' decision-making to shop online rather than in the physical store; was the convenience of online grocery shopping and the delivery. The participants decided to shop online as they preferred the grocery delivery to home, at the comfort of their homes rather than going out to shop for food. Moreover, they found online shopping useful, especially for the delivery of heavier items such as water gallons. Some participants stated that online grocery shopping was quite helpful, because it was easy to create new orders for the products they forget to order, without going back to the store. However, one participant expressed that when she needed to order for a product that she forgot, she chooses a different shopping platform rather than the same one, as she has concerns over having the same courier do extra work.

Another reason for preference over online grocery shopping is that it enables quick access to food, even in 5 minutes, with fast delivery options on some platforms. This aspect of online grocery shopping becomes useful, especially in the case of urgent needs or when one is not in the mood for going out, as stated by participants. Relatedly, it is found that participants sometimes turn to online grocery shopping as it is the only available option for access to food at late hours.

Lastly, during the conditions under the COVID-19 pandemic, online grocery shopping is highlighted as the most convenient option for access to food, reducing the risk of being infected. It sometimes becomes the only option - a must - for grocery shopping for people in quarantine. Some participants even stated that they used online grocery shopping platforms for the first time during the quarantine and continued to do so after loosening of the restrictions because they got used to shopping online. Based on the insights gained through the interviews, it can be concluded that the pandemic has a long-lasting impact on people's shopping behavior for groceries.

*ii) Habits*

Besides the stated advantages of online grocery shopping, another reason behind why some participants still did not prefer it was that the desire to continue their habitual shopping behavior in physical stores. For example, some participants expressed that they were used to shopping for food in the physical stores they did not even consider the possibility of an online grocery shopping option for themselves. A participant stated that she often uses a mobile application, famous for its food delivery service in Turkey, and added a grocery shopping service to its operations after the COVID-19 pandemic. However, participant is still not used to the platform's newly added grocery shopping service; thus, uses it only for ordering food from restaurants.

**iii) *Co-shopping***

Another finding related to the use of online grocery shopping apps was that they allow the co-creation of the shopping list within the family. For example, a participant stated that she uses/logs into the same account with her husband on a grocery shopping app to create a shopping list by adding the desired products separately to the shopping cart. By doing so, they could easily form a shopping list together on the same app and make orders after finalizing the list.

**iv) *Engagement***

The importance of physical interaction with the products in brick-and-mortar stores was mentioned by multiple participants. They expressed their preference over shopping in physical stores because they wanted to engage physically with the actual products. For example, holding the product in hand and reading the ingredients list, selecting green groceries one by one manually, or coming across a new product spontaneously while wandering in the store were the aspects of physical shopping and possibly the reasons of its appeal for some of the participants.

**v) *Product variety***

Despite the appeal of grocery shopping in physical stores, one of the limitations experienced by some participants was the lack of variety in specific product categories. Some participants mentioned that the nearby physical stores often did not

offer food options suitable to varying dietary restrictions. Thus, for finding the desired product, they either searched for a store offering it, which in some cases were not possible to visit due to the distance or could not find the specific product at all in any of the physical stores. Thus, some participants had to use online grocery shopping apps to access the product options suitable to certain dietary restrictions (vegan/vegetarian, gluten-free, etc.). Some online platforms presented more variety in such products, and some had even specific categories, which enabled an easy access.

**vi) Flexibility**

Another downside of online grocery shopping was found to be the lack of control over selecting products, especially green groceries. As mentioned by some participants, they sometimes wanted to choose the green groceries according to their varying needs (e.g., size and shape). One of the participants noted that when cooking stuffed peppers, it was important to pick the desirable size (i.e., neither too big nor too small) for that specific dish. Besides, the portion control options were limited on online grocery shopping, especially for green groceries. Some platforms did not offer varied enough options for fruits and vegetables, making it inconvenient for the participants who needed smaller portions. Thus, as a disadvantage of online grocery shopping, it sometimes eliminates users' control over choosing fruits and vegetables, in terms of amount, shape, and size, according to their needs and preferences.

**vii) Product interpretation**

When asked about the advantages and disadvantages of online grocery shopping, another aspect mentioned by the participants was having the sense of control over food amount on physical shopping compared to shopping online. For example, shopping in a more controlled manner regarding the number of products to buy in physical stores and to comprehend the actual/physical amount of the purchase. Whereas in online shopping, the participants mentioned that they often buy more than necessary and do not realize the actual amount until the delivery arrives. Besides, some participants noted that it was difficult to comprehend the food amount based

on the weight information shown on the product page offered in on grocery shopping apps as it was much easier when seeing it in the store.

Most participants commented that they trusted the products they buy in physical stores more than that of they purchased online because they could select the products themselves by examining them physically. Relatedly, some participants stated their preference for physical shopping due to their concerns specifically about green groceries' freshness and quality. Participants repeatedly mentioned that they could be sure that their purchases were fresh and of good quality when they selected themselves in a physical store, whereas they lose this sense of control on online shopping.

Lastly, the participants explained that having an expiration date information of perishable products at brick-and-mortar stores and not having this information at grocery shopping apps was one of the key factors that affected their decision on whether to shop online or not.

#### **viii) *Trust***

Some participants stated that they have no concerns about sharing personal data on online grocery shopping platforms, as they already shared their information on other platforms, such as from banking to online retail apps. Notifications that they received from their bank in case of any issues with payment, etc., helped reducing their concerns over sharing personal information. Therefore, when deciding whether to shop online or physically during the awareness phase, sharing personal data on grocery shopping app did not appear as a concern or a limitation for the participants.

#### **ix) *Hygiene***

Lastly, most participants stated a significant increase in their frequency of online shopping during the COVID-19 pandemic due to their concerns over hygiene and shopping in the physical stores in close contact with people. Thus, participants stated that they were less willing to shop in physical stores and had to opt for online grocery shopping, especially when the COVID-19 was spreading at an increasing rate.

## **Reflection on Awareness**

In this section, the factors affecting the 'awareness', which is defined as the first stage of the participants' online grocery shopping experiences, are evaluated together with the insights of the researcher.

While the participants were talking about the reasons for preferring online grocery shopping, they mentioned that they could meet their grocery needs without getting out of the house and without getting tired. In addition, the possibility of using the time to be allocated for in-store shopping differently makes online grocery shopping attractive.

Some online grocery shopping apps call the users before leaving their facilities to enable users to add the grocery products they forget while users create their order. Thus, it is not necessary to spend extra time and effort to procure a forgotten product. At the same time, the reasons for preferring online grocery shopping were explained to the participants to be able to reach the products quickly and without leaving the house for urgent needs. In addition, the availability of products that are not available in some brick-and-mortar stores in different online grocery stores provides convenience for users with special nutritional preferences.

Participants who took on the task of grocery shopping together explained that they preferred online grocery shopping to the in-store experience because they could create and order shopping carts together at different times and places by using the same user account on their own devices. Finally, especially during the full closure of the Covid-19 pandemic, one of the participants stated that for their elderly relatives, who have difficulty in using online media, she registers their addresses in the online grocery shopping platform to meet their grocery needs and create orders regularly.

Participants have negative experiences with the freshness and quality of the products they ordered. These experiences cause users not to prefer online grocery shopping, especially when they have greengrocery needs, and create prejudices in this regard. In addition, the size and shape of the products cannot be known by the participants

while shopping for groceries thorough apps. Since the products ordered for meals where the size and shape of the product are important, such as dolma, are not suitable for their purpose. Therefore, participants do not prefer online grocery shopping for such needs. With these findings, lack of visual cues and touch feeling about products in grocery shopping apps comes in view as a pain point. Moreover, amount of the products is also hard to imagine for participants. One of the participants explained that when ordering fruits and vegetables, weight information given for bananas were not helping to understand the number of the related product. Also, amount of total shopping cart is unpredictable for participants. They said that they were surprised when they see the amount of delivery, and one of the participants explain she bought more than she wanted due to the lack of the sense about amount of grocery product in grocery shopping apps. Thus, second pain point of awareness phase got formed.

#### **4.3.2.2 Consideration**

In this section, participants' experience of decision making between online grocery shopping platforms are explained. Factors effecting consideration phase are identified as follows: product interpretation, product variety, environmental sustainability, affordability, convenience, flexibility and, hygiene which can be seen in Figure 4.19. Information about each factor is given below.



## CONSIDERATION

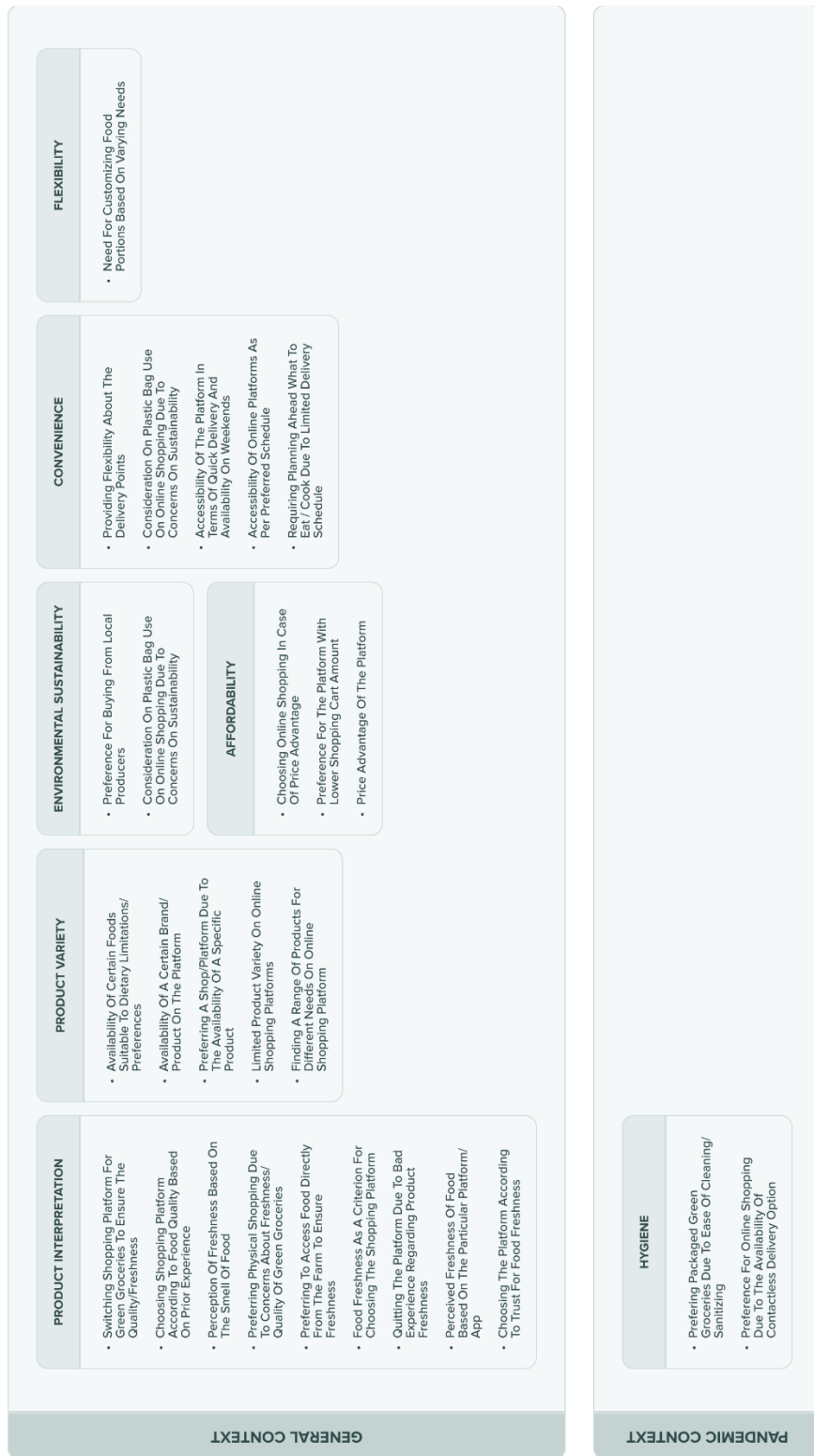


Figure 4.19 Factors related consideration phase

***i) Product interpretation***

In the interview with the participants, it can be clearly seen that the freshness of green groceries is the main issue that the participants take seriously. Some of the participants stated that they prefer to buy directly from the farm or shop physically due to their concerns about freshness of groceries. Also, smell of the food is highlighted by a participant to understand whether the product is fresh or not.

Many of the participants mentioned that the freshness of the green groceries has a great effect while deciding on which shopping platform they are going to use. Further, participants stated that they switch between grocery shopping applications according to freshness of the food. For example, a participant stated that for ordering strawberries, he is always using the same grocery shopping app since he has no unsatisfied earlier experience. Also, same participant uses another online grocery shopping app for breads due to its freshness.

Despite the fact the participants stated that they chose a shopping platform based on their prior experiences about the freshness of the green groceries, it is also observed that they quit the platform immediately if they had an unfortunate experience due to the freshness of the green groceries.

Additionally, some of the participants explained that they are ordering fruits and vegetables from an online grocery shopping app which also has brick-and-mortar stores which they know the delivery day of the week to this store.

***ii) Product variety***

Whether it is for personal preferences or dietary limitations, the availability of certain grocery products or brands affects participants' decision of online grocery shopping platform which they're going to use. Some of the participants also stated that they use certain platforms due to the availability of a certain grocery product on that platform. For example, a participant told the favorite snack of hers is available only in one grocery shopping app. Thus, she is ordering from this app and to reach the minimum shopping cart amount, she is also ordering some non-perishable products.

Participants also mentioned that online shopping platforms which has no brick-and-mortar stores are insufficient due to the lack of varied grocery product options. To sum up, as general opinion, participants preferred to see different options for a specific product type (different brands for milk, different types of peppers etc.) on a platform while they are shopping for their varied needs.

**iii) *Environmental sustainability***

According to some participant statements, they tend to use platforms that they can shop from local producers for their sensitivity towards environmental sustainability. Besides, the use of plastic bags is not considered appropriate in this manner. As a solution, the use of cloth bags in some applications does not take precedence over the environmental concerns of the participant at the end of the day since the cloth bags pile up in time.

**iv) *Affordability***

Affordability is another factor affecting decision of participants for deciding on grocery shopping apps. They explained that if a grocery shopping app has an advantage in prices, they will choose it over other platforms. Also, required minimum amount for delivery is leading participants to the related app since in some cases, needed product amount is not as much as other apps required to.

**v) *Convenience***

According to participants statements, one of the aspects that affect their preferences between online grocery shopping applications is flexibility about delivery points. One of the participants stated that she had been called by the customer service of the platform she shopped from and asked about her preferences about delivery point in case of she is not home at delivery time. Also, participants explained that availability of the platform in terms of quick delivery and availability on weekends are affecting their decision among online grocery shopping platforms. In detail, during the lockdowns due to Covid-19 restrictions, brick-and-mortar stores and their online shopping apps were out of service whereas independent shopping app services were

open. Another view of convenience is the availability of online platforms as per preferred schedule. For example, a participant told that in times when an urgent need occurs while cooking for a meal, he decided on the online grocery shopping app according to its delivery time.

Lastly, participants choose the app according to their plan to cook for that day or week. A participant explained that if she orders from the app which has specific delivery boxes for each week, she doesn't have to plan what she's going to cook that week since grocery items are already narrowing the options down.

**vi) Flexibility**

In contrast physical shopping, insufficient flexibility for customizing the portion of grocery products based on the participants' varying needs affects participants' decisions inevitably. A participant explained that she orders fruits and vegetables from the platform which allows her to order products in numbers or manually entered weight value.

**vii) Hygiene**

In the context of Covid-19, participants preferences on grocery shopping apps are affected by the packaging of the products due to ease of cleaning/sanitizing. If a product is packaged in a way that it may expose the sanitizers, then participants get concerned about the hygiene or healthiness of the product. Moreover, availability of contactless delivery option is a feature which participants are looking for during pandemic circumstances.

**Reflection on Consideration**

This section explains the factors that affect participants' consideration phase while selecting the online grocery shopping app they are going to use along with the researcher's observations.

It is observed by the researcher that each participant creates a routine for online grocery shopping. For a participant who does grocery shopping on a weekly basis,

the need for customizing product amounts and the need for products to be fresh for a week come to the fore. As the participants who prefer brick-and-mortar stores for weekly grocery shopping, to meet their unplanned needs from grocery shopping apps, it is understood that fast delivery and low cart amount features are decision-makers.

Other than the grocery shopping routines of the participants, their lifestyles also affect the convenience phase. For example, especially in the Covid 19 period, grocery shopping apps in which products are sent in closed packages and can be easily cleaned are preferred by some participants. Contrarily, some other participants do not prefer these apps because of the waste generated by packaging materials. Therefore, different grocery shopping apps stand out for participants with different concerns.

Apart from the differences between the participants while choosing the grocery shopping app, participants' choices also differ from their own. Participants can routinely choose different grocery shopping apps for their particular needs. For example, while a participant prefers the grocery shopping app which has a price advantage for his weekly shopping, the same participant may choose another grocery shopping app that he finds expensive due to its better quality for certain products.

According to these findings, it can be said that participants' approach toward the considerations phase varies according to the scenario they are in. These scenarios may create more than one shopping behavior for each participant and may lead to the emergence of preferences that seem contradictory in themselves. Participants can create different routines and shift between more than one grocery shopping app in order to meet their different grocery shopping needs.

#### **4.3.2.3 Decision Phase**

Decision phase consists of during shopping steps, beginning with entering the app until completing the order. Factors affecting experience of decision phase are

explained in detail, which are identified as the following: product interpretation, accessibility, affordability, trust, service, and hygiene. Factors related with the decision phase can be seen in Figure 4.20. Hygiene factor is the only factor of decision phase that is specific to pandemic context.

## DECISION

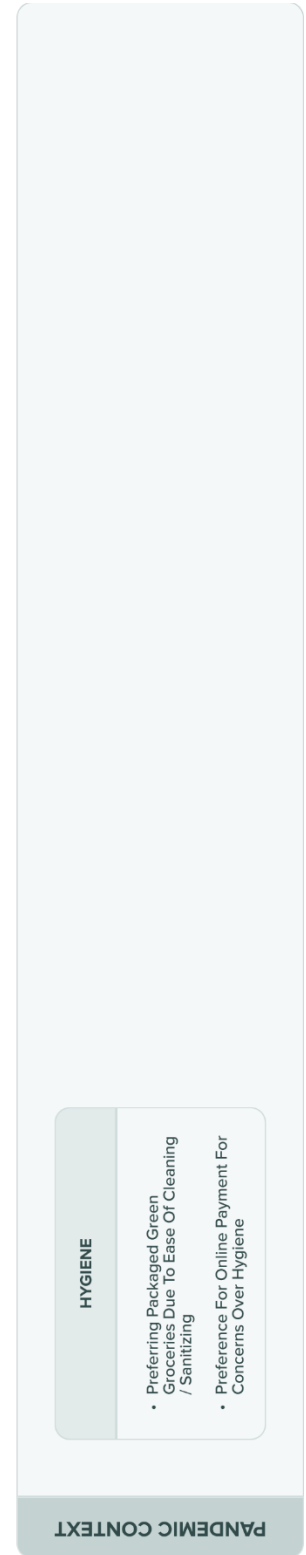
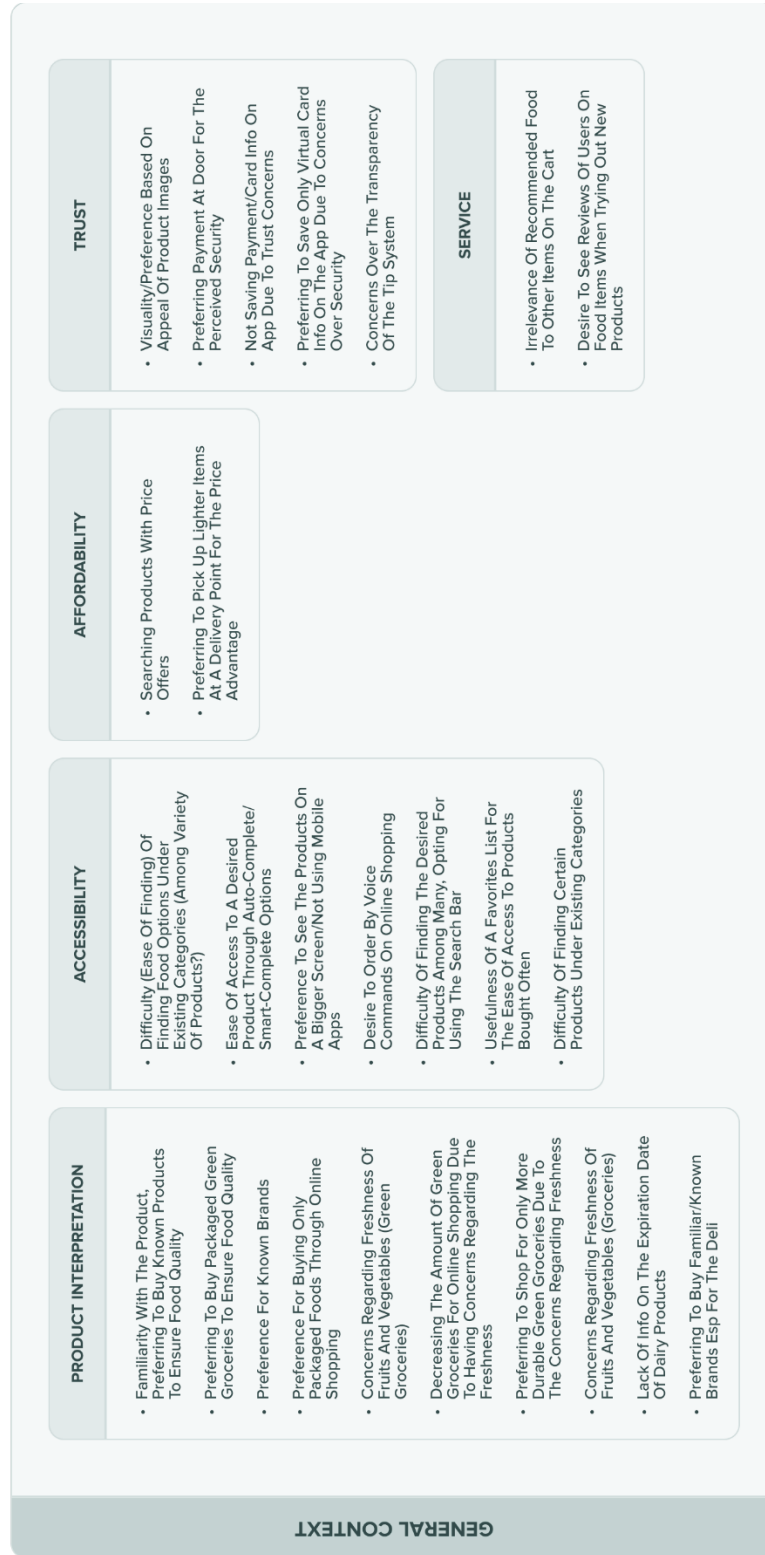


Figure 4.20 Factors related decision phase

**i) Product Interpretation**

Product interpretation is the most mentioned factor that affects participants decision phase while using grocery shopping apps. All the participants stated that they prefer products whose brands they know when purchasing packaged products. One of the participants explained as a family, they have a favorite brand for each product, such as the brand “İçim” for mild cream cheese and “Bahçıvan” for ezine cheese, and they always stick to this routine. Other than this, some of the participants explained they are open for trying new brands according to food safety. For example, if there is a new brand for pasta, they are not hesitant to try. However, if there is a new chicken brand on the app, they will not try it.

*“If there is a possibility to die because of the product, I will not try it.” (P08)*

*“If it is not something to poisoned from, I can try it. If I don’t like it, I won’t buy it again. It’s that simple.” (P01)*

Also, one of the participants mentioned he may be more open to new brands if he is shopping from a brick-and-mortar store since he can evaluate the product by its visuals and investigate information on its packaging.

All the participants highlighted food freshness as an important factor that forms their grocery shopping experience. Each participant has developed a different solution for accessing fresh food. One of the participants explained that he only bought nonperishable fruits and vegetables from grocery shopping apps before Covid-19 such as potatoes or apples. During lockdowns, he developed the habit that when he had to buy every grocery item from online grocery shopping platforms, he always decides on the app which provides perishable products in durable packages, such as strawberries in a plastic basket. Another participant’s solution is to decrease the amount of green groceries he buys.

*“If the green groceries are not fresh, the low amount will help us to consume it before it perishes. If it is already perished, my loss will be minimized.” (P04)*



Lastly, expiration date of the products is explained as another aspect related with the product interpretation factor. Participants stated that especially at dairy products, expiration date is one of the key information to decide between products.

*ii) Accessibility*

Participants mentioned that they use both categories such as, dairy products, sanitary products etc. and search bar of the grocery shopping app under different circumstances. For example, if they entered the grocery shopping app with a certain product with the brand specification in their minds, they are most likely to type the products name to the search bar on the app. If they are sure what they are going to buy but flexible about the brand, they go through the related category.

One of the participants explained that when she was not sure both the category of the product and the name of the product, drain opener, she typed related words she can think of to the search bar and found the product. With this example, grocery shopping apps with auto-complete/ smart-complete search bars came forward by participant. Also, some of the participants told if there are many options in a category, they prefer to use the search bar.

Moreover, the device preferences of participants are affected by accessibility factor. Some of the participants mentioned that they use their laptops when they are going to view specifications of the products in detail since apps are not providing product information in detail or the visuals are not large enough to evaluate. Related to this issue, a participant developed the habit of shopping urgent grocery needs via app and shopping weekly from her laptop.

Participants also use categories to find out about different product options. For example, a participant mentioned that she goes to snacks category and spend some time there to explore some new products she might not know about. Another participant told that since she has special dietary preferences, she looks for a special category in the apps.

*“Sometimes they put organic and natural products under the vegan category. If I haven’t pay attention to information about products, it is likely for me to end up with milked chocolates without preservers.” (P02)*

With the anecdote of a participant above in mind, information of expiration date, ingredients, amount or number of the products are also stated necessary by participants.

Lastly, participants explained that they have some regular grocery items that they buy often. Since the products are specific, such as bread and milk, they create a favorite items list on the grocery shopping app they use and shorten the time they spend while ordering.

### ***iii) Affordability***

Participants stated prices of the products as another aspect while shopping for groceries. Comparison of the prices between same product is a habit for some of the participants. Moreover, they also explained that promotions and discounts affect the product they are going to buy. Participants stated that they always scroll the special offers category on the grocery shopping apps they use. One of the participants mentioned she also pay attention to collect tokens from the grocery shopping app she uses and get advantageous offerings with these tokens.

Another participant explained that he prefers pick-up point deliveries for saving. Also, since he will carry the products from pick-up point to home, he mostly chooses lighter items.

### ***iv) Trust***

Most of the aspects related with trust factor is about payment, according to findings from interviews. Some of the participants are concerned about their credit card information to get stolen. For this concern, one of the participants prefer to pay at door while getting the delivery. Another participant explained that since she has an experience of stolen credit card information, she always uses virtual credit card at

every online shopping platform. Other than this, one of the participants mentioned the tip system of the app she uses as following:

*“Since you may not have cash every time, it seems like a good system, until I heard that the app is giving just a small percentage of that tip to the courier.” (P01)*

Lastly, visual appealing of both the products and the grocery shopping app itself is affecting participants trust toward the products and the grocery shopping apps. Participants stated that if the packaging design of the product, the quality of the product photos and the design of graphical user interfaces, they trust to that product/app more.

#### **v) Service**

Some of the grocery shopping apps have a recommended products section at the shopping cart page. When completing ordering, some of the participants use this section to reach the required shopping cart amount, while some other participants never pay attention. Also, another participant described this recommended products section “unnecessary and annoying” since relevance of the recommendations were not related with existing shopping cart or earlier products she bought.

Additionally, some of the participants emphasize the necessity to see user reviews for products on the grocery shopping app. They explained that user reviews help them to evaluate a new product while online shopping for any item. Therefore, having user reviews for grocery shopping apps makes sense to them.

#### **vi) Hygiene**

Hygiene is the only factor of decision phase which is specific to pandemic context. There are two important findings from interviews related to this subject. Having packaged groceries is a decision-maker for most of the participants since it will be easier to sanitizing/cleaning the product after delivery.

*“It seems dirty to me if the fruits and vegetables are not wrapped with stretch film or something like that. I always imagine that people’s hands all over the products and it disgusts me.” (P03)*

The other hygiene aspect highlighted by every participant is to pay online to minimize human interaction. Also, some of the participants stated that they prefer deliveries to being dropped at door to prevent human interaction as much as possible. However, dropping deliveries to door is not a perfect option for some other participants.

*“Sometimes they didn’t tie the packages and products spill all over to floor. I pick my onions from downstairs.” (P06)*

### **Reflection on Decision**

This section includes researcher’s observations and insights along with the findings from interviews about decision phase. Decision phase starts with entering the grocery shopping app and finishes when order is created. Participants interact with the grocery shopping app mostly on this phase. Therefore, factors affecting shopping activity is revealed mostly at this phase.

Product quality factor came forward same as consideration phase, but with a different aspect. At decision phase, packaged products mentioned by the participants more than green groceries. This is because participants prefer in-store shopping in normal times or pile their grocery needs until it is allowed in lockdown periods and ordering from direct producer over grocery shopping apps for green groceries. With these solutions, participants access fresh and/or organic food.

For packaged products, brand preferences and price advantage aspects came forward. Participants approach can shift from being brand oriented to price oriented according to their instant needs or product category. If health is not a factor or there is no former bad experience about the not preferred brand, participants may abandon their regular brand for price advantage.

The way participants access their needs in the grocery shopping app is the most fluid behavior they have. It depends on the time they have, the certainty of their needs, the amount they are going to shop, the time of order and the grocery shopping app they prefer for that shopping.

If the need is not urgent or specific, participants spend more time in the app, scrolling and wandering between categories and products. Their shopping cart increases since the shopping is more instinctive. If there is a shopping list before entering the app and the amount is enough to exceed minimum shopping cart requirement, instinctive purchases decrease.

Certainty of needed product directs participants to use search bar to access their needs. However, the keywords changed according to certainty level. To articulate, if both the product type and product brand is decided, participants type both information to reduce effort. If the product type is decided but brand is not specific, participants enter the product type to search bar.

Yet, there is another variable affects participants how to access the certain product type. If the product type fall under a generic category, and that category indicates plenty of products, the arrangement of the category defines whether the participant is going to use the search bar or scroll in the category. This behavior applied vice versa.

Additionally, participants wander in “new products”, “special offers” and “promotions” categories when their need is not urgent to shop more efficient.

#### **4.3.2.4 Delivery & Use**

This section indicates the factors affect the phase after ordering from the grocery shopping app, having the delivery and use of products. The factors resulted from the interviews are convenience, accessibility, flexibility, and service which will be explained following and can be seen in Figure 4.21.

## DELIVERY & USE

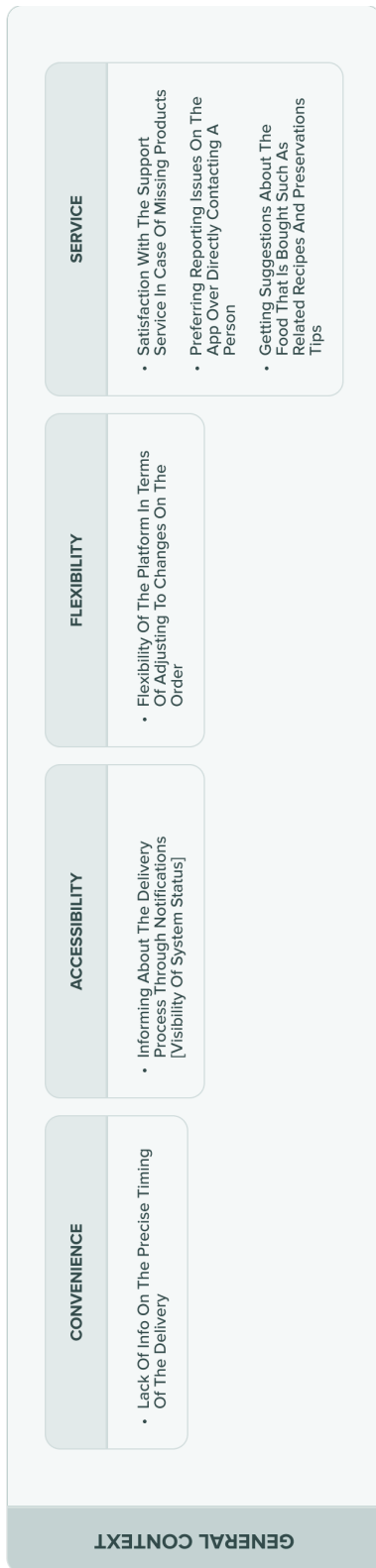


Figure 4.21 Factors related delivery & use phase

***i) Convenience***

After completing the order from grocery shopping app, until delivery arrives to delivery point, having the information about the process is crucial. Some of the grocery shopping apps gives a time range for delivery. With these circumstances, participants have to be ready at home and wait for the delivery. Participants expressed their frustration about being kept await, and even more if a delay occurs.

***ii) Accessibility***

After completing the order from grocery shopping app, until delivery arrives to delivery point, having the information about the process is crucial. Participants explained that they follow the status of delivery from the app if the given delivery time limit is expanded. If the delivery arrives in time, participants don't need to check the status.

***iii) Flexibility***

In times when participants forget to order some grocery products, some of the grocery shopping apps provide the facility to have additions to shopping cart.

Another aspect of flexibility is the interaction options provided to users, such as chatbots and call centers. When participants encounter a problem about their grocery shopping, such as perished products or delay in their delivery, they need to find a responsible to help them. For this communication, some of the participants feel comfortable with chatbots and find it as an easier and convenient way. However, some other participants express that they feel being understood if they talk with another person and this way, they feel more relieved about the solution to their problem.

***iv) Service***

When there is a missing product or a perished product among delivered items, grocery shopping apps facilities and attitude for solving the issue affects the experience of participants. Also, participants have varied preferences about

interaction options for help service. While some of the participants prefer to use conversations over phone, others explained that they prefer to use chatbots whether the chatbot is artificial or not.

Lastly, a participant declares her sympathy toward the grocery shopping app which send recipes or detailed information cards they send with the products. These recipe cards help the participant to plan her weekly meal schedule.

*“For example, if there is eggplants and tomatoes at my orders, they send a recipe indicates these vegetables. They do little niceness like that every time” (P01)*

### **Reflection on Delivery & Use**

This section provides observations and insights of the researcher with the interview results related with delivery and use phase. After creating the order in the grocery shopping app, the interaction of participants with the grocery shopping app is often due to a deficiency of the app such as missing products, perished products, or late deliveries. Participants tolerance towards this kind of deficiencies can be increased by ease of getting solutions. Some of the participants explained that they understand shortcomings if the grocery shopping app they use is new or it is a busy time. However, frequency of having problems or recruitment of same problem at the same grocery shopping app quickly disinclines participants towards the grocery shopping app, which often ends up with abandoning the app.

Yet, not all the interaction between users and the grocery shopping app caused by deficiencies. Some of the apps send recipe cards, little gifts such as sticky shopping list note pads or little notes that explains origins and harvesting process of the products. Participants usually feel connected to the related grocery shopping app through this interaction, which leads us to the last phase of grocery shopping experience via apps, “Loyalty & Advocacy”.



### 4.3.2.5 Loyalty & Advocacy

At this section, loyalty and advocacy phase's factors are introduced which can be seen in Figure 4.22. "Loyalty and advocacy" is the last step of the experience of using grocery shopping apps. Trust, habits, and engagement emerges as the factors affecting this phase. Also, in loyalty and advocacy phase, there are no factors specific to Covid-19 context.

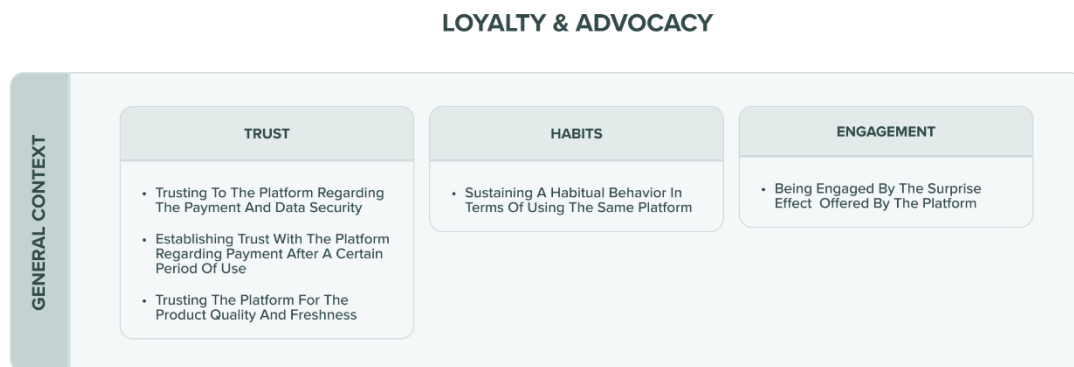


Figure 4.22 Factors related loyalty & advocacy

#### *i) Trust*

When doing online shopping, people mostly need to share their credit card information and addresses. During interviews, when participants were asked whether they have insecurities towards sharing personal information in grocery shopping apps, most of the participants said they don't. Some of the participants explained that since online shopping has developed so much in years, online payment and online security issues are solved in time. Therefore, they don't hesitate when sharing their personal information.

*"What can happen even if my address and phone number is exposed? We share this information in everywhere now. Also, about credit card information getting stolen, banks reach out about suspicious expenses and there are systems like 3d secure for security concerns." (P08)*

At the same subject, some other participants indicated that they develop trust towards the grocery shopping app they use in time after multiple satisfied experiences.

Lastly, participants stated that as similar to data security issue, they also develop trust towards grocery shopping apps about food freshness. Moreover, one of the participants said that she trusts the grocery shopping app she uses more than her own pick when freshness and product quality is the subject.

### **ii) Habits**

All the participants pointed out that they use the same one or more grocery shopping app every time. Also, they all mentioned that they try another app for convenience or out of curiosity at first. But usually, they decided on a specific grocery shopping app after one order. Then, if their needs are satisfied, they stick the same app, and it becomes a habit to use this specific app.

### **iii) Engagement**

While some grocery shopping apps let users to order the products they choose, some other apps offer grocery boxes in different sizes to them. The content of the grocery boxes varies according to harvest season of the products and both number of different product types and amount of them. Since the content of the grocery box is not specified, it becomes a surprise to users who orders from the app. This surprise factor engages users to the grocery shopping app. Additionally, one of the participants explained her experience with such an app as following:

*“Even if I do know that is a marketing game, I still got excited by each delivery I get. I opened the boxes and unwrapped the products with curiosity and enthusiasm.”*  
(P01)

## **Reflection on Loyalty & Advocacy**

In this section “Loyalty and Advocacy” phase is explained with insights of the participant. To establish loyalty and advocacy, recurring satisfied experience is indispensable. Participants feel connected with a grocery shopping app in two ways.

One of this is if they had memorable moments and milestones during their recurring shopping with the app they usually use. The other way has no special moments. If participants are using the app and satisfying their need each time, they develop loyalty without a conscious decision.

#### **4.4 Discussion**

In this section participants' experience of grocery shopping apps are discussed with pointing out pain points, needs and expectations of participants under the headings represents phases of grocery shopping experience. The context of Covid-19 is also highlighted in another section as during full closure and after full closure times. Moreover, opportunities for design interventions to enhance grocery shopping app experience are emphasized in each section.

##### **4.4.1 Pre-shopping Phase**

As shown in both the literature review and results of the fieldwork, participants' grocery shopping experience begins with the need for groceries. It is observed that deciding on these needs and the habits of the participants affect each other. As seen in the survey results, the majority of the participants meet their needs on a weekly basis. Therefore, it is understood that the majority of the participants made their one-week plans in advance and created a list of the grocery products they would buy. According to their statements during interviews, since the participants are currently working, they have made it a habit to do weekly grocery shopping in order to spend the limited time they can spare for themselves and their loved ones efficiently, and at the same time to buy products that will not perish until they are consumed. Explaining that the products in their weekly shopping lists and their quantities are generally the same, the participants stated that they find the "favorites" category in some grocery shopping apps convenient because they save time and do not have to carry the grocery products themselves.

Moreover, the participants explained that to satisfy their grocery needs, during their weekly shopping, they prefer the grocery stores on their route to the way home for products that cannot maintain their freshness for a week, such as daily milk. Therefore, spatial convenience appears as the decision-maker factor in grocery shopping preference for this situation.

Similarly, participants prefer the grocery shopping platform online or in-store, which meets the freshness criteria for fruits, vegetables, and greeneries that are likely to perish within a week. In addition, rather than perishing, participants also declared their need to pick especially fruits and vegetables according to the meal they are going to cook. At this point, visual cues, sense of smell, touch, and earlier experience with these platforms come forward while deciding on the grocery shopping platform they are going to shop from.

#### **4.4.2 During Shopping Phase**

While shopping from grocery shopping apps, participants are tending not to buy meat products, fruits & vegetables, and green groceries according to results of the online survey. When the reasons behind these preferences were discussed with participants during the interview sessions, they explained that these products perished easily and their earlier experiences with more than one grocery shopping app supports their point of view. In parallel with these findings, freshness and quality of the product is the most mentioned factor that affects participants' decision about where to shop groceries from.

Nevertheless, it is seen in the survey results in Section 4.2.2 that the rate of choosing different platforms for different product items (58%) and the rate of choosing a single platform for all product items (41%) are close to each other in their grocery shopping. Therefore, although product quality is the most mentioned factor, it cannot be defined as the definitive factor while shopping for groceries online.

As articulated in Chapter 2, participants' intentions define their shopping behavior. When online survey and interview results analyzed together, variety among participants' intentions resulted into their behaviors were observed by the researcher while they were using grocery shopping apps. To create better experiences for users, different intentions of users should be taken into account.

As explained in Section 4.4.1, the majority of participants did their shopping weekly. In addition to the products they routinely buy on their weekly shopping lists, there were also shopping items that change according to the meals they are going to cook that week. If they haven't decided on the meals yet, they could also decide according to the products which were appealing to them while navigating the categories in the grocery shopping app. Considering, it is observed that participants may have multiple intentions resulted into behaviors during one grocery shopping.

Additionally, when participants entered the grocery shopping app knowing which product they will buy, a more prominent user flow occurred through the search bar. However, when the grocery product was not certain, participants wandered between categories where they are more open to different options. Accordingly, user flow became more flexible and vaguer.

Moreover, participants' only intention to wander between different categories in the grocery shopping app was not shopping in that specific time. Participants also explained that they explore different categories on grocery shopping apps and by doing so discover new grocery products. Even though some grocery shopping apps have a "new products" category, participants also met with products which is new to them but not to the grocery shopping apps product variety. With this intention, detailed product information given by the grocery shopping apps came forward. Even though prices, freshness, expiration date and brand familiarity factors of the products were highlighted by each participant during interviews; in the survey, some of the participants also brought out factors of having organic label, being from local producers and being recommended by friends.

#### 4.4.3 Post Shopping Phase

After participants have completed their orders from grocery shopping apps, remained phase of the shopping experience varies according to having a problem with the delivery or not. It is observed in the interview results that when the potential problems of the participants were determined in advance and solution methods were developed for these problems, the grocery shopping apps could change the negative grocery shopping experience of the participants in a positive way. Also, unlike earlier phases of the grocery shopping experience, in this phase, participants interacted with some other points rather than the grocery shopping app's graphical user interfaces. Therefore, even though the solution methods had been identified, the interaction methods offered to reach these solutions should also be considered to improve the grocery shopping app experience.

If no issues occurred after completing the order from the grocery shopping app, according to participants' preferences, they interacted directly with the products after pick-up or interacted with the courier to receive their products. These new interaction points created opportunities for grocery shopping vendors to connect with their users in other ways than a virtual environment. For example, an elaborate packaging or a polite attitude of the courier affected the experience of users positively while a careless delivery affects negatively, as mentioned earlier in Section 4.3.2.4.

If the delivery was delayed, the participants wanted to learn about the state of the delivery via the app. The accuracy of this information by the service and the clear presentation of this information in the app interface directly affected the grocery shopping app experience.

If there were missing, perished or wrong products in the delivery, then participants needed to communicate with the tools provided by the grocery shopping app to solve their problems. At this step, interaction methods offered by the grocery shopping app and ease of solving problems affected the grocery shopping experience.

#### **4.4.4 Covid-19 Pandemic Effect**

##### **4.4.4.1 Earlier times of Covid-19 Pandemic**

After Covid-19 pandemic has started, participants explained that their dietary habits and grocery shopping habits have changed. As explained in Chapter 1, in Turkey, there was a full closure period in the beginning of the Covid-19 pandemic, before vaccination campaign started. Participants explained that during the period that they were staying at home, they started to cook at home more since they are at home, and they were hesitant to order from restaurants due to hygiene concerns. As a result, their grocery shopping needs enlarged both in amount and variety.

Additionally, to strengthen their immune system and eat healthier food, participants started to look for organic labeled foods and buy their groceries from local producers or from apps which is gathering groceries from local producers.

At this full closure period, brick-and-mortar grocery stores were open in a limited time during the day. Even though participants' grocery needs were increased, and they thought brick-and-mortar stores have fresher and better-quality foods which they want to consume more due to health concerns; they prefer to shop for groceries online to limit their interactions with both other people and with the products that other people touched to.

Accordingly, it is observed that hygiene concerns directed people into three solutions: finding online grocery shopping platforms with better-quality products, lower their expectations related with quality and change their grocery shopping frequency to have fresher grocery products from online grocery shopping platforms or decrease the variety of perishable product preferences of theirs.

Moreover, when participants had their deliveries, they sanitized the grocery products in suitable ways such as keeping their fruits, vegetables, and greeneries in water with vinegar and carbonate, washing packaged products with detergent, wiping packaged

products with cologne, or keeping their deliveries out in their balcony for a day before putting products in their places.

#### **4.4.4.2 Later Times of Covid-19 Pandemic**

After the full closure period, participants explained that in the interviews, they were going back to their earlier dietary habits since they were less at home and cooking less. In line with this statement, they also shop less for groceries. In detail, participants explained that due to their limited spare time since they are working full-time, they got bored and didn't feel motivated to cook for every meal in that limited spare time. With this consideration, they switched back to their earlier eating habits. This results are also in line with the recent studies which can be seen at Section 2.3.

Moreover, participants felt less motivated to sanitize each grocery product they got since they went back to work again and already interacting with other people and things in their daily lives after restrictions ended due to vaccination campaign.

Interacting with other people and things also affected their preferences about shopping for groceries in-store or online. Participants started to go back to brick-and-mortar stores to get fresher and better-quality groceries. However, they explained that they continue to shop from grocery shopping apps due to following reasons: delivery convenience for heavy items, time convenience of grocery shopping apps in times they forget some products or lack of some groceries while they were cooking or in times when they had guests at home and couldn't leave to get some appetizes/snacks to serve.



## **CHAPTER 5**

### **CONCLUSIONS**

This thesis explored the dimensions of online grocery shopping experience with the focus on grocery shopping apps and revealed how Covid-19 impacted user interaction. It is aimed to provide design direction to improve the experience of grocery shopping apps. With this aim, review on relevant literature and a fieldwork with three phases was conducted.

First, to answer the research questions from Chapter 1, a literature review was carried out in Chapter 2. In the literature the online shopping phenomenon was examined with the advancements in ICT. Following, online grocery shopping is investigated with the similarities and differences from other online shopping experiences. Then, followed up theories and models to explore dimensions of the online grocery shopping experience were introduced from the relevant literature. Accordingly, effecting factors of online grocery shopping experience and impact of Covid-19 identified from relevant literature was presented with the context of grocery shopping apps.

Following, a fieldwork consist of three phases was constructed with a structured methodology which was explained in Chapter 3. In the first phase, existing online grocery shopping platforms was reviewed to identify features of the platforms. Then, in second phase, an online survey was gathered to reveal user preferences and habits of the online grocery shopping. The online survey was conducted with 121 participants. Accordingly, as the third and last phase of the fieldwork, interview sessions carried out to reveal needs, expectations, and motives of users for using grocery shopping apps. Interview sessions started with online TRI questionnaire to reveal participants technology aptitude. Following, semi-structured interviews were

conducted with think aloud protocol to reveal user actions and motives while using grocery shopping apps and at the end of the session, customer journey map was created with each of the 8 participants to identify steps of their shopping experience. Consequently, all qualitative and quantitative data gathered from the fieldwork was analyzed and results were presented in Chapter 4 with the discussion indicates researcher's insights.

At this final chapter, research questions from Chapter 1 will be answered with the data gathered from both literature review and fieldwork results. Lastly, limitations of the study and suggestions for future work will be presented.

## **5.1 Revisiting Research Questions**

In this section, research questions introduced in Chapter 1 are revisited. With the combination of findings from both literature and the fieldwork, the answers for research questions are provided.

### ***Q1. What are the dimensions of user experience with grocery shopping apps?***

In order to identify the dimensions of the grocery shopping app experience, first the online shopping literature, following the grocery context was examined in detail. Later, fieldwork was carried out to define the current online grocery shopping experience. In the second phase of fieldwork, an online survey was conducted with 120 participants to learn about their online grocery shopping habits and preferences. Later, with 8 participants, the actions taken by the users during online grocery shopping were identified with the think-aloud protocol in the interview sessions. Following, the reasons for the preferences and habits of the participants were revealed with semi-structured interview questions. Lastly, using the customer journey map, the participants' touchpoints, motivations, aims, and attitudes towards the experience were revealed at each stage of the online grocery shopping experience.

Themes gathered as the result of interviews in Chapter 4, constructs the dimensions of user experience with grocery shopping apps (See, Figure 4.15 and 4.16 for brief information and see 4.3.2. for detailed information)

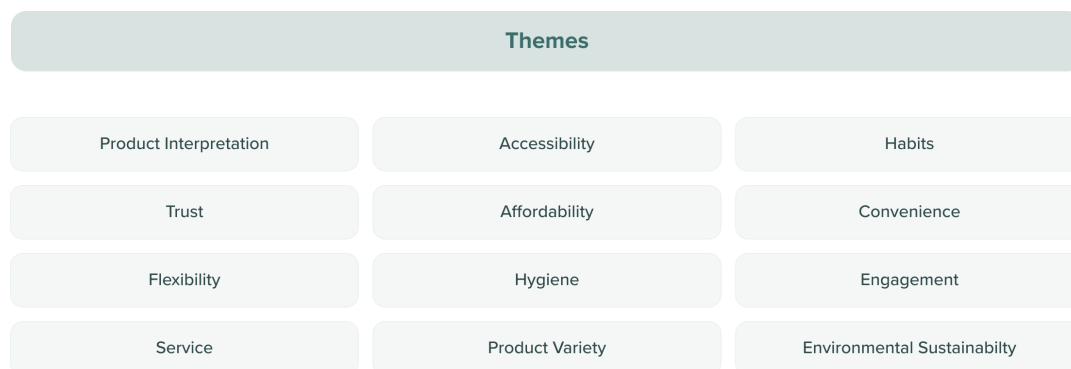


Figure 5.1 Dimensions of the online grocery shopping experience

These themes are repeated with different aspects in different phases of the online grocery shopping. Also in the literature, there were related studies investigate some of these dimensions. Lastly, the dimension ‘hygiene’ appeared due to the effect of Covid-19 pandemic.

- ***What phases do online grocery shopping experience consists of?***

Online grocery shopping experience begins when users need a grocery product. *Awareness* is the phase that users decide on the environment to satisfy their grocery shopping need. According to their evaluation, user decide on whether to shop online or in-store.

*Consideration* is the phase where users decide on the grocery shopping platform for their needs. At this phase, users pile their needs and evaluate the circumstances, (such as urgent needs), for the best solution.

*Decision* is the phase where actual shopping activity happen. It begins when the users open the grocery shopping app. Then they decided on what to purchase, how to pay and how the products are going to delivered. At this phase, usability of the app is evaluated by the user.

*Delivery & Use* is the phase where ordering grocery is completed until users reach the products.

*Loyalty & Advocacy* phase is related with the temporality of experience which is explained in Chapter 2. This phase stands for the repetitive overall grocery shopping experience. This is the phase, due to users' evaluations of several orders in time and engagement they have with the grocery shopping app, where users adopt the grocery shopping app or not.

- *How has pandemic affected users' shopping habits/behaviors? (non-online, general)*

The rate of using online grocery shopping was raised due to users concerns regarding not being infected and complying with the social distance policy. As a result, the use of the app has increased tremendously (See Chapter 1 and 2 for detailed information). However, people also continued in-store shopping to access to fresh food and due to the boredom, they had of staying at home, since the only place open in Turkey during the restriction period was the grocery stores and supermarkets. With the decrease of the COvid-19 restrictions, some people who have started using the grocery shopping apps have returned to in-store shopping, especially for fresh food. However, due to its time convenience and fast service, most of the users continue to use the app especially for small or urgent grocery needs.

According to the results of both the fieldwork and literature review, people preferred not to touch the food which is touched by other people. Due to this fact, users preferred packaged food to reach untouched food and to clean/sanitize products easily. Additionally, people adopted other new habits due to hygiene concerns, such as pick-up deliveries. However, due to the decrease in Covid-19 restrictions and case numbers, with also the length of the whole Covid-19 pandemic, the interview participants of the fieldwork explained that they were abandoning their hygiene-related behaviors which they adopt at the beginning of Covid-19.

The stockpile behavior experienced in different parts occurred after the sudden mobility restrictions. People went to grocery stores, panic-buy products and stockpiled those products at their homes. Empty market shelves occurred in Turkey after the first sudden mobility restrictions. However, the interview participants did not have concerns due to reaching their grocery needs after shop. According to related literature, people in Turkey, increased the amount of grocery shopping they had compared to pre-Covid-19, and this is associated with people starting to cook at home instead of going to the restaurant or ordering at home.

Another result of people starting to cook at home is the increased demand for fresh food. For this reason, many platforms started business which serves fruits, vegetables, and green groceries with the pandemic, according to the results of fieldwork Phase 1. However, as restrictions ease, people return to ordering home and going to restaurants habits. Since cooking meal all the time is not convenient to people, a decrease in demand for access to fresh food can be expected compared to the full-restriction period.

Furthermore, when grocery products preferred by the survey participants in online grocery shopping platforms before and during Covid-19 are examined together, as can be seen in the results of fieldwork phase 2, both fruits, vegetables, and green groceries are more likely to attract people to buy from grocery shopping apps with Covid-19. It stands out as products that people will not prefer to buy from online platforms while being the products that it has just started. When analyzed together with the interview results and the information from the literature, food freshness and food quality concerns may have an impact on this result.

***Q2. What are the pain points and opportunities of user experience in online grocery shopping context?***

Faulty points that negatively affect the online grocery shopping experience of users constitute pain points. These pain points identified both in the literature (see Section 2.3) and gathered from the interview results (see Section 4.3) were in line with each other and appeared to be the points where advancements in experience is needed.

When shopping for groceries in-store environment, users first see the groceries color and shape which constructs a sense of freshness. Following, users touch the products to feel any bruises and smell them to evaluate their freshness. At online channels, *lack of sight, touch and smell* appears as pain points accordingly. *Food freshness* occurred to be another pain points of online grocery shopping. Perished or about to perish deliveries, especially fruits, vegetables, and green groceries direct users to in-store shopping. Also, packaged foods had a similar situation which results in the *food quality* as a pain point. Physically damaged products or being unfamiliar with the brands makes users to fulfill their needs elsewhere. As a solution the physically damaged products, resistant packaging applications provided by online grocery shopping platforms. However, users develop *sustainability concerns* towards the piles of packaging for their deliveries.

While deciding on the products, ingredients and amount information are the key elements. Also, while waiting on the delivery, generic information about the delivery status is misleading users which results in *misinformation or lack of information* as another pain point from different phases of the shopping.

Opportunities are identified as missing points of the online grocery shopping experience which are also highlighted both in the literature and interview results.

Before shopping for groceries, to decide on what to shop is *requiring planning ahead what to cook*. Since coming up with a dine idea for each meal can be exhausting, the situation appears to be an opportunity for enhancing experience.

While shopping by a screen, *image size adaptability of products* appears to be another opportunity to let users examine the products closely to gain more information. Also, having *interaction options for support service* will help users to find a more suitable way for them to interact with.

***Q3. What are the potential areas for design interventions/design directions to improve user experience with grocery shopping apps?***

All dimensions of online grocery shopping experience that are the answer to the Q1 question, points out the perspective to focus on. These dimensions can find place for themselves in different stages of online grocery shopping (See Section 4.3.2 for details). Results of the fieldwork reveal both pain points and opportunities as the answer of Q2. To understand the potential areas for design interventions/directions to improve grocery shopping app experience, pain points and opportunities lead the way to the area. This pain points and opportunities were discussed with the insights of the researcher and support from the relevant literature in Section 4.4 in detail.

Since the results of the study is relevant to design, e-commerce, health & nutrition, and design research fields, practitioners and researchers from these areas can benefit from potential design intervention/direction areas.

Grocery shopping app designers should;

- Provide clear information about freshness of food. This information can vary from expiration date information to a snapshot from the storage of the food.
- Create interaction options for help services
- Provide packaging options to meet sustainability concerns

Grocery shopping app services should;

- Enable time convenience about delivery times
- Enable spatial convenience about delivery pick-up and balance the fees accordingly
- Provide product variety to enable users to shop from one platform
- Provide product information about expiration date, ingredients, and amount
- Provide realistic information about delivery status

## **5.2 Limitations of the Study**

After the first phase of fieldwork conducted in October 2020, grocery shopping platforms adjusted themselves to increasing demand due to Covid-19 and had new

features to enhance shopping experience. Since reviewing grocery shopping platforms already took place, users experiences with some of the new features are examined in the interviews and relevant recent studies revealed in Chapter 2.

Due to restrictions of Covid-19 and social distancing concerns, interview sessions were conducted online. When participants were applying think-aloud protocol while simulating a routine online grocery shopping of theirs, they shared screen with the researcher and show their phones to their laptops camera or they share screen of their mobile phones and shop for the same time. Participants gestures were not possible to observed, however, think-aloud protocol was decided to get used of to solve this issue.

At the time of forming online survey questions in early 2021, there were very limited literature and sectoral reports on the effects of Covid-19. Hence, to have a better understanding on the Covid-19 subject, news, podcasts, online sectoral meetings with practitioners from health, nutrition and e-commerce fields were examined.

### **5.3 Further Studies**

In time where the fieldwork was completed in October 2021, the restrictions due to Covid-19 was still in effect. Although this research doesn't comply the whole Covid-19 experience due to its changing nature, a glance is provided by both literature and the interview results. For future studies, researchers may focus on the experience of grocery shopping apps with a perspective of the phases of the Covid-19 as earlier phases, after vaccines were invented, after removal of restrictions.

At this study, dimensions of the grocery shopping app experience are revealed with identifying pain points and oportuntites to improve the experience with the context of Covid-19. Since the scope of the study is framed to Turkey, researchers may focus on different countries and identify differences of grocery shopping app experience between.



## REFERENCES

- Agar, M. H. (1996). *The Professional Stranger: An Informal Introduction to Ethnography* (Vol. 2). Emerald Group Publishing Limited.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Ajzen, I., & Fishbein, M. (1977). Attitude-behavior relations: A theoretical analysis and review of empirical research. *Psychological Bulletin*, 84(5), 888–918. <https://doi.org/10.1037/0033-2909.84.5.888>
- Akgüngör, S., Miran, B., & Abay, C. (2010). Consumer Willingness to Pay for Organic Food in Urban Turkey. *Journal of International Food & Agribusiness Marketing*, 22(3–4), 299–313. <https://doi.org/10.1080/08974431003641455>
- Andersen, A. L., Hansen, E. T., Johannesen, N., & Sheridan, A. (2020). *Pandemic, Shutdown and Consumer Spending: Lessons from Scandinavian Policy Responses to COVID-19*. <http://arxiv.org/abs/2005.04630>
- Argo, J. J., Dahl, D. W., & Morales, A. C. (2006). Consumer Contamination: How Consumers React to Products Touched by Others: <https://doi.org/10.1509/Jmkg.70.2.081>, 70(2), 81–94. <https://doi.org/10.1509/JMKG.70.2.081>
- Blitstein, J. L., Frenzt, F., & Jilcott Pitts, S. B. (2020). A Mixed-method Examination of Reported Benefits of Online Grocery Shopping in the United States and Germany: Is Health a Factor? 26(3), 212–224. <https://doi.org/10.1080/10454446.2020.1754313>
- Blomberg, J., & Burrell, M. (2012). An Ethnographic Approach to Design. *The Human–Computer Interaction Handbook*, 1025–1051. <https://doi.org/10.1201/B11963-CH-45>

- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101.  
<https://doi.org/10.1191/1478088706qp063oa>
- Bruwer, L.-A., Madinga, N. W., & Bundwini, N. (2022). Smart shopping: the adoption of grocery shopping apps. *British Food Journal, 124*(4), 1383–1399.  
<https://doi.org/10.1108/BFJ-04-2021-0430>
- Çakır, İ., & Kazançoğlu, İ. (2020). Sanal Market Alışverişi Yapma Niyetinde Genişletilmiş Teknoloji Kabul Modeli Bileşenleri ile Risk Algılarının Etkisi. *Celal Bayar Üniversitesi Sosyal Bilimler Dergisi, 18*(2), 305–326.  
<https://doi.org/10.18026/cbayarsos.685067>
- Chakraborty, D., Bodh Bhatnagar, S., Biswas, W., & Khatua, A. K. (2022). What Drives People to Adopt Grocery Apps? The Moderating Role of Household Size. *Business Perspectives and Research, 1*–23.  
<https://doi.org/10.1177/22785337221091640>
- Chang, H., & Meyerhoefer, C. D. (2021). COVID-19 and the Demand for Online Food Shopping Services: Empirical Evidence from Taiwan. *American Journal of Agricultural Economics, 103*(2), 448–465.  
<https://doi.org/10.1111/ajae.12170>
- Chenarides, L., Grebitus, C., Lusk, J. L., & Printezis, I. (2021). Food consumption behavior during the COVID-19 pandemic. *Agribusiness, 37*(1), 44–81.  
<https://doi.org/10.1002/AGR.21679>
- Dannenberg, P., Fuchs, M., Riedler, T., & Wiedemann, C. (2020). Digital Transition by COVID-19 Pandemic? The German Food Online Retail. *Tijdschrift Voor Economische En Sociale Geografie, 111*(3), 543–560.  
<https://doi.org/10.1111/tesg.12453>
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly: Management Information Systems, 13*(3), 319–339. <https://doi.org/10.2307/249008>

- Farag, S., Krizek, K. J., & Dijst, M. (2006). E-Shopping and its Relationship with In-store Shopping: Empirical Evidence from the Netherlands and the USA. *Transport Reviews*, 26(1), 43–61.  
<https://doi.org/10.1080/01441640500158496>
- Freeman, M. (2009). *Experiences of Users from Online Grocery Stores* (pp. 139–160). Springer, London. [https://doi.org/10.1007/978-1-84800-207-4\\_7](https://doi.org/10.1007/978-1-84800-207-4_7)
- Glaser, B., & Strauss, E. (1967). *The Discovery of Grounded Theory - Strategies for Qualitative Research*. Aldine Transaction.
- Grashuis, J., Skevas, T., & Segovia, M. S. (2020). Grocery Shopping Preferences during the COVID-19 Pandemic. *Sustainability 2020, Vol. 12, Page 5369*, 12(13), 5369. <https://doi.org/10.3390/SU12135369>
- Güney, O. İ., & Sangün, L. (2021). How COVID-19 affects individuals' food consumption behaviour: a consumer survey on attitudes and habits in Turkey. *British Food Journal*. <https://doi.org/10.1108/BFJ-10-2020-0949>
- Hassenzahl, M., & Tractinsky, N. (2006). User experience - a research agenda. *Behaviour & Information Technology*, 25(2), 91–97.  
<https://doi.org/10.1080/01449290500330331>
- 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>
- Karapanos, E., Zimmerman, J., Forlizzi, J., & Martens, J.-B. (2009). User experience over time. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 729–738.  
<https://doi.org/10.1145/1518701.1518814>
- Kujala, S., Roto, V., Väänänen-Vainio-Mattila, K., Karapanos, E., & Sinnelä, A. (2011). UX Curve: A method for evaluating long-term user experience.

- Interacting with Computers*, 23(5), 473–483.  
<https://doi.org/10.1016/J.INTCOM.2011.06.005>
- Kaur, H. & Shukla, R. K. (2016). *International Journal of Multidisciplinary Approach and Studies Consumer's Attitude towards Online Grocery Shopping In Delhi City*. <https://www.researchgate.net/publication/303922240>
- Lu, M., Wang, R., & Li, P. (2022). Comparative analysis of online fresh food shopping behavior during normal and COVID-19 crisis periods. *British Food Journal*, 124(3), 968–986. <https://doi.org/10.1108/BFJ-09-2020-0849>
- Neilsen Group (2015). *The Future of Grocery*.
- Namey, E., Guest, G., Mckenna, K., & Chen, M. (2016). Evaluating Bang for the Buck: A Cost-Effectiveness Comparison Between Individual Interviews and Focus Groups Based on Thematic Saturation Levels. *American Journal of Evaluation*, 37(3), 425–440. <https://doi.org/10.1177/1098214016630406>
- Ozok, A. A. (2007). SURVEY DESIGN AND IMPLEMENTATION IN HCI. In *The Human-Computer Interaction Handbook* (pp. 1177–1196). CRC Press. <https://doi.org/10.1201/9781410615862-72>
- Parasuraman, A., & Colby, C. L. (2014). An Updated and Streamlined Technology Readiness Index: TRI 2.0. [Http://Dx.Doi.Org/10.1177/1094670514539730](http://Dx.Doi.Org/10.1177/1094670514539730), 18(1), 59–74. <https://doi.org/10.1177/1094670514539730>
- Park, S. Y. (2009). An Analysis of the Technology Acceptance Model in Understanding University Students' Behavioral Intention to Use e-Learning. *Educational Technology & Society*, 150–162.
- Prabowo, H., & Noegrahani Hindarwati, E. (2020). Online Grocery Shopping Adoption: A Systematic Literature Review; In *2020 International Conference on Information Management and Technology*.

- Ritchie, J., Lewis, J., McNaughton Nicholls, C., & Ormston, R. (2003). *Qualitative Research Practice: A Guide for Social Science Students and Researchers* (K. Metzler, Ed.). SAGE Publications, Inc.
- Sreeram, A., Kesharwani, A., & Desai, S. (2017). Factors affecting satisfaction and loyalty in online grocery shopping: an integrated model. *Journal of Indian Business Research*, 9(2), 107–132. <https://doi.org/10.1108/JIBR-01-2016-0001>
- Stickdorn, M., Hormess, M. E., Lawrence, A., & Schneider, J. (2018). *This Is Service Design Doing: Applying Service Design Thinking in the Real World - Marc Stickdorn, Markus Edgar Hormess, Adam Lawrence, Jakob Schneider - Google Kitaplar* (M. Treseler, Ed.; 8th ed., Vol. 1). O'Reilly Media, Inc.
- Stickdorn, M., Schneider, J., Andrews, K., & Lawrence, A. (2011). *This Is Service Design Thinking Basics, Tools, Cases* (Vol. 1). Wiley.
- Sustainable Development Group. (2019). *A UN framework for the immediate socio-economic response to COVID-19*.
- Tervala, E. (2017, February 13). *Why and How to Create a Customer Journey Map - Download Free Template*. <https://www.columbiaroad.com/blog/why-and-how-to-create-a-customer-journey-map-download-free-template>
- United Nations, (2020). *A UN Framework For the Immediate Socio-economic Response to COVID-19*
- van Droogenbroeck, E., & van Hove, L. (2017). Adoption of Online Grocery Shopping: Personal or Household Characteristics? *Http://Dx.Doi.Org/10.1080/15332861.2017.1317149*, 16(3), 255–286. <https://doi.org/10.1080/15332861.2017.1317149>
- van Hove, L. (2022). Consumer characteristics and e-grocery services: the primacy of the primary shopper. *Electronic Commerce Research*. <https://doi.org/10.1007/S10660-022-09551-X>

- Wahyudin, M., & Azali, F. N. (2020). Consumer shopping behavior through online store for food and beverages. *IOP Conference Series: Earth and Environmental Science*, 425(1), 012026. <https://doi.org/10.1088/1755-1315/425/1/012026>
- Wilson, C. (2014). *Interview Techniques for UX Practitioners: A User-Centered Design Method - Chauncey Wilson - Google Kitaplar* (M. Dunkerley & H. Scherer, Eds.; 1st ed., Vol. 1). Elsevier.

## APPENDICES

### A. Online Survey Questions

İnternet Gıda Alışverişi – Anket Soruları

Merhaba,

Bu araştırma ODTÜ Endüstriyel Tasarım Yüksek Lisans öğrencisi Ezgi Çiğdem Beşe tarafından, Prof. Dr. Bahar Şener-Pedgley danışmanlığında yürütülmektedir. Bu araştırma ile, pandemi öncesi ve sonrasında kullanıcıların internette gıda alışverişi deneyimlerini anlayarak, kullanıcı deneyimini tasarım katkısıyla geliştirmek amaçlanmaktadır.

Anketi doldurmak yaklaşık olarak 10 dakika sürmektedir. Toplanan verilere yalnızca araştırmacılar tarafından ulaşabilecektir. 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 Ezgi Çiğdem Beşe'ye ([ezgicigdembeşe@gmail.com](mailto:ezgicigdembeşe@gmail.com)) ulaşabilirsiniz.

1. Bu araştırmaya tamamen gönüllü olarak katılmayı kabul ediyor musunuz?  
Kabul ediyorum  
Kabul etmiyorum
2. Düzenli olarak gıda alışverişi yapıyor musunuz?  
Evet  
Hayır
3. Gıda alışverişinizi yalnızca kendiniz için mi yapıyorsunuz?  
Evet  
Hayır
4. Gıda alışverişlerinizi ne miktarda yapıyorsunuz?
  - O anki ihtiyaç kadar
  - Tüm haftaya yetecek kadar
  - Tüm mevsim/yıl yetecek kadar toplu şekilde alırım

5. Alışveriş listenizi ne kadar zaman önceden hazırlarsınız?
- Alışveriş listesi hazırlamam, spontane hareket ederim (yanıtınız bu seçenek ise lütfen 6. soruyu cevaplamadan 7. soruya geçiniz)
  - Alışverişten hemen önce
  - Tüklenen ürün olduğu an listeye eklerim
  - Diğer: .....
6. Alışveriş listenizi hangi ortamda hazırlıyorsunuz?
- Telefonumun not uygulamasında
  - Özel bir telefon uygulamasında
  - Kullandığım internet alışverişi kanalındaki alışveriş sepetimde
  - Kâğıt üzerinde/defterimde
  - Diğer: .....
7. Covid-19 pandemi dönemiyle birlikte internet üzerinden satın almaya başladığınız yeni gıda türleri varsa, lütfen işaretleyiniz:
- Meyve/Sebze
  - Yeşillikler
  - Süt ve süt ürünleri (Tereyağı, peynir vb.)
  - Et ürünleri
  - Yumurta
  - Reçel, Pekmez vb.
  - Zeytin, zeytinyağı
  - Bakliyat ve kuru gıdalar (Makarna, pirinç, tarhana vb.)
  - Baharatlar
  - Özel gıdalar (Glütensiz, vegan/vejetaryen gibi özel beslenme biçimine yönelik ürünler)
  - Diğer.....
8. Aşağıdaki gıda türlerinden hangileri için internet alışverişini tercih etmiyorsunuz?
- Meyve/Sebze
  - Yeşillikler
  - Süt ve süt ürünleri (Tereyağı, peynir vb.)
  - Et ürünleri
  - Yumurta
  - Reçel, Pekmez vb.
  - Zeytin, zeytinyağı



- Bakliyat ve kuru gıdalar (Makarna, pirinç, tarhana vb.)
- Baharatlar
- Özel gıdalar (Glütensiz, vegan/vejetaryen gibi özel beslenme biçimine yönelik ürünler)
- Diğer: .....

Çevrim içi gıda alışveriş kanallarını kullanmıyorsanız, 9 – 16 arasındaki soruları cevaplamanıza gerek yoktur, 18. soruya geçerek anketi tamamlayabilirsiniz.

9. Çevrim içi ortamda gıda alışverişi imkânı sunan aşağıdaki kanalları en çok tercih ettiğinize (4), en az tercih ettiğinize (1) vererek lütfen 1 ile 4 arası sıralayın.

- Cep telefonu/tablet uygulamaları (app): .....
- Web siteleri: .....
- WhatsApp iletişimi ile: .....
- Sosyal medya hesapları ile (Instagram, Facebook): .....

10. Çevrim içi gıda alışverişi için aşağıdaki ifadelerden hangisi sizin yaklaşımınızı daha iyi yansıtıyor?

- a) Gıda alışverişlerimi mümkün olduğunca tek kanaldan yapmaya çalışırım.
- b) Belirli gıda türleri için her zaman tercih ettiğim alışveriş kanalları vardır.

11. Çevrim içi gıda alışverişi yaparken seçimlerinizi etkileyen kriterlerden size uygun olanları işaretleyiniz.

- Fotoğraf içermesi
- Markayı tanıyor olmak
- Satılan kanalı tanıyor olmak
- Arkadaş tavsiyesi
- Organik/doğal içerik etiketi
- Yerel üreticiden olması
- Paketli olması
- Ürünün fiyatı
- Ürünün gramajı
- Aynı ürün için farklı seçenekler sunulması
- Kampanya ve promosyonlar
- Kargo ve teslimat seçenekleri
- Diğer: .....

12. Çevrim içi gıda alışverişlerinizde kullanmak üzere, aşağıdaki ödeme yöntemlerini sizin için en güvenli olduğunu düşündüğünüze (4), en az güvenli olduğunu düşündüğünüze (1) olmak üzere 1 ile 4 arası sıralayın.

- Kredi kartı
- Havale/EFT
- Kapıda nakit olarak
- Kapıda kredi kartı ile

13. Çevrim içi satın aldığınız gıdaların size ulaşana kadar geçirdiği süreçleri bilmek ve takip etmek ister misiniz? (Paketleme, teslim aracına yükleme, şehir içi/dışı dolaşım vb.)

- Evet  
Hayır

14. Pandemi, gıdaların herhangi bir teması engelleyecek şekilde paketlenmiş olması, ambalaj malzemesinin gıdaya uygunluğu vb konulara ilginizi etkiledi mi?"

- Evet  
Hayır

15. Covid-19 pandemisini göz önünde bulundurduğunuzda, çevrim içi gıda satın alma kanallarının sağlamlarını tercih edeceğiniz bir özellik var ise lütfen belirtir misiniz?

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Son olarak,

16. Araştırmanın ilerleyen aşamasında gıda alışverişi beklentilerine yönelik gerçekleştirmek istediğim mülakata katılmayı isterseniz size ulaşabilmem için lütfen aşağıda tercih ettiniz iletişim bilgilerinizi doldurur musunuz?

Ad, Soyad:

Şehir:

Ülke:

E-posta:

Tel:

Katkılarınız için tekrar teşekkür ederim.

## B. Technology Readiness Index Questions

### TRI Survey Questions

Hello,

This research was conducted by METU Industrial Design graduate student Ezgi Çiğdem Şahin, Prof. Dr. It is carried out under the consultancy of Bahar Şener-Pedgley.

With this research, it is aimed to improve the user experience with the contribution of design by understanding the food shopping experiences of the users before and after the pandemic.

The survey consists of 17 questions and takes about 5 minutes. Only the researchers will be able to access the collected data. The results of this research may be used in scientific and professional publications or for educational purposes, but the identity of the participants will be kept confidential.

You can contact researcher Ezgi Çiğdem Şahin ([ezgicigdembese@gmail.com](mailto:ezgicigdembese@gmail.com)) for more information, to forward your questions and comments.

1. Do you agree to participate in this research completely voluntarily?
  - I agree
  - I disagree
2. Name, surname?

Please tick the option that best fits you in the statements below.

3. New technologies contribute to a better quality of life.
  - 1) Strongly disagree
  - 2) Disagree
  - 3) Neither agree nor disagree
  - 4) Agree
  - 5) Strongly agree
4. Technology gives people more control over their daily lives.
  - 1) Strongly disagree
  - 2) Disagree

- 3) Neither agree nor disagree
  - 4) Agree
  - 5) Strongly agree
5. Technology gives me more freedom of mobility.
- 1) Strongly disagree
  - 2) Disagree
  - 3) Neither agree nor disagree
  - 4) Agree
  - 5) Strongly agree
6. Technology makes me more productive in my personal life.
- 1) Strongly disagree
  - 2) Disagree
  - 3) Neither agree nor disagree
  - 4) Agree
  - 5) Strongly agree
7. Other people come to me for advice on new technologies.
- 1) Strongly disagree
  - 2) Disagree
  - 3) Neither agree nor disagree
  - 4) Agree
  - 5) Strongly agree
8. In general, I am among the first in my circle of friends to acquire new technology when it appears.
- 1) Strongly disagree
  - 2) Disagree
  - 3) Neither agree nor disagree
  - 4) Agree
  - 5) Strongly agree
9. I can usually figure out new high-tech products and services without help from others
- 1) Strongly disagree
  - 2) Disagree
  - 3) Neither agree nor disagree
  - 4) Agree
  - 5) Strongly agree
10. I keep up with the latest technological developments in my areas of interest
- 1) Strongly disagree
  - 2) Disagree
  - 3) Neither agree nor disagree

- 4) Agree
  - 5) Strongly agree
11. When I get technical support from a provider of a high-tech product or service, I sometimes feel as if I am DIS4 being taken advantage of by someone who knows more than I do.
- 1) Strongly disagree
  - 2) Disagree
  - 3) Neither agree nor disagree
  - 4) Agree
  - 5) Strongly agree
12. Technical support lines are not helpful because they don't explain things in terms I understand.
- 1) Strongly disagree
  - 2) Disagree
  - 3) Neither agree nor disagree
  - 4) Agree
  - 5) Strongly agree
13. Sometimes, I think that technology systems are not designed for use by ordinary people.
- 1) Strongly disagree
  - 2) Disagree
  - 3) Neither agree nor disagree
  - 4) Agree
  - 5) Strongly agree
14. There is no such thing as a manual for a high-tech product or service that's written in plain language
- 1) Strongly disagree
  - 2) Disagree
  - 3) Neither agree nor disagree
  - 4) Agree
  - 5) Strongly agree
15. Too much technology distracts people to a point that is harmful
- 1) Strongly disagree
  - 2) Disagree
  - 3) Neither agree nor disagree
  - 4) Agree
  - 5) Strongly agree

16. Technology lowers the quality of relationships by reducing personal interaction
- 1) Strongly disagree
  - 2) Disagree
  - 3) Neither agree nor disagree
  - 4) Agree
  - 5) Strongly agree
17. People are too dependent on technology to do things for them
- 1) Strongly disagree
  - 2) Disagree
  - 3) Neither agree nor disagree
  - 4) Agree
  - 5) Strongly agree
18. I do not feel confident doing business with a place that can only be reached online
- 1) Strongly disagree
  - 2) Disagree
  - 3) Neither agree nor disagree
  - 4) Agree
  - 5) Strongly agree

## C. Semi-structured Interview Questions

### İnternet Gıda Alışverişi – Mülakat Soruları

Merhaba,

Bu araştırma ODTÜ Endüstriyel Tasarım Yüksek Lisans öğrencisi Ezgi Çiğdem Beşe tarafından, Prof. Dr. Bahar Şener-Pedgley danışmanlığında yürütülmektedir. Bu araştırma ile, pandemi öncesi ve sonrasında kullanıcıların internette gıda alışverişi deneyimlerini anlayarak, kullanıcı deneyimini tasarım katkısıyla geliştirmek amaçlanmaktadır.

Mülakatın yaklaşık olarak 40 dakika sürmesi planlanmıştır. Toplanan verilere yalnızca araştırmacılar tarafından ulaşılabilecektir. 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 Ezgi Çiğdem Beşe'ye ([ezgicigdembeşe@gmail.com](mailto:ezgicigdembeşe@gmail.com)) ulaşabilirsiniz.

### Pandemi Öncesi Deneyim

1. Pandemi dönemi öncesinde çevrimiçi gıda alışveriş araçlarını kullanmış mıydınız?
2. Kullandıysanız hangi aracı tercih etmişsiniz, neden?
3. Bu aracı nereden öğrenmişsiniz?
4. Bu aracı hangi gıda ürünlerini satın alırken kullanıyordunuz?
5. Hangi gıda ürünlerini çevrimiçi araçları kullanmadan satın almayı tercih ediyordunuz?
6. Çevrimiçi gıda alışverişi ve fiziksel gıda alışverişini karşılaştırdığımızda, gördüğünüz avantaj ve dezavantajlar nelerdir?
7. Farklı çevrimiçi araçlardan farklı gıda ürünleri tercih ediyorsanız tercihlerinizi hangi kriterlere göre yapıyorsunuz?

### Pandemi Şartlarında Deneyim

8. Pandemiyle birlikte çevrimiçi gıda alışveriş miktarınızda bir değişim oldu mu?
9. Pandemi ile birlikte satın aldığımız gıda çeşitliliğinde bir değişiklik oldu mu?

10. Pandemi döneminde gıda alışverişlerinde dikkat etmeye yeni başladığınız bir özellik var mı? (Ürünün paketlenmesi, yerli ürün olması vb)
11. Pandemi dönemiyle birlikte hizmet vermeye başlayan yeni uygulamalar var. Bunları deneyimlediniz mi? Denediyseniz avantajlı yönleri sizce nelerdi?

#### Çevrimiçi Alışveriş Süreçleri

12. Gıda satın alırken hangi cihazı tercih ediyorsunuz, neden? (Bilgisayar, tablet, cep telefonu gibi)
13. Kullanmakta olduğunuz uygulamayı nasıl kullandığınızı adım adım göstererek anlatabilir misiniz?
14. Bu aracı kullanırken yardıma ihtiyaç duyduğunuz, ya da memnun kalmadığınız bir adım var mıydı? Neden?
15. Bu aracın en çok hangi özelliği/özellikleri sizi memnun etmişti? Neden?
16. Ödeme yöntemleri konusunda tercihlerinizi hangi kriterlere göre yapıyorsunuz?
17. Teslimat yöntemleri konusunda tercihlerinizi hangi kriterlere göre yapıyorsunuz?

#### Kullanıcı Bağlılığı – Güven

18. Kullandığınız tek bir çevrimiçi gıda alışveriş aracı var mı? Bu seçim tüm gıda ürünleri için geçerli mi? Neden bu aracı seçtiniz?
19. Kullandığınız bu aracın sunduğu ürünlerin markasını bilmiyor olsanız da dener misiniz?
20. Kullandığınız bu araçta pandemiye yönelik sunulan özellikler oldu mu? Varsa neler? Ne sunmasını isterdiniz?
21. Ödeme bilgileri, adres bilgileri gibi kişisel verilerinizi paylaşmak sizin için uygun mu? Yoksa bunları paylaşmanız gerektirmeyecek seçenekler olsa tercih eder miydiniz?

Son olarak,

Kullandığınız çevrimiçi gıda alışveriş araçlarını aşağıdaki tabloda anlatıldığı üzere işleyebilir misiniz? (Customer Journey Map)



## D. Ethical Approval

UYGULAMALI ETİK ARAŞTIRMA MERKEZİ  
APPLIED ETHICS RESEARCH CENTER



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14 NİSAN 2021

Konu : Değerlendirme Sonucu

Gönderen: ODTÜ İnsan Araştırmaları Etik Kurulu (İAEK)

İlgi : İnsan Araştırmaları Etik Kurulu Başvurusu

### Sayın Bahar Şener-PEDGLEY

Danışmanlığını yürüttüğünüz Ezgi Çiğdem ŞAHİN'in "Covid-19 Pandemisiyle Birlikte Değişen İnternet Üzerinden Gıda Alışverişi Beklentileri İçin Tasarım" başlıklı araştırması İnsan Araştırmaları Etik Kurulu tarafından uygun görülmüş ve **122-ODTU-2021** protokol numarası ile onaylanmıştır.

Saygılarımızla bilgilerinize sunarız.

Dr.Öğretim Üyesi Şerife SEVİNÇ  
İAEK Başkan Vekili



