

Effects of Digital Shadow Work on Foreign Users' Emotions and Behaviors during the Use of Korean Online Shopping Sites

Pooja Khandagale^a, Joon Koh^{b,*}

^a *Ph.D Candidate, Department of Digital Future Convergence Service Interdisciplinary Program, Chonnam National University, Korea*

^b *Professor, Department of Business Administration, Chonnam National University, Korea*

ABSTRACT

Social distancing required the use of doorstep delivery for nearly all purchases during the COVID-19 pandemic. Foreign users in Korea are forced to participate in superfluous tasks, leading to an increase in their anxiety and fatigue while online shopping. This study examines how digital shadow work stemming from the language barrier can affect the emotions and behaviors of foreign shoppers that use Korean shopping sites. By interviewing 37 foreign users in Korea, this draft examined their experiences, behaviors, and emotional output, classifying them into 14 codes and seven categories. Using grounded theory, we found that online shoppers' emotions, feelings, experiences, and decision making may be changed in the stages of the pre-use, use, and post-use activities. User responses regarding shadow work and related obstacles can be seen with the continue, discontinue, and optional (occasional use) of Korean online shopping sites. Pleasure and satisfaction come from high efficiency and privileges, whereas anger and disappointment come from poor self-confidence and pessimism. Furthermore, buyer behavior and product orientation are identified as intervening conditions, while the online vs. offline shopping experiences are identified as contextual conditions. In conclusion, language barriers and other factors make online shopping difficult for foreign shoppers, which negatively affects their psychological mechanisms and buying behaviors. The implications from the study findings and future research are also discussed.

Keywords: Digital Shadow Work, Online Shopping, Anxiety, Language Barrier

I . Introduction

In recent years, several non-native-English-speaking countries have invested heavily in educational

reforms in a bid to become regional hubs for higher education (Ahmad and Buchanan, 2017; Knight, 2011; Jon et al., 2014; Marginson, 2011). Furthermore, there has been a recent influx of immigrants into

*Corresponding Author. E-mail: kjoon@chonnam.ac.kr

South Korea, leading to a rise in the number of foreign residents. As of December 2019, nearly 2.5 million foreigners reside in South Korea (Lee and Botto, 2021). These foreign residents have to adopt online shopping as a purchasing method since it has proved to be a comfortable way of shopping and procuring goods. In the current pandemic era, online shopping has been a boon and subsequently it continues to be one of the best modes of shopping (Kim et al., 2008). The basic concept of online shopping is to harness technological developments for commerce, thereby reducing the amount of work of both the sellers and consumers. However, due to language barriers, foreign consumers are presented with a different type of work known as digital shadow work (Lambert, 2015). Digital shadow work is unpaid work demanded by an industrial society or firm as a necessary complement to producing goods and services in the digital environment (Ryoo and Park, 2021).

Taking care of a child is a representative example of shadow work. The task of child rearing includes various activities, such as nurturing, parenting, teaching, and educating, which is an example of shadow work (Illich, 1981; Pupo and Duffy, 2012). Similarly, foreigners who are non-Korean speakers face certain obstacles while using online mobile shopping apps in Korea, mainly due to the language barrier. Sometimes due to language differences, consumers may not be confident in purchasing products, using foreign retailers' security for payment, or about product delivery as promised. Moreover, in some cases, foreign consumers have a greater fear perception of being scammed (Edwards et al., 2009; Lim et al., 2004; Pavlou et al., 2007; Sinkovics et al., 2013; Wang and Head, 2007; Yamin and Sinkovics, 2006).

According to Harrison-Walker (2002), barriers to online purchasing for foreign shoppers tend to be based on demographics or sociocultural factors, such

as language preferences, income, literacy levels, distance shopping, shopping experience, security and privacy concerns, payment methods, financial issues (e.g., exchange rate fluctuations or tariffs), infrastructure issues (e.g., communications, delivery issues, Internet penetration), political barriers, and legal restrictions, along with retailer and website characteristics (Becerra et al., 2013; Jarvenpaa et al., 2000; Mukherjee and Nath, 2007; Sabiote, 2012). However, the language barrier issue is far more complex than expected and is further compounded by acculturation. Owing to the lack of proper language skills, online shopping for foreigners has become a source of shadow work.

Previous studies have focused on the concept of shadow work in digital environments, but few studies have tried to link shadow work and online shopping. In other words, there is a research gap in terms of explaining how digital shadow work is related to online shopping experiences and why foreign customers face significant difficulties in online shopping in Korea. This study attempts to address this research gap. For this purpose, we examine how foreign users show their emotion and behaviors in response to their online shopping experience from a shadow work perspective. This study helps to understand the expectations of foreigners toward Korean online shopping sites, which may help in the acquisition of a niche market, leading to increased revenue and sales.

This study addresses the following research questions: what problems do foreigners face in shopping online using Korean shopping sites? What and where is the largest amount of shadow work that foreign users perform while shopping on Korean shopping sites? How do foreign users react when they face shadow work in online shopping? Since these issues are widespread among foreign users, we conduct an explanatory study of the digital shadow work that stems from the language barrier faced by foreign

users using the grounded theory methodology (GTM) (Chun Tie et al., 2019; Wiesche et al., 2017).

II. Literature Review

Convenience, ease of use, doorstep delivery, the availability of various types of goods and services at reasonable prices on the same platform, long working hours, and less time to participate in offline shopping are the major reasons why individuals choose online shopping (Venkatesh et al., 2022). Most foreign shoppers face an inherent problem while shopping on apps and sites, i.e., the language barrier. Owing to this barrier, foreign consumers are often required to participate in a different type of work known as digital shadow work (Lambert, 2015), which refers to the unpaid work users perform during the self-service aspect of online shopping. The imperative to buy products as cheaply as possible using minimal effort induces consumers to participate in more shadow work via online shopping apps (Ryoo and Park 2021). Despite the performance of such shadow work, some users continue to shop. However, some users change their mind and discontinue shopping to avoid fatigue, anxiety, and the search for alternatives to shop. Many foreign shoppers residing in Korea prefer not to participate in offline or instore shopping because they want to avoid any communication with shopkeepers. Therefore, they tend to participate in online or mobile shopping. However, the language barrier leads to extra shadow work (translation into English, rechecking, verification of information) in online shopping process for them. According to psychological reactance theory, limited freedom of choice may lead to negative effects such as anxiety and intention switching (Feng et al., 2019).

Customer satisfaction is the primary goal of suc-

cessful marketing strategies (Bhattacharjee, 2001; Shim et al., 2002). Factors such as language barriers, site design, payment gateway security, and perceived risks, may cause anxiety in users (Musa et al., 2022). When purchasing items on the website, users often become pessimistic owing to inadequate familiarity. Furthermore, the need for a secure payment gateway may prevent consumers from opting for mobile shopping (Liang et al., 2019). For foreign users who cannot speak Korean, online shopping in Korea becomes tricky due to the language barrier though Korean online site is available with English version but the translation is not always accurate and usually misleading.

While using mobile shopping, many online shoppers experience inconvenience, believing that some websites have provided incomplete information about product (Liang et al., 2019). When foreigners decide to buy expensive products on Korean shopping sites, they face the dilemma of whether to buy or not to buy the product (Agyapong, 2018). This may happen due to incomplete information available on the website about the product (Jinyevu and Mwashu, 2014). Perceived risk can be defined as uncertainty about the future, which may negatively affect individuals' purchase intentions, and users need a secure way to pay for the expensive products they order online (Mathew and Mishra, 2014).

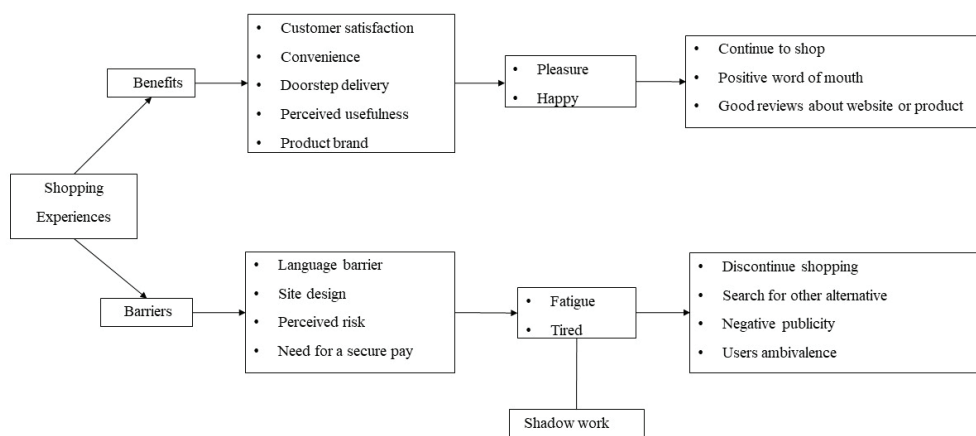
Moreover, shoppers may feel exhausted due to the time-consuming repetitive tasks involved in online shopping using Korean shopping sites; such tasks termed as a shadow work. (Agyapong, 2018; Ryoo and Park, 2021). The quantity of shadow work may be negatively related to a consumer's interest in mobile shopping on a specific site. More shadow work leads to more fatigue in users and ultimately, they lose interest in mobile shopping. The quality of shadow work based on the consumer evaluation is critical to purchase decision making. The mechanism of how

shadow work leads to fatigue, resulting in discontinued mobile use, is well explained by the studies of Ryo and Park (2021) and Monsuwe et al. (2004). Satisfied consumers consider revisiting specific sites to continue shopping. Therefore, the customer satisfaction plays a critical role in consumers' mobile shopping behaviors (Musa et al., 2022). Customer satisfaction, convenience, product brand, doorstep delivery, time saving ability, and perceived usefulness are the important factors that influence consumer behavior in the online shopping context (Nguyen et al., 2021). <Figure 1> shows the benefits and barriers of the online shopping experience, the emotions generated in response to the benefits as well as with barriers when user faces it and how shopper reacts when he or she comes across the barriers and benefits in online shopping. <Figure 1> presents the initial analytical framework for the online shopping experiences of forcing, emotions and their actions with Korean online shopping sites.

In online shopping, customers tend to learn from their product purchase experiences and actual product use experiences. These experiences shape their

trust and behavior on shopping websites and often generate word-of-mouth communication, through online and offline social networks (Cho and Park, 2001). Online shopping experiences with Korean shopping site give benefits to foreign users; however, at a point, the shoppers face some barriers. The key experiences of online shoppers are as follows:

- Customer satisfaction, doorstep delivery, convenience, perceived usefulness (Davis, 1989), along with product brand are the benefits of online shopping for foreigners using Korean shopping sites (Venkatesh et al., 2022).
- The satisfied users continue to shop with a specific shopping site, share his positive shopping experiences with others, and encourage others to shop online with the same site (Jun and Kang, 2013; Shim et al., 2001).
- Available language, site designs, perceived risk, and the need for a secure payment method can be some barriers for Korean online shopping sites. All barriers cause discomfort in users, which leads to fatigue. The language barrier



<Figure 1> Framework for the Analysis of Foreigners' Online Shopping Experiences, Emotions, and Their Activities on Korean Online Shopping Sites

can accelerate the difficulty of online shoppers for non-native Korean users.

- When users are not satisfied or feel insecure for the purchase from specific online shopping site, they may discontinue the shopping, in some cases they may give negative reviews to others and sometimes the users will be in dilemma whether to continue the shopping with the specific site or not (Weibin et al., 2021).
- The uncertainty about purchasing from foreign online retailers is typically caused by a general lack of information about the retailer, limited consumer experience in international purchasing, language barriers; complex deliveries; complex product returns; and lack of information about their rights (Cheng et al., 2008; Edwards et al., 2009; Häubl and Trifts, 2000). These lead to high uncertainty when purchasing from foreign retailers (Harrison-Walker, 2002; Pavlou et al., 2007; Safari, 2014).

III. Research Design

Previous digital shadow work research mainly focuses on the conceptualization and mechanism of shadow work in the digital context. For example, the GTM was used by Park and Lee (2019) to review the literature on the shadow work as well they have conceptualized this concept from theoretical insights. The shadow work mechanism in digital environment was identified by the study of Park et al. (2020). The further development in digital shadow work by identifying the classification, dynamics and research directions were done by the study of Lee (2021).

In essence, the GTM is a structured yet flexible methodology (Chun Tie et al., 2019). This methodology is appropriate when little is known about a

phenomenon and aims to produce or construct an explanatory theory that uncovers the process inherent to a substantive area of inquiry (Park and Lee, 2017). The GTM has been frequently used in social science research, especially when there are limited prior studies on new phenomena or specific issues, for which a new theory must be generated (Gasson and Waters, 2013). One of the advantages of the GTM is that it aims to generate a theory from the data. With limited access to the dataset (foreign users), the GTM provides the necessary tools to hypothesize a theory that can help to conceptualize a pattern of behavior resulting from digital shadow work (Wiesche et al., 2017).

This study's design involved conducting in-depth interviews. To identify the actual problems faced by foreigners on Korean shopping sites (apps), preliminary interviews were conducted with five respondents belonging to different countries, with different levels of proficiency in the Korean language, and different durations of stay in Korea. Next, we modified the interview questions and conducted a second round of interviews with 32 respondents, excluding the initial five respondents. The second-round interviews were conducted to understand the emotions and actions of the users: what they would do if they face obstacles or repetitive, unnecessary tasks when shopping using Korean online shopping apps. These interviews provide insights into the emotional mechanism of users and their reactions when they are faced with shadow work in the online shopping process.

3.1. Case Description

When shopping on a Korean online shopping site, i.e., the G-Market website, foreigners have to create an account by providing the details of their registration cards and passports. Users can type in a keyword for their desired product in the search box available

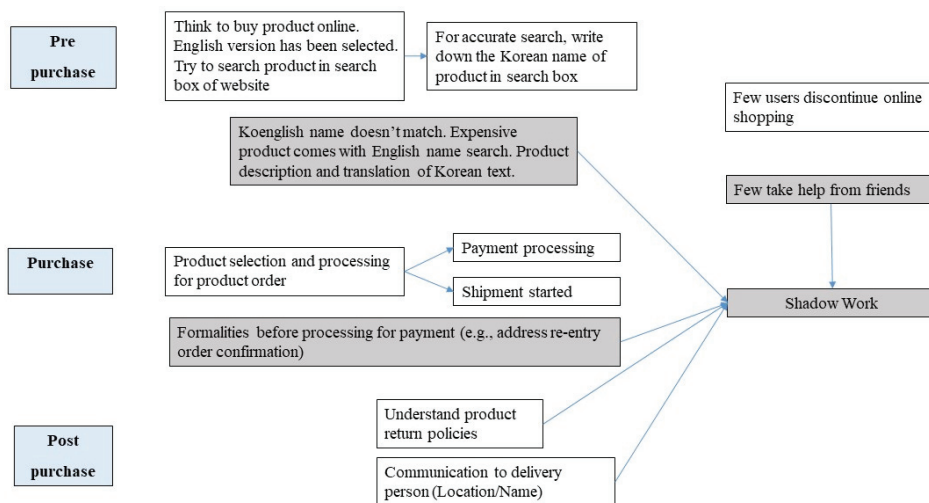
on the G-Market homepage. Searching using keywords shows all available relevant products on the site; subsequently, consumers can select the desired products and proceed to checkout. To purchase accurate and affordable products, local product search users must search for the Korean name of a product (Korean name translated to English name, i.e., the KoEnglish name). It has been observed that, when users start searching with English name, the results are typically related to expensive brands or inaccurate products are displayed in search window. If a product description is available in Korean, the users must translate the Korean text to English, which is not always accurate and sometimes, the translation may be inaccurate or provide misleading information about the products. The users then have to provide their personal details during checkout along with confirming their order and contact details. After checkout is completed, the website sends the consumer an order confirmation email, inclusive of tracking, details of purchased products, and payment details. The process of shopping online using Korean shopping sites for foreigners is shown in <Figure 2>, which shows the

pre-purchase, purchase and post-purchase activities, along with the unnecessary repetitive tasks in online shopping process for foreigners.

Online shoppers face shadow work from the beginning, i.e., searching for the product, to placing the order to the delivery of the product, and it differs from step to step. Furthermore, their emotions, feelings, experiences, and decision-making process may change during the stages of pre-use, use, and post-use activities. Therefore, to highlight what kind of shadow work foreign users face and in which areas, we divide users' shopping experiences into pre-use (pre-purchase), use (purchase), and post-use (post-purchase) activities.

3.2. Participant Selection and Data Collection

All participants were selected from the Kwangju Metropolitan City in South Korea. A preliminary interview was conducted with five respondents to determine the actual problems faced by foreigners (non-Korean speakers) when shopping online using Korean shopping apps. These respondents belonged to different countries and had different proficiency



<Figure 2> Online Shopping Process for Foreign Shoppers using Korean Shopping Sites

<Table 1> Data Collection in Two-phase Interviews

Phases	Activities	Topics	Purposes
Primary interview (n = 5) Frequent users (January 2022)	Meeting with foreign users of Korean online shopping apps; Informal interviews were conducted and their experiences were noted down.	Identification of the basic problems in online shopping for foreigners in Korea.	What are the basic obstacles to foreigners' online shopping in Korea? What emotions are experienced by shoppers when they face problems in online shopping?
Second-round interview (n = 25) Average users (February 2022)	Informal interviews were conducted; users' experiences were noted down, along with their emotional output.	In addition to the topics from the first interview, identification of other problems related to online shopping by foreigners	What do foreigners expect from shopping apps? How quickly are a few frequent users converted into average users? Which emotions do they relate to online shopping?
Second-round interview (n = 7) Non-users (April 2022)	Reactions of users when they faced problems in online shopping were noted down.	Foreigners' negative opinion of Korean online shopping sites.	What do people dislike about Korean shopping apps or sites? What other shopping options or alternatives do they have? Can people who avoid online shopping develop a positive opinion toward Korean online shopping apps? What do nonusers communicate to new foreign residents about Korean shopping apps? Have persons who refuse to use Korean shopping apps utilized them for online shopping before?

levels in terms of the Korean language, as well as varying durations of their stay in Korea. Among the interviewees, three were frequent users (shopping four to five times a week) of Korean online shopping sites while the remaining two were average users (shopping two times a week). The interview questions were very basic and were concerned with the respondents' online shopping frequency, the obstacles and difficulties they faced in online shopping, and what changes they would like to see in Korean shopping sites, and their limited Korean language skills. The second-round interviews were conducted with 32 respondents who have different buying frequencies and varying levels of proficiency in the Korean language. We sought to understand their buying pat-

terns as well as their emotions toward online shopping by asking them open ended questions such as "how do you react when you face difficulties or shadow work when using Korean online shopping apps." If the respondent stopped shopping on a specific site, we asked them to specify which other alternatives they utilized for shopping.

We aimed to understand how negative emotions could lead users to discontinue their online shopping activities with a shopping website. An overview of the data collection process using two-phase interviews is presented in <Table 1>. Along with the basic questions from the first round of interviews, we asked the respondents how they would react if they faced problems when using online shopping sites.

Furthermore, we discussed how promotional activities can change users' minds as to whether they will continue to shop online on a specific site or not.

3.3. Interview Question Sets

The questions for the interviews are divided into four parts. The first part comprises questions to obtain the basic introductory information of respondents, including demographics, online shopping preferences, frequently brought items, what shoppers dislike about online shopping, the reasons for these

dislikes, etc. This information helped us understand the consumers' attitudes toward shopping online on Korean shopping sites. The second part included questions about the respondents' entire online shopping process. We aimed to identify the areas in which online shoppers face significant difficulties in their online shopping process. Additionally, we asked the respondents to describe when they had felt that their online shopping process with Korean sites was seamless and when they felt that their shopping process was time-consuming and frustrating. The third section included questions about the users' responses

<Table 2> Interview Question Set

Type	Questions Set
Introductory Information	Basic questions regarding the demographics of respondents. What do you prefer to use for online shopping in Korea (site/app names)? How did you learn about a specific app or site? How frequently do you shop online using Korean shopping sites? When did you start using online shopping in Korea? Why did you start shopping online? What are your repeated purchases? What are the products you avoid buying online?
Online Shopping Process	What is your process for shopping online using apps/sites? Do you think you are easily capable of shopping online? What are the products that you avoid buying online? Why? When do you feel that the process of shopping on Korean shopping sites is easy and when do you feel that it is time-consuming? Have you ever become frustrated during the online shopping process? When?
Shoppers' Responses	Do you still use a specific site for online shopping? Do you prefer repeated purchases or purchasing new products after a satisfactory shopping experiences? What do you do when you are tired of online shopping? When do you experience fatigue and discomfort when shopping using Korean shopping apps? Why? What other alternatives do you have if you stop online shopping? Do you receive any help from your Korean friends for online shopping? What problems do you face when using Korean online shopping sites? How did you try to overcome it? Have you recommended any Korean shopping sites to your friends?
Suggestions	What improvements do you wish to see to avoid the problems faced by foreigners when shopping on Korean online shopping sites? Have you ever compared Korean online shopping sites with the sites used in your country for online shopping? What are the main differences you experienced between these two types of sites? What is a major problem you faced when shopping using Korean online shopping sites?

and emotions toward online shopping using Korean shopping apps. For this purpose, we asked the users what they do when they feel confident in their online shopping experience compared with when they get frustrated. Moreover, we tried to identify the factors that cause users to discontinue their online shopping. Furthermore, we asked the participants about the alternatives they would use after discontinuing online shopping. In the fourth section, we asked the respondents what improvements or features they wanted to see in Korean shopping apps. The interview questions are presented in <Table 2>.

IV. Interview Process and Data Coding

4.1. Primary Interview

A preliminary (primary) interview, aimed at developing a meaningful and feasible research question, was conducted with five participants. Participants 1, 3, and 5 were frequent online shoppers, while Participants 2 and 4 were average shoppers. In this context, frequent shoppers refer to individuals who shop four to five times per week, while average shoppers are those who shop two times per week. The

preliminary interview focused on the actual problems faced by foreigners in using Korean online shopping apps and how they attempt to overcome these problems. <Table 3> presents the demographic characteristics of the primary interview participants.

4.2. Second-Round Interviews

After the primary interview, we redefined the research questions and research design. For the second-round interview, we interviewed 32 respondents, excluding the five primary interview respondents, over a period of three months. Among these respondents, seven were non-users (i.e., some of the respondents had previously participated in online shopping but no longer do so). The remaining respondents comprised average and frequent users. Apart from the similarity to information obtained from the primary interview, we focused on users' emotions, such as anxiety, discomfort, and satisfaction, during the interview to examine how shadow work affects users' emotions, thereby leading them to discontinue online shopping. Additionally, we noted the users' behaviors when faced with obstacles or shadow work in online shopping as well as their actions toward shadow work. The collected data were used for further coding and analysis of the GTM.

<Table 3> Demographic Characteristics of Preliminary Interview Respondents

No. (Name)	Age	Sex	Education (Degree)	Employment	Monthly Income (USD)	Marital status	Country	Duration in Korea	Korean Proficiency
1 (A)	34	F	Master	English tutor	2000	No	South Africa	11 years	Excellent
2 (B)	37	M	Master	Company Worker	-	Yes	Prague	1 year	No
3 (C)	39	F	Ph. D.	Researcher	-	Yes	Germany	6 years	Moderate
4 (D)	32	F	Master	Housewife	No	Yes	Australia	7 years	Moderate
5 (E)	30	F	Ph. D.	Student	1000	Yes	India	5 years	Little

4.3. Data Coding

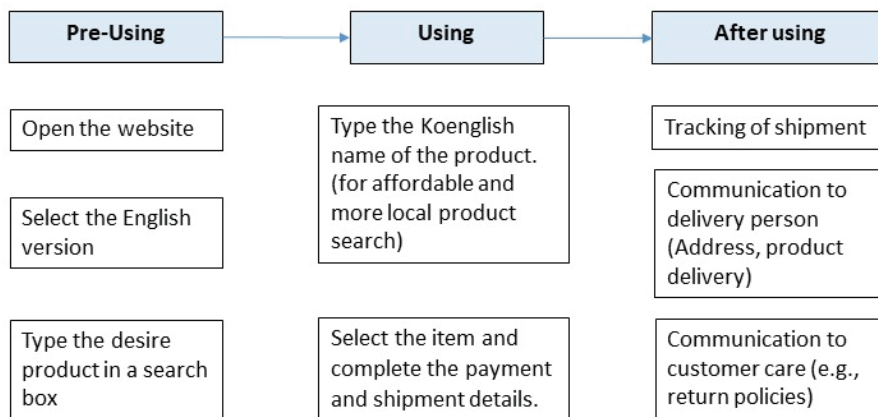
The interviews adopted a conversational style, with each interview being audio recorded and transcribed verbatim using the “Audext” software for further data coding process. After 22 interviews, we have observed data saturation. Therefore, we conducted ten additional interviews as a supplementary set of interviews. However, these additional interviews did not generate any new clues or ideas; hence, we decided that data saturation had been achieved and subsequently, stopped collecting further responses from the respondents (Alvenfors et al., 2022). For the purpose of data coding, we examined each response script thoroughly and manually highlighted common phrases in all the scripts, which we termed as an open code (Wiesche et al., 2017). We categorized the collected phrases (open code) into three main categories: 1) user categories by buying frequency, achievement emotions, and loss emotions, 2) user responses and behavior mechanisms, and 3) buyers' behaviors and product orientation. Next, we divided the interviewee response data into open codes expressing the users' online shopping experiences,

properties that briefly explain the users' emotions, and brief examples of the participants' words (see <Appendix A>). Furthermore, we illustrated the open, axial, and selective codes (see <Appendix B>). Thus, we obtained a total of 14 codes, and after these codes were categorized into the three open code categories using the coding process, we identified seven important categories to use as axial codes, which are suitable for this research.

V. Findings

5.1. Findings Part 1: Occurrence of Shadow Work in the Online Shopping Process

<Figure 3> presents the triggers of shadow work during the pre-use, use, and post-use activities involved in online shopping on Korean shopping sites. Section 5.2 explains how the shadow work operation process affects users' psychological mechanisms and decision making while shopping online. Shadow work may affect the actual product search and purchase intentions of users during the online shopping process.



<Figure 3> Operation Process of Foreigners When Using Korean Online Shopping Sites

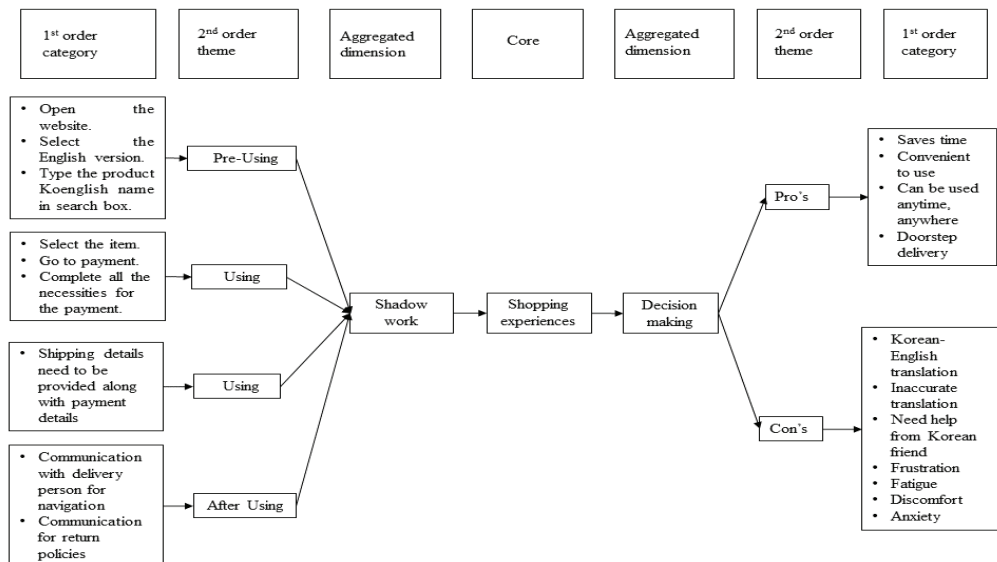
5.2. Effects of Digital Shadow Work on Users' Psychological Mechanisms

According to Illich (1981), shadow work refers to an industrial society's demand for work as a necessary complement to the production of goods and services. The concept of shadow work, developed by Lambert (2015), refers to all the unpaid tasks performed by individuals on behalf of a business or an organization. Additionally, Lambert (2015) claimed that the unpaid tasks we perform in our daily lives tend to be underestimated.

The activities involved in online shopping (i.e., the pre-use, use, and post-use activities) are affected by the digital shadow work faced by shoppers during the online shopping process. An individual's online search intention can be affected by the shadow work involved in the online shopping process. Ultimately, when users' product search intentions change due to shadow work or repetitive tasks, their purchase intentions and decision-making processes are af-

ected as well. There is a positive relationship between online search intention and subsequent purchase intention (Weibin et al., 2021). Depending on the shadow work and shopping experiences faced by users, their decision-making processes involve an evaluation of the pros and cons of their online shopping experiences. Shadow work, along with online shopping experiences, can directly influence users' emotions and purchase intentions.

There are both pros and cons associated with online shopping. The pros of online shopping are that it saves time, is convenient to use, can be used anywhere and anytime, and provides easy doorstep deliveries. Meanwhile, the cons of online shopping are many times users must perform Korean-to-English translations and inaccurate translations that requires users to perform the translation again or ask help from a Korean friend. Owing to these negative aspects of online shopping, users may experience anxiety, awkwardness, guilt, discomfort, and fatigue (Lee, 2021). Happy emotions lead to the continuance of



<Figure 4> Effects of Digital Shadow Work on a User's Psychological Mechanism

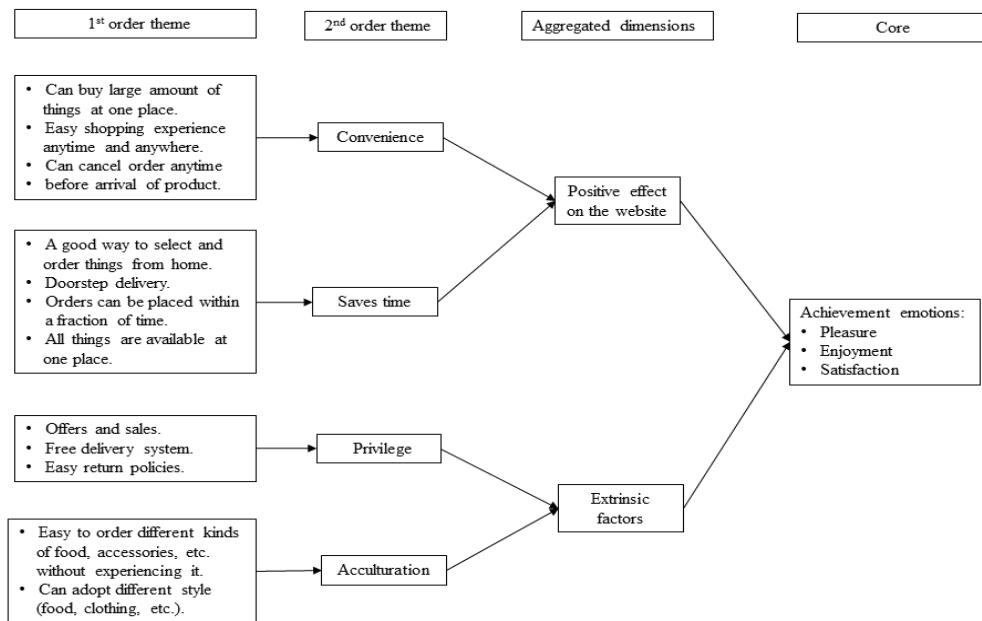
online shopping, while unsatisfactory emotions may lead to discontinue or quit online shopping (Pham, 2020). <Figure 4> shows how shopping experiences and shadow work affect users' decision making and actual product purchase intentions.

5.3. Findings Part 2: Emotion Output

5.3.1. Achievement Emotions

Users tend to prefer online shopping because it is convenient and saves time. Additionally, online shopping provides certain privileges (benefits) such as offers and sales, free delivery, and easy return policies. Many users enjoy shopping using online shopping sites or apps that are similar to offline shopping (Gautam and Sharma, 2020). In recent years, there has been a tremendous rise in the acculturation of foreigners in Korea, especially teenagers,

college students, and adults. The reason for this acculturation may be weather variations and the availability of new trends or fashion in various clothing styles at low prices in the country. In this context, the privileges and acculturation of foreign shoppers serve as extrinsic motivations (Shang et al., 2005) in the online shopping process. Convenience and time efficiency may serve as a utilitarian benefit of online shopping that causes users to associate shopping websites with positive feelings (Babin and Attaway, 2000; Bridges and Florsheim, 2008). Foreigners in Korea prefer to participate in online shopping because it is easy to check and order Korean food or clothing online without communicating with Korean sellers or shopkeepers. Many foreign users staying in Korea have started to adopt the Korean culture in terms of their clothes, food, etc. It is easy for them to order products by reading their descriptions (using a translator) without any prior



<Figure 5> Emotion Output: Achievement Emotions

usage experience; this provides them feelings of pleasure, satisfaction, and confidence in shopping (Pekrun and Stephens, 2010; Lee and Rhee, 2018). These feelings are related to achievement activities; hence, their success and failures both are termed as an achievement emotion (Pekrun and Stephens, 2010). <Figure 5> shows the core emotion outputs regarding the achievement emotions that appear in online shopping.

For clothes, I like to do online as well as offline shopping too. I do buy according to season and of course. I follow the trend, fashion that is going on right now. I have experienced lots of discount when I buy clothes online with ongoing season which makes me happy, but I rarely find discount in offline stores on seasonal clothes especially in malls. (Participant from India, 32 years old, second-round interview)

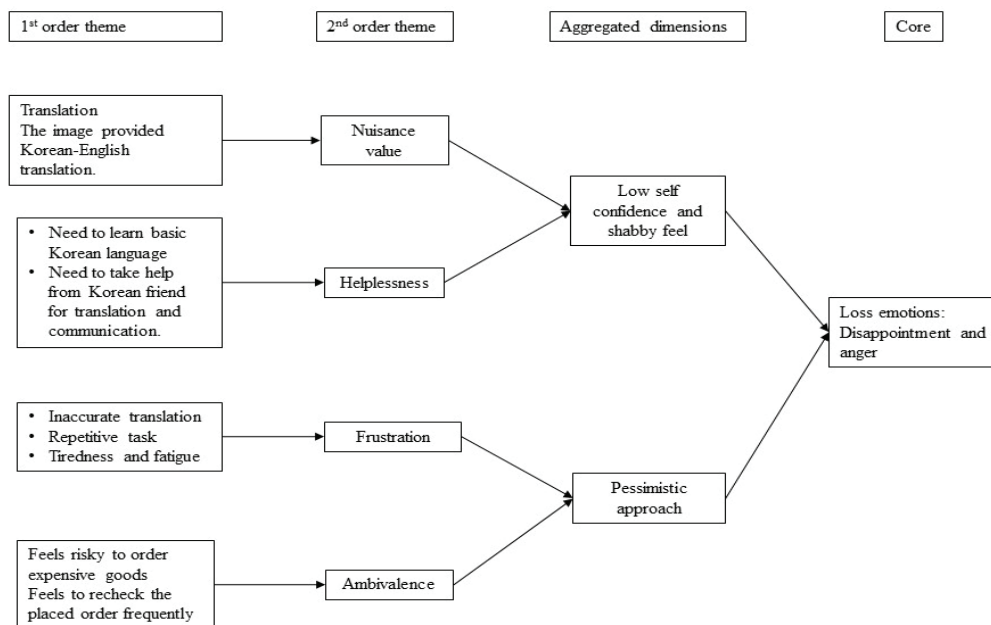
Coupon has good benefits. Uh, for example Rocket delivery. Wow. If I pay a monthly membership, then there are many

items that have free shipping. (Participant from United States, 32 years old, second-round interview)

5.3.2. Loss Emotions

Beaudry and Pinsonneault (2010) described loss emotions as users' emotions toward IT use resulting from the perceived lack of control over the negative outcomes of IT events.

The available Korean-to-English text translation is not always accurate, which causes inconvenience or annoyance for foreigners. Sometimes, foreign users in Korea feel that it is necessary to learn basic Korean, or take help from their Korean friends, to order products, understand the descriptions provided by sellers, or to communicate with customer care. During such shopping experiences, foreign users may feel helpless and pessimistic. Due to inaccurate translations, users have to perform repetitive tasks like



<Figure 6> Emotion Output: Loss Emotions

order confirmation and repeated checks of buying policies, which creates frustration and a dilemma when ordering expensive goods from specific sites due to possible disappointment and anger (Nawaz et al., 2021). These negative emotions of foreign shoppers are closely related to inconvenience and fatigue caused by the digital shadow work they must perform in the online shopping context.

<Figure 6> shows how loss emotions may appear in users' online shopping process. <Figure 5> and <Figures 6> are based on Möhlmann et al.'s (2021) work, which addresses the algorithmic management of work on online labor platforms.

Whenever we want to purchase any product, we look for reviews and all the reviews are in Korean. Thus, we cannot understand whether they put this product is good or bad and it makes me angry many times. (Participant from Germany, 38 years old, second-round interview)

When I want to return the products, I don't get like where I should put my object to return and like what is the procedure. Since returning policy is quite difficult to understand, I usually need help from Korean friend to return my purchase. (Participant from Uzbekistan, 27 years old, second-round interview)

For expensive goods, I would prefer not to buy them online even in the same case for electronic goods and perfumes. I am not sure about the quality of product, inaccurate information I get through translator. That's why I don't feel safe to buy expensive goods online. (Participants from India, 30 years old, second-round interview)

5.4. Findings Part 3: User Responses and Behaviors

Users' behaviors are directly influenced by their emotions. Based on their experience with the online shopping process, users tend to continue, occasionally

participate in, or discontinue online shopping using Korean shopping sites.

Continue: Users with positive experiences of using Korean online shopping sites would continue to use them.

I can use proficiently pretty well the Korean shopping sites, umm... Usually I don't get frustrated while using them. I can find them pretty intuitive and straightforward to use. (Participant from United States, 32 years old, second-round interview)

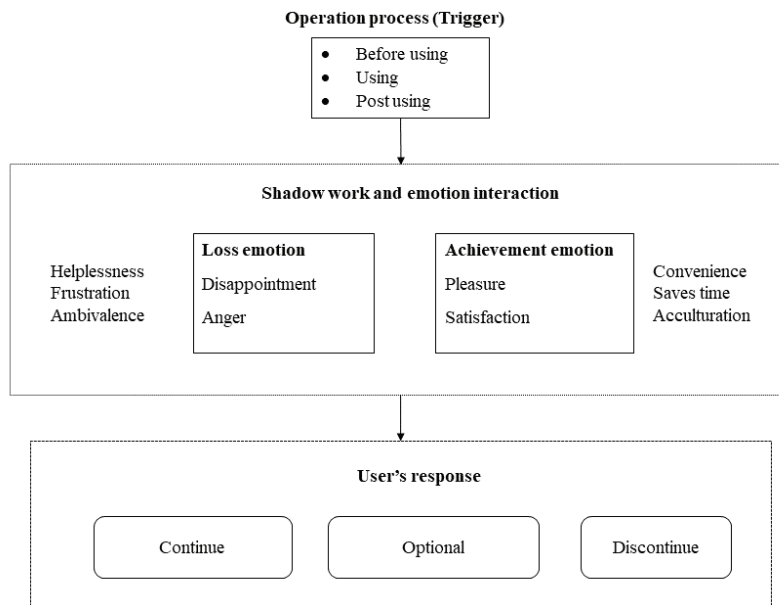
Optional: Users who have mixed emotions (both positive and negative) toward using Korean online shopping sites view these sites as merely an option for shopping.

If I am free, I will prefer to go for outdoor shopping instead of online shopping. Actually, I oftentimes get frustrated and pretty much waste my time to know the new item when I use online sites. Thus, I don't want to waste more time in online shopping. (Participant from Nigeria, 26 years old, first-round interview)

Discontinue: Users who have negative experiences using Korean online shopping sites or apps may reject or refuse to shop using them. <Figure 7> shows how user responses and behaviors are affected by shadow work in the online shopping context.

5.5. Findings Part 4: User Characteristics

Based on data regarding the product-use stages (pre-use, use, and post use) and user experiences obtained from the second-round interviews conducted over a period of three months, we categorized users into frequent, average, and non-users



<Figure 7> User Response and Behavior Mechanism

as shown in <Table 4>. This helped us understand the buying frequency and emotions of users who participate in online shopping. As we noted before, frequent shoppers shop four to five times per week while average shoppers shop two times a week.

5.5.1. Interaction Difficulties Faced by Foreigners while Using Korean Online Shopping Sites or Apps

Communication and Understanding: Communicating with customer service members or delivery persons regarding navigation or product returns is a significant problem for foreigners in Korea. Users often avoid ordering a product displayed on a website if it is not accompanied by a proper description (Palmer, 2002). Few non-Korean native speakers are ready to accept a product delivery as is because they do not want to waste further time on shopping. Product return policies are difficult to understand when they

are provided in Korean by the seller; therefore, some shoppers avoid ordering new items and prefer repetitive shopping based on previous purchases.

I think the biggest improvement I wish to see in Korean shopping apps would be the option of talking to an English consultant, especially regarding international return policies. (Participant from United States, 36 years old, second-round interview)

Once I called customer care, I started with "Hello," and the woman replied to me with "Zam-Shi-Man-Yo" (which means "wait a minute") and cut the call. After that, I tried many times but no one picked up my call again. (Participant from Germany, 38 years old, second-round interview)

Respect and Trust: When users get frustrated with Korean online shopping sites on several occasions, they automatically lose trust in the online shopping process, and this experience is quite similar on Korean shopping sites. Moreover, most foreigners are not

<Table 4> User Types based on Shopping Behaviors and Experiences

User Types		Characteristics
Frequent users (4-5 times a week)	Type 1: Positive	Although they face many problems, these users continue to exhibit positive emotions toward Korean shopping apps. They tend to search online for new products and experience acculturation toward Korean culture. Moreover, they are willing to learn basic Korean to avoid shadow work in online shopping. A majority of them were fluent in Korean (TOPIK Level 5).
	Type 2: Mixed	These users have mixed emotions (positive and negative) toward online shopping and tend to have no better convenient option other than shopping using Korean shopping apps due to their busy schedules. They keep ordering repetitively based on their previous purchases and do not want to try new or unknown products. They are not ready to order expensive goods and usually give neutral and neutral-negative reviews or word of mouth to other people.
Average users (2 times a week)	-	These users have mixed emotions toward Korean shopping sites. A majority of them consider online shopping as a second option and prefer offline shopping. For such users, unnecessary shadow work is the main issue with Korean online shopping sites. A few users repetitively purchase items, while others compare in-store prices with online prices before buying and then decide to purchase. Their buying decisions are strongly influenced by the experiences of their friends and relatives.
Non-users	Type 1: Negative but flexible	These users have used Korean shopping sites once or twice but were disappointed with their experience and quit online shopping. A majority of the responses in this category were based on the users' own negative experiences. If Korean online shopping sites improve, such users may change their opinions toward online shopping.
	Type 2: Highly negative	These users are completely negative toward Korean online shopping sites and have never used them before. They prefer offline shopping and feel that it is important to experience a product on one's own before purchasing.

ready to take the risk involved in ordering new or unknown products or products that have a complicated description on Korean online shopping sites.

I feel disrespected despite my several requests to customer care. Since they do not provide the product description, I feel like they don't respect me and are not ready to understand my issues. (Participant from Nigeria, 29 years old, second-round interview)

5.6. Findings Part 5: Theoretical Framework of Shadow Work in Korean Online Shopping Sites for Foreigners

5.6.1. Intervening Conditions

Buyers tend to shop on the basis of the in-

formation, experience, necessity, price, and novelty (or innovativeness) of the product (Kwahk and Ji, 2008). The product information provided on a website plays an important role in the buying process since it clearly states the quality of product, which makes the buying process easy for users (David, 2002). The self-use experience or other people's experiences about a product can give users the confidence to repurchase the item. Buyers may check and compare the prices of selected products and go with the affordable products (Reibstein, 2002). Some users always search for novel products that are newly launched or rarely available in the market. Therefore, information, experience, price, and novelty (innovativeness) are the major drivers of the online buying process.

5.6.2. Negative Emotions

Disappointment and anger are the negative emotions that may affect users' intentions or attitudes toward online shopping when using Korean online shopping apps (Rao et al., 2021). When a user is disappointed and angry with his or her shopping experience, he or she may get frustrated and lose interest in online shopping.

When there are certain problems like payment problems, I get angry due to these problems. I prefer not to continue the online shopping but go outdoor shopping. (Participant from India, 33 years old, first-round interview)

5.6.3. Positive Emotions

When a user is happy and satisfied with his or her purchase, he or she continues shopping with the specific site and may recommend it to others.

I will definitely continue shopping with Coupang as it is pretty much convenient and seamless for me. (Participant from United States, 31 years old, second-round interview)

5.6.4. Exploration Experience

When foreign users find a desired product after an extensive search on Korean online shopping sites, it builds their confidence as they experience product search satisfaction. Rewards, offers, and sales encourage foreign users to shop more often, which can further attract them to online shopping.

I was searching for a halal food shop nearby; the shop is pretty far from my home. But now I buy halal food online with fast doorstep delivery and I am extremely happy with it. (Participant from Pakistan, 36 years old, first-round interview)

5.6.5. Contextual Conditions with Shopping Experiences

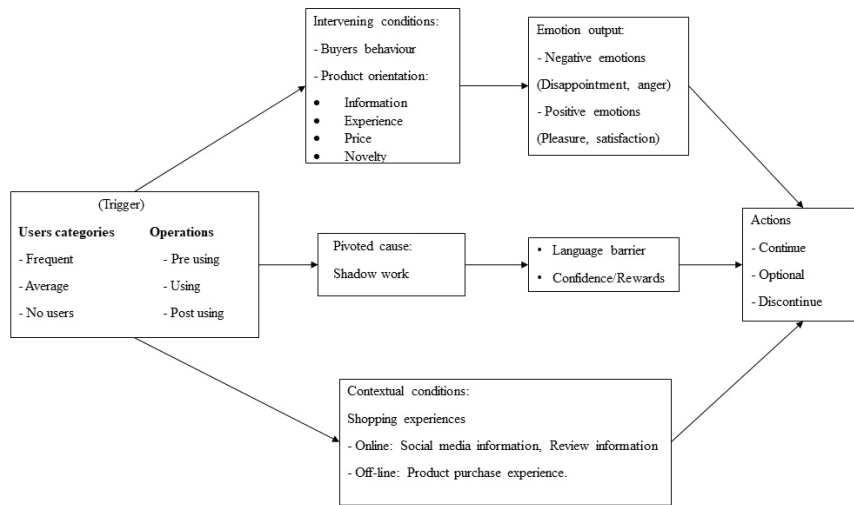
Online: The information that users obtain from social media and online reviews (Chatterjee, 2001; Kim et al., 2008) may influence their online shopping experiences. Moreover, the information provided by sellers about products can significantly affect users' buying behaviors and shopping experiences.

Before buying any product online, I read the reviews posted by foreigners. I don't buy toothpaste without reading the posted reviews. (Participant from India, 25 years old, secondround interview)

Offline: Both previous and actual online shopping experiences can have an impact on the shopping habits of individuals (Shim et al., 2002). If the online shopping process becomes too lengthy and complicated, individuals may prefer to purchase things offline and may discontinue online shopping (Park and Lee, 2017).

I feel that I waste too much time with online shopping sites, and I would have to call my friend for help, asking him about a product that I want to buy. If he gives me positive feedback on the product, I purchase the product via online sites. If not, I stop the shopping apps and go out to shop. (Participant from Uzbekistan, 29 years old, first-round interview)

The theoretical shadow work framework that integrates the seven main categories (corresponding to the axial codes in <Appendix B>) is presented in <Figure 8>, wherein product orientation and buyer behaviors act as intervening conditions that can create negative as well as positive emotions in users' minds. When frequent, average, and non-users face shadow



<Figure 8> Theoretical Framework of Shadow Work in the Online Shopping Process of Foreigners

work in the online shopping process, we can identify the barriers and benefits experienced by users and the type of actions undertaken by users in online shopping. Additionally, the contextual conditions of this study address the parameters applied by users when making decisions about their online and offline product purchase experiences.

VI. Discussion and Conclusion

6.1. Discussion of the Findings

The findings of this study show that digital shadow work affects not only the shopping experiences of users but also their decision making when using Korean online shopping apps. User emotions (loss and achievement) can negatively (disappointment and anger) and positively (pleasure and satisfaction) affect users' purchase decisions, leading to their decision of whether to continue or discontinue online shopping, or use it as another alternative (option) for purchasing desired products (Javenpaa and Todd,

1997). Users' emotions can be attributed to digital shadow work, which affects their individual responses and behaviors. Convenience, easy accessibility, perceived ease of use, and usefulness are the key factors that influence users' decision making in the online shopping process (Kohli et al., 2004). Inaccurate translations and repetitive tasks can lead to helplessness, fatigue, and discomfort, which has a negative impact on users' shopping experiences and behaviors. Shadow work is a nuisance that leads to helplessness, which can lower users' confidence, and frustration, which creates pessimistic attitudes toward shopping. Moreover, factors like information, experience, price, and novelty act as intervening conditions in buyers' behaviors, and due to shadow work, users may have negative attitude toward online shopping.

To enable hassle-free and satisfactory shopping, users search for social media advertisements and information, i.e., what a seller is providing, and reviews provided by other users (Chatterjee, 2001; Kim et al., 2008). However, due to digital shadow work, inaccurate translations, and misleading information, it becomes inconvenient for users to obtain actual

product information, which leads to frustration and sometimes causes users to discontinue online shopping. Furthermore, the language barrier is one of the critical causes for digital shadow work in Korean online shopping sites.

If Korean online shopping sites provide a good English language version of their websites, it would help foreigners to shop independently (without help from their Korean friends) and improve their product exploration experience while shopping online.

6.2. Implications for Research and Practice

Due to the COVID-19 pandemic, online shopping has gained popularity in our daily lives. Although online shopping provides shoppers with convenience, it increasingly requires shoppers to perform shadow work while shopping, which generates both achievement and loss emotions. However, few studies have examined the emotional responses of foreign users to the digital shadow work involved in online shopping. Therefore, this research makes both theoretical and practical contributions.

From an academic perspective, this research explores the concept of digital shadow work and expands upon the existing barriers in online shopping research. First, this study focuses on the components of digital shadow work by exploring the emotions and responses of users to shadow work. Additionally, this study proposes an integrated model, which specifies the relationships between digital shadow work and the achievement/loss emotions of users, as an initial step to diving into users' psychological states in the online shopping context. Digital shadow work plays a critical role in increasing the negative emotions of online shoppers who are foreigners in South Korea. Otherwise, digital shadow work may be considered as a moderator which can accelerate the effect

of affecting factors on their emotions in the online shopping context. We also found that for non-Korean speakers, the language barriers may be the major trigger for digital shadow work during their online shopping although the English version is available in the sites. Further, this study result may help Korean online shopping sites to understand the actual issues and problems in online shopping for foreigners in South Korea which is not clearly studied yet. From the findings of this study, we may find out the exact emotions of users and user categories based on their shopping preferences, expectations, and reactions behind their emotions during the use of Korean online shopping sites.

Second, this study mainly focuses on the customers' emotions generated through shadow work and found that the working mechanism of shadow work is rather complicated due to the various emotions experienced by foreigners during online shopping activities. There may be a direct relationship between emotions and shadow work. Therefore, this paper contributes to future research by considering the emotional factors of users when examining digital shadow work.

Third, we discussed how emotions are generated in shoppers' mind due to the excessive shadow work associated with the online shopping context. The results of this study contribute to the understanding consumers' needs as well as how customers' psychological states and overall processes work in the online shopping context. Additionally, this study deals in detail with both the emotional outputs and actions of users during online shopping.

Finally, the relationship between shadow work and online shopping usage and the effects of this relationship on user behavior have been explored in this study. We suggest that future online shopping research pay more attention to shadow work and strat-

egies to eliminate its negative effects during the online shopping process.

This study differs from previous online shopping studies in that it considers the difficulties (shadow work) that foreign users experience in shopping due to language barriers relative to native users in Korea. Moreover, this study academically links foreign shoppers' emotions/behaviors in the online shopping context and the concept of shadow work.

Additionally, this research provides some practical suggestions for businesses. We suggest that non-English shopping websites should simplify their registration, returns, and payment processes as well as their overall communication process to make shopping more convenient for foreign users. Furthermore, they should lower the frequency of asking for one-time passwords (OTPs), which is the most dissatisfying part of the online shopping process. Facilitating easy understanding by providing an English version of online shopping sites is necessary to acquire the niche market of foreign consumers in non-English speaking countries. The use of chat GPT services may be helpful to mitigate the foreign online shoppers' level of shadow work caused by language barriers.

Ease of use is a very critical aspect of website design for foreigners. Apart from that if online shopping sites think to work on shadow work in online shopping usage; it may increase customers' revisit and reduce the customers' perceived shadow work, lowering their psychological resistance and barriers to the first use of the system. This can also reduce the users' dilemma and allow their online shopping to be more happy, relaxed, and enjoyable. This may alleviate the level of shadow work that customers might perceive as transfer of work.

6.3. Conclusion and Directions for Future Research

In this study, we categorized foreign online shopping users into three groups, namely frequent users, average users, and non-users, and conducted sequential and systematic interviews with them. Subsequently, we examined the forms in which digital shadow work appears and changes users' emotions and behaviors while shopping online on Korean shopping sites using the GTM. None of previous research has been done on the actual cause of shadow work in online shopping for foreigners in Korean shopping sites. This research is based on qualitative studies for users' emotion, behavior and reactions when they face shadow work in online shopping by using GTM techniques which gives unique contribution to the research field.

This study examines the emotions and responses of foreign users toward Korean online shopping sites. This research is qualitative in nature; thus, future research should utilize mixed or quantitative methods. Additionally, future studies can compare foreigners who are fluent in Korean with those who are not fluent to determine whether language is the principal cause of shadow work or if there are other possible causes of the shadow work involved in online and mobile shopping.

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<Appendix A> Users' Experiences, Emotions, and Behaviours While Using Korean Online Shopping Apps/Sites

(1) User Categories by Frequency of Purchase, Achievement Emotions, and Loss Emotions

Open code	Properties	Examples of participants' words
1) User categories: <ul style="list-style-type: none"> • Frequent (shopping 4-5 times a week) • Average (shopping 2 times a week) • No buyers 	<ul style="list-style-type: none"> - Very essential for users (frequent buyers of utility products) - Asking for help from friends - Looking for better options (No buyers) 	<ul style="list-style-type: none"> - Not afraid of using or ordering new products (frequent buyers) - Risk-taking ability (frequent or average buyers) - Ready to bear losses, or make incorrect order (frequent or average buyers) - Some users feel entitled (average or no buyers)
2) Achievement emotions 3) Easily accepting change [positive aspect]	<ul style="list-style-type: none"> - Comfortable with using Korean websites or apps - Learning a new language 	<ul style="list-style-type: none"> - Happy to shop based on the image attached to product description without properly understanding the content [positive aspect] - Ready to accept the product whatever it is (even wrong products are acceptable) [mixed emotions]
4) Loss of emotions [negative aspect]	<ul style="list-style-type: none"> - Frustration - Problems - Uncomfortable situation - Needs help from Korean friends - Awkwardness - Feeling shame in accepting the help of Korean friends 	<ul style="list-style-type: none"> - Emotional outburst - Experiencing anger after receiving wrong products - Low self-confidence - Feeling shabby - Feeling helpless - Feeling guilty for bothering Korean friends when asking them to take time to help users - Shopping perks do not motivate foreign users

<Appendix A> Users' Experiences, Emotions, and Behaviours While Using Korean Online Shopping Apps/Sites (Cont.)

(2) Users' Responses and Behavior Mechanisms

Open code	Properties	Examples of participants' words.
1) Seeking experiential learning	<ul style="list-style-type: none"> - Seeking authenticity - Feeling confident - Exploring excitement - Eagerness to order - Great need for products 	<ul style="list-style-type: none"> - Seeking to learn Korean - Confident - Learning things on one's own - Difficulty in understanding - Need to manage or learn things on one's own
2) Experiencing a need for online shopping.	<ul style="list-style-type: none"> - Seeking convenience - Saving time - Avoiding communication with shopkeepers - Seeking goods at low prices 	<ul style="list-style-type: none"> - Doorstep delivery - Express delivery - Attracted by exciting festive offers and sales - Busy working hours
3) Feeling unnecessary shadow work or repetitive tasks is a waste of time	<ul style="list-style-type: none"> - Translation - Product search - Understanding accurate translation - Payment check 	<ul style="list-style-type: none"> - Frustrating to perform repeat checks for description translation - Cannot order new things online although users wish to purchase new things - Anxiety - Forced purchases without accurately understanding the description and just to fulfill a need - Feeling the need to stop shopping - Feeling disconnected - Nervous about what's going to happen - Poor past shopping experience - Initial research needed before ordering - Difficult compare different options
4) Feeling insecure	<ul style="list-style-type: none"> - Complicated return policy - Fear of being misled or incorrect when purchasing products - No belief in virtual shopping 	<ul style="list-style-type: none"> - Sometimes feels risky to order expensive goods - User ambivalence - Feeling of forced buying - Expecting better return policies - Seeking ease of use - Expecting real and trustworthy products - Difficult to buy products that users cannot touch, smell, or feel, e.g., perfumes
5) Making observations and highlighting shadow work	<ul style="list-style-type: none"> - Review-based shopping - Shopping based on recommendations from friends - Sales and discount-based shopping - Shopping based on past purchase experiences - Advertisement-based shopping 	<ul style="list-style-type: none"> - Extra cancelation fees - Feeling of disappointment - Low self-confidence

<Appendix A> Users' Experiences, Emotions, and Behaviours While Using Korean Online Shopping Apps/Sites (Cont.)

(3) Buyers' Behavior and Product Orientation

Open code	Properties	Examples of participants' words
1) Buyer behavior based on product orientation	<ul style="list-style-type: none"> - Google translator - English tutorials for beginners 	<ul style="list-style-type: none"> - Initial reading of reviews before purchase - Purchasing based on past shopping - Festive offers as a perk for users to shop online - Purchasing products recommended by friends
2) User anticipation	<ul style="list-style-type: none"> - Quality differences - Size issues - Language barrier - Fear of incorrect orders 	<ul style="list-style-type: none"> - Seeking user-friendly, social, and smart shopping websites or apps
3) User dilemmas while purchasing	<ul style="list-style-type: none"> - Feeling disconnected - Nervous about what's going to happen - Poor past shopping experiences - Initial research is needed before ordering 	<ul style="list-style-type: none"> - Fear of being mistaken during product selection due to inaccurate understanding of product details, resulting in confusion
4) Expressing dissatisfaction	<ul style="list-style-type: none"> - Difficult to translate each word - Feeling like discontinuing shopping - Translated text not always accurate - Very rigid websites - No easy translation - No accurate translation available 	<ul style="list-style-type: none"> - Feeling of anxiety - Sadness and dissatisfaction - Sometimes, regret
5) Craving immediate action and being motivated by feeling appreciated	<ul style="list-style-type: none"> - Difficult to get time for a seamless shopping experience - Cannot enjoy shopping 	<ul style="list-style-type: none"> - Feeling uncomfortable - Upset - Disappointment and anger

<Appendix B> Open Coding, Axial Coding, and Selective Coding

Open code	Axial code	Selective code
<ul style="list-style-type: none"> - User categories - Need for online shopping (Frequent or average buyers) - Craving immediate actions (Frequent or average buyers) - Feeling that online shopping is a waste of time (No or average buyers) 	<p>User categories (Trigger) Frequency of shopping: Frequent/Average/None Operations: Pre-use, use, and post-use</p>	<p>Wanting to make changes and lower the amount of shadow work in Korean online shopping sites or apps</p>
<ul style="list-style-type: none"> - Achievement emotions - Accepting changes Pleasure and happiness toward online shopping Waiting for exciting offers Ease of use and convenience [Positive aspects] 	<p>Emotion output Achievement emotions and loss emotions</p>	
<ul style="list-style-type: none"> - Loss emotions - Feeling that shopping is a waste of time due to unnecessary shadow work or repetitive tasks - Feeling insecure [Negative aspect] 		
<ul style="list-style-type: none"> - Users' anticipation - Users' dilemmas while purchasing things 	<p>Shadow work; Language barrier Effects of language barrier and shadow work on users' behaviors</p> <p>Actions Silently blaming websites or apps for dissatisfaction and limited freedom of choice; sometimes discontinuing shopping and searching for alternatives</p>	
<ul style="list-style-type: none"> - Expressing dissatisfaction 		
<ul style="list-style-type: none"> - Buyers' behavior based on product orientation 	<p>Buyers' behavior and product orientation Being motivated by feeling appreciated</p>	
<ul style="list-style-type: none"> - Wanting experiential learning 	<p>Shopping experiences Expressing wishes to enjoy the shopping process</p>	

◆ About the Authors ◆



Pooja Khandagale

Pooja Khandagale is a Master of International Business Management (MBA) from AAU, Gujarat, India. She joined her doctoral degree program at the Department of Digital Future Convergence Service Interdisciplinary Program of Chonnam National University, Gwangju, South Korea. She has presented her paper with digital shadow work in the International Conference on Electronic Commerce (ICEC) 2022 held in Daegu, South Korea. Her research interests include knowledge sharing and digital shadow work.



Joon Koh

Joon Koh got his Ph.D. degree at KAIST and worked for Samsung Electronics. He is currently a professor of Department of Business Administration at Chonnam National University. He is currently the Editor-in-Chief of *Information Systems Review*. He received academic awards from the Korea Management Association, the Korea IT Service Association, and the Korea Management Information Systems Association. He has published papers in academic journals such as CACM, IJEC, JAIS, ECRA, JKM, CHB, IJHRM, JCIS, ESWA, Scientometrics, and I&M. He also presented his papers at academic conferences such as ICIS, ECIS, HICSS, and PACIS. His main research fields are digital shadow work and the knowledge ecosystem.

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