SERVDES 2023

COPPE | UFRJ Universidade Federal Do Rio De Janeiro
DAD | PUC-Rio Pontifícia Universidade Católica Do Rio De Janeiro
Livework

A user experience analysis for senior citizens on mobile shopping service: case study of big three companies of South Korea

Wonyoung Lee[1], Hyemin Lee[1], Chaemoon Yoo[1], Daeun Kim[1], Younghwan Pan[1]
franlee0405@kookmin.ac.kr, hyeminest@gmail.com, chaemoon10@kookmin.ac.kr,
kimdaeungrace@kookmin.ac.kr, peterpan@kookmin.ac.kr
[1]Kookmin University, Department of Smart Experience Design, South Korea

Abstract

This research is a case study on user experience analysis for senior citizens on mobile shopping services, focusing on the big three companies of South Korea. The research aims to broaden the view of service designers in creating inclusive design for senior citizens globally, by conducting user experience analysis for all generations, including senior citizens. The study consists of literary research, heuristic evaluation based on user experience design principles, and user interview for a deeper and on-site understanding of senior citizens' user experience. The results suggest key considerations for the user experience design of senior citizens and common challenges faced by the user group.

Keywords: service design, mobile shopping service, user experience, senior citizen

Introduction

Senior citizen, people over 65 years old, is an emerging user group in service design. People born between 1946 to 1964, the 'Baby Boomer' generation are now reaching the age of 59 to 77 and consist of the majority of senior citizen group. The generation has large economic assets with significant purchasing power. They value experiences that cater to their lifestyle and seek a better quality of life. Due to the increasing number of baby boomers reaching senior citizen age, global businesses are focusing on them as a prospective target. COVID-19 has further increased their use of digital services for health and communication needs (Sixsmith, et al 2022). According to the 2022 Report on the Digital Divide by the National Information

Society Agency of South Korea, 93.7% of people in their 60s owns mobile smart devices. However, only 36.8% of people within the group can use eCommerce

SERVDES
2023

COPPE | UFRJ Universidade Federal Do Rio De Janeiro
DAD | PUC-Rio Pontifícia Universidade Católica Do Rio De Janeiro
Liywork

services. Senior citizen also shows low utility rate on digital services such as social network, bank and finance, online economic activity, etc. The rapid digitalization since the pandemic exacerbated the digital inequalities (Morrison, et al, 2023). This calls for research on better digital experience design for senior citizens.

The service design in South Korea is implemented in various industries such as finance, healthcare, e-commerce, and culture. The pandemic has accelerated the adoption of digital services, and the country has gained international recognition for its effective use of digital service solutions during lockdowns. Coupang, Naver, and Kakao are the big three companies with digital service products that lead digital service design in South Korea. They have a wide service portfolio including mobile shopping, chat messenger, search engine, etc. Recently, these companies have made some changes targeted towards senior citizens in their eCommerce service. Meanwhile, the current main users of their eCommerce services are users in their 20s and 30s. As the use of senior citizens is expected to increase globally, it is necessary to analyze the service and design a mobile shopping service that can satisfy the service experience of senior citizens.

This research aims to highlight and analyze the status quo of user experience provided by Korea's big three mobile shopping services for senior citizens. However, rather than applying an exclusive guideline for senior citizens, this research has the objective of conducting user experience analysis for all generations including senior citizen users. This would broaden the view of service designers to include senior citizensd in the already existing mobile service experience.

The research begins with literary research on senior citizens' mobile shopping service experience. Then it presents a service overview of the big three companies. Next, heuristic evaluation is conducted with analysis elements based on the basic UX design principles. The research will be followed by a user interview for a deeper understanding of senior citizen's user experience.

Background

Mobile Shopping Service

A mobile shopping service is an online platform or application that allow users to browse and purchase products from mobile devices such as smartphone or tablet. These services typically offer a wide range of products such as electronics, fashion, beauty, home goods, groceries, etc. Examples of global mobile shopping services are Amazon, Ali-pay, and eBay. Coupang, NAVER Shopping, and Kakao Gift are the big three mobile shopping services with recent changes towards senior citizen users.

SERVDES 2023

COPPE | UFRJ Universidade Federal Do Rio De Janeiro
DAD | PUC-Rio Pontifícia Universidade Católica Do Rio De Janeiro
Livework

Each company has provided changes in product categories and shopping content for senior citizens, which will be analyzed further in the service design overview section.

Coupang, the leading online shopping service company in South Korea with a 40.2% eCommerce market share, offers a wide range of online services including shopping, delivery supply chain, food delivery, on-demand content platform, and mobile payment services (Kim, 2023). The company went global in 2021 by being listed on the New York Stock Exchange, and its growth rate accelerated by 55% compared to 2019 (Savitz, 2021). NAVER is the largest search engine company in South Korea, and it has a wide portfolio such as webtoon, news shopping, and more. NAVER Shopping is the company's eCommerce platform with a 29.1% of market share in Korea and 20 million monthly active users. Kakao, the IT company with Korea's most popular mobile messenger app, is expanding its services to eCommerce, mobility, finance, games, and more based on its 94.4% mobile messenger market share (Catch, 2022).

Senior Citizen

Senior citizen is a term generally used to refer to the elders. Oxford Dictionary defines a senior citizen as 'an elderly person, especially who is retired and living on a pension. The International Association of Gerontology defines a senior citizen as a person in the combinational process of physiological, physical, environmental, psychological, and behavioral changes due to the human process of aging.

According to World Health Organization, senior citizens are elders aged 65 years or older that pursue to keep their quality of life through health management, and social participation (WHO, 2002).

Country	Age	Criteria
South Korea	65 years old or older	Official age of retirement
United States	65 years old or older	Age eligible for social security benefits
European Union	65 years old or older	According to Eurostat segmentation
Brazil	60 years old or older	According to Brazilian Institute of Geography and Statistics

Table 1. Age of senior citizen according to different nations (Reorganized by the writer, 2023)

The specific criterion for senior citizens is usually defined by age, which differs between every country's society, culture, and welfare policies (Table 1). Various

terms according to different criteria are used, such as new senior, senior citizen, grey, golden ages, super age, active senior, elder, silver, etc.

As of 2019, the baby boomers accounted for 32.3% of the total Korean population and more of the population is becoming senior citizens every year (Cho, 2020). This generation of large demographic is characterized by economic prosperity and the resulting significant purchasing power. The boomers strive for keeping good health conditions and pursue reaching higher quality of life. They make rational purchase behaviors that cater to their needs and benefits. Another quality of senior citizens is that they tend to prefer a retail channel or a brand that they put their trust in (Parment, 2013). This brings changes in business sectors also. The most affected business sectors are commerce, healthcare, entertainment, and finance as listed in Table 2. The sub-sectors explain specific areas of business that senior citizens are highly interested in.

The online shopping business within the commercial sector increased greatly in South Korea, especially after the pandemic. The eCommerce market shows an increase of 15% to 20% every year from 2017 to 2022 (Image 1), while the price of online card payments made by people 60s and over increased by 55% from 2019 to 2020 (Hana Professional Consultant of Financial Business, 2022).

This rise in mobile shopping can be attributed to the characteristic of baby boomers, who are now entering their senior years. This group shows frequent users of eCommerce services offered by companies such as Coupang, NAVER, and Kakao, and this trend is expected to continue to grow in the coming years. This observation suggests that these companies should take measures to further cater to the needs of the senior citizen group.

SERVDES 2023

COPPE | UFRJ Universidade Federal Do Rio De Janeiro
DAD | PUC-Rio Pontifícia Universidade Católica Do Rio De Janeiro
Livework

Commerce	Healthcare	Entertainment	Finance
Food • Balanced nutrition • Easy to chew and swallow	Medicine and Medical Supply • Medical healthcare • Health supplements	Culture • TV show and entertainment contents • Sports	Asset and pension management • Asset management • Pension management
Cosmetics & Fashion • Anti-aging products • Easy-to-open product packages	Medical device • Wearable device for health data collection • Supportive device for physical impairments	Leisure • Tourism package	Housing • Home furnishing for safety and efficiency of living environment • Housing plan for asset management
Daily Supplies • Home appliances • Health management • Safety supply			

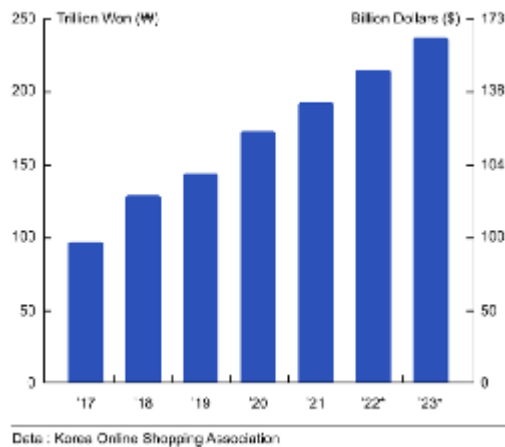Table 2. Business sectors with change for senior citizens (KISDI, 2021)

Image 1. Korean eCommerce market growth progress: (Hana Professional Consultant of Financial Business, 2022)

Literature Review

Park et al (2023) conducted user experience research on analyzing mobile shopping experience and design guidelines for the active senior. The research divides senior users' mobile shopping process into four different stages: shopping motive creation,

SERVDES 2023

COPPE | UFRJ Universidade Federal Do Rio De Janeiro
DAD | PUC-Rio Pontifícia Universidade Católica Do Rio De Janeiro
Livework

search, comparison and decision, and purchase. The research also suggests five design guidelines for better user experience: clear recognition, accurate explanation, errorless task, trust, and social purchase.

Choi and Lee (2020) researched on improving mobile shopping for active senior customers in the fashion industry. The research conducts user surveys, interviews, and usability evaluations based on the principles of Peter Morville's honeycomb theory. Results suggest that providing flexible forms of payment services can prevent errors of senior users.

Service Overview

To enhance the user experience of users including senior citizens, this research focuses on conducting UX analysis on Coupang, Naver Shopping, and Kakao Gift, which are the big three mobile shopping services of South Korea. This chapter explains the changes seen in each service concerning senior citizens' entry into the use of mobile shopping services.
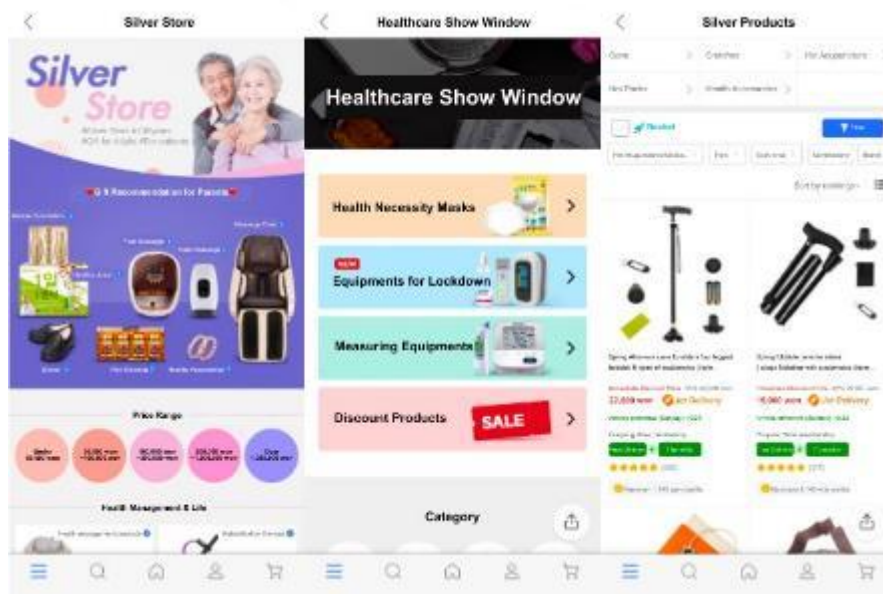
Service overview of Coupang

Image 2. Translated image of Coupang 'Silver Store'

Coupang's mobile shopping application has over 10 million downloads. 'Rocket Delivery' is its standout feature, ensuring one-day delivery by checking the user's nearest warehouse's stock. Since 2018, Coupang started offering services for senior citizens called the 'Silver Store' section in its application. The page provides products

for senior citizens such as daily supplements, self-massage devices, canes, and clothing. However, it is difficult to navigate to this page from the main page.

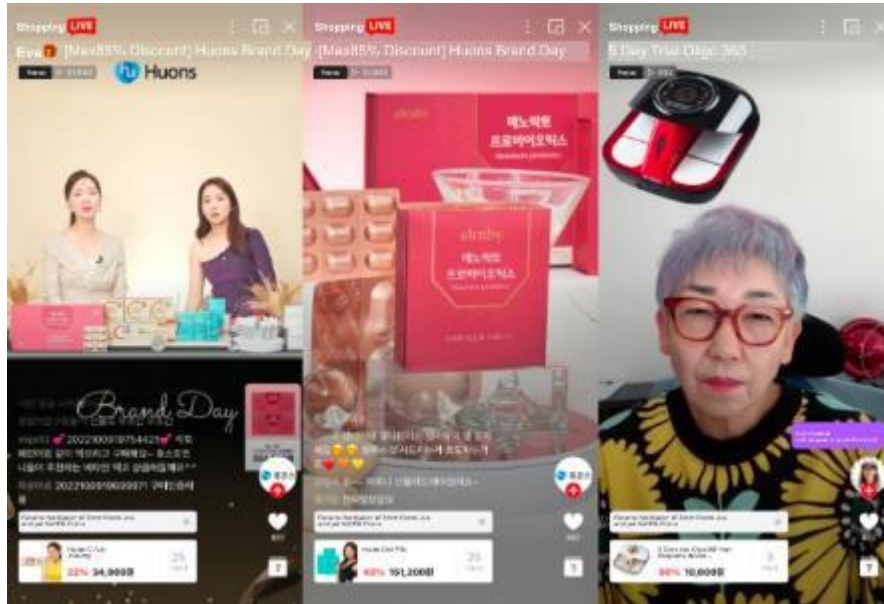**Service overview of NAVER Shopping**

Image 3. Translated image of NAVER Shopping LIVE with senior show host

NAVER possesses a notable characteristic of attracting a large number of users to its shopping service via its search engine. Furthermore, it offers information on price comparisons for various shopping platforms, including the NAVER Shopping service. This feature attracts the user who is seeking price comparison in purchase decisions. NAVER Shopping launched 'NAVER Shopping LIVE' in 2021. It provides a live broadcasting shopping service resembling TV home shopping, which gained interest from users aged 40 and above. To target senior citizens, the brands hire show hosts of similar age to promote products targeted towards senior citizens. Through the chatting function in the platform, the user is also able to make communications with the show host during the live show.

SERVDES 2023

COPPE | UFRJ Universidade Federal Do Rio De Janeiro
DAD | PUC-Rio Pontifícia Universidade Católica Do Rio De Janeiro
Livework
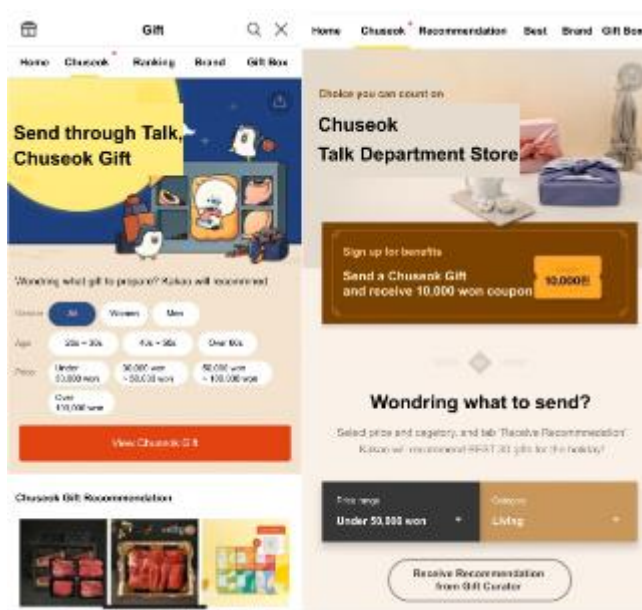
Service overview of Kakao Gift

Image 4. Translated image of Kakao Gift with holiday promotion page, banner, and contents

Kakao Gift is an eCommerce service within the Kakao Talk mobile messenger application that introduced the concept of gift-giving in eCommerce service. The service allows users to easily choose, purchase, and send gifts to friends via Kakao Talk. It offers a range of products such as mobile gift cards, food, fashion, beauty, living goods, and flowers. Although more than 90% of people use Kakao Talk, the core users of gift services are between 20 to 40 years old. However, the service has seen an increase in users over 50 years old since COVID-19. To meet the growing needs of senior citizens, Kakao Gift held holiday discount promotions and events, featuring products such as golf balls and nutritional supplements.

Comprehensive Analysis

Coupang, NAVER Shopping, and Kakao Gift have implemented various measures to meet the needs of senior citizens, including creating separate categories and developing senior-friendly promotions and contents. However, the core target user of these mobile shopping services is still digital natives in their 20s and 30s. As a result, even if new products and categories are added for senior citizens, the satisfaction of seniors may be hindered by the mobile user interface design that does not consider their needs.

SERVDES 2023

COPPE | UFRJ Universidade Federal Do Rio De Janeiro
DAD | PUC-Rio Pontifícia Universidade Católica Do Rio De Janeiro
Livework

Heuristic evaluation based on UX design principles

Providing a mobile shopping service that satisfies all users is impossible. Yet, it is more than possible to enhance the overall user experience for increased accessibility and closer physical and mental distance. The philosophy of Universal Design emphasizes accessibility for all users, including senior citizens. In this section, a user experience analysis of Coupang, NAVER Shopping, and Kakao Gift is conducted through heuristic evaluation and user interviews. The study focuses on analyzing the first main screen of each service, as it serves as the cover and first impression of the service.

UX Design Principles and analysis element

The criterion for conducting heuristic evaluation is based on the UX design principles defined by Peter Morville's User Experience Honeycomb Theory (Wesolko, 2022). Among the honeycomb principles, the principles of accessible, useful, usable, and valuable are used.

1) Accessible: Whether the user can easily find the service or access the service

2) Useful: Whether the service is useful to the user, or provides useful information to the user

3) Usable: Whether the service is easy to use and convenient

4) Valuable: Whether the service provides a pleasurable experience or feels attractive to the user

From these four UX design principles, six specific elements of analysis were derived. For the principle of accessible, this study focuses on factors that allow users to access the service without feeling lost or distant. The accessible principle focuses on whether appropriate UX writings are used, whether easy-to-understand and withincontext information is provided and whether an adequate amount of information is well delivered through visual scale and contrast. Useful and usable principles focus on whether the major functions and menu are clearly understandable and can perform well according their goal through appropriate layout and structure. It also considers whether it provides appropriate feedback that informs the system status according to the user's input. Valuable principle considers whether the service is found valuable to the user, through pleasurable and helpful information and content that supports the user's needs. Below is the UX design principle and the elements derived.

A) Accessible

- UX Writing

- Rationality

- Scale & Contrast

B) Useful & Usable

- Layout & Structure

- Feedback

C) Valuable

- Pleasurable

UX design principle analysis of Coupang
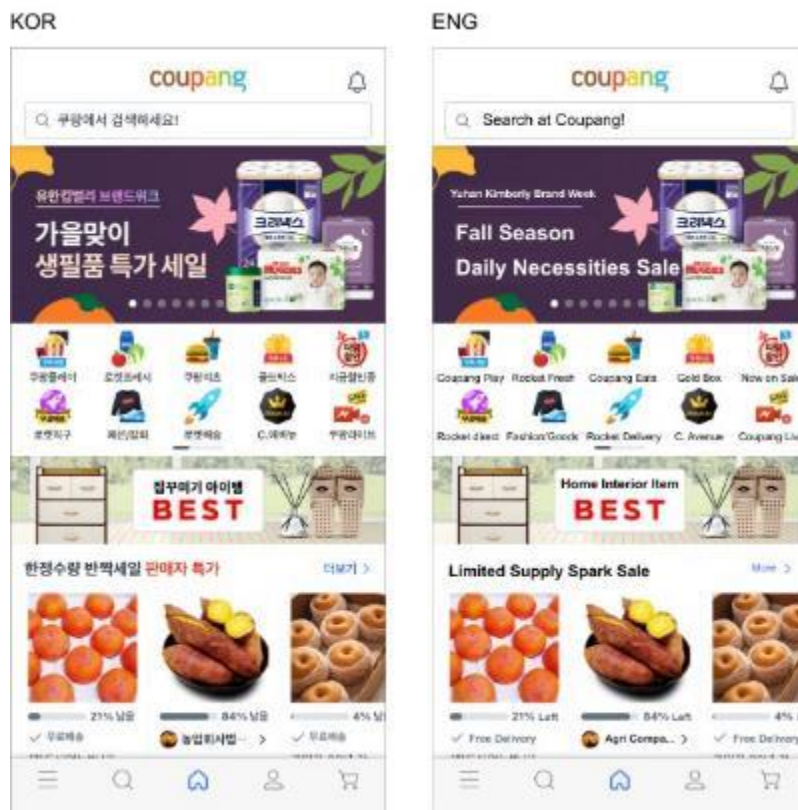
Image 5. Coupang original and English translated main page

Wonyoung Lee, Hyemin Lee, Chaemoon Yoo, Daeun Kim, Younghwan Pan
A user experience analysis for senior citizens on mobile shopping service:
case study of big three companies of South Korea
Linköping University Electronic Press

SERVDES 2023

COPPE | UFRJ Universidade Federal Do Rio De Janeiro
DAD | PUC-Rio Pontifícia Universidade Católica Do Rio De Janeiro
Liptwork

Principle	Element	Analysis
Accessible	UX Writing	• 'Search at Coupang!' inside the search bar suggest user's action • Frequent use of foreign words deters intuitive understanding of content
	Rationality	• Features and separate services are mixed in the middle favorites area
	Scale & Contrast	• Large scale of promotion products allows user to easily find the information.
Useful & Usable	Layout & Structure	• Clear division of information and feature area based on the user goal ex) search bar, promotions, product browsing • Favorites area in the middle allows user for quick access to features and services
	Feedback	• Clear feedback of bottom navigation icon selection through color change • Infinite scroll down that suggests products and shopping contents
Valuable	Pleasurable	• Large actual product images allow the users to clearly identify the product • Use of intuitive and simple icons

Table 3. Coupang UX design principle analysis

Image 5 is the original and translated main page of Coupang. The basic user interface structure of the main page of Coupang from top to bottom is as follows.

- Logo & Alert icon → Promotion banner → Quick features → Product content

Table 3 is the UX design principle analysis of Coupang. First, in accessibility principle, Coupang had a UX writing element that induces the user's action of the search bar for searching for a product. Also, foreign vocabulary was used frequently, which may be difficult to understand the menu for prior users. The comparatively large size of the banner was used for promoting ongoing discounts or sales. For useful and usable principle, a clear division of product information and feature were found according to the user's desired action. Examples would be the search bar, promotion area, and product browsing area. The quick feature area in the middle of the application displays various features of other related applications and special categories of products. Clear feedback was made on the bottom navigation when the user tabs on each icon. For valuable principle, it was noticed that large actual images of the products are made so that users can identify the type of the product. Moreover, the use of intuitive and colorful icons will allow for enjoyable use of the application.

SERVDES 2023

COPPE | UFRJ Universidade Federal Do Rio De Janeiro
DAD | PUC-Rio Pontifícia Universidade Católica Do Rio De Janeiro
Livework

UX design principle analysis of NAVER Shopping
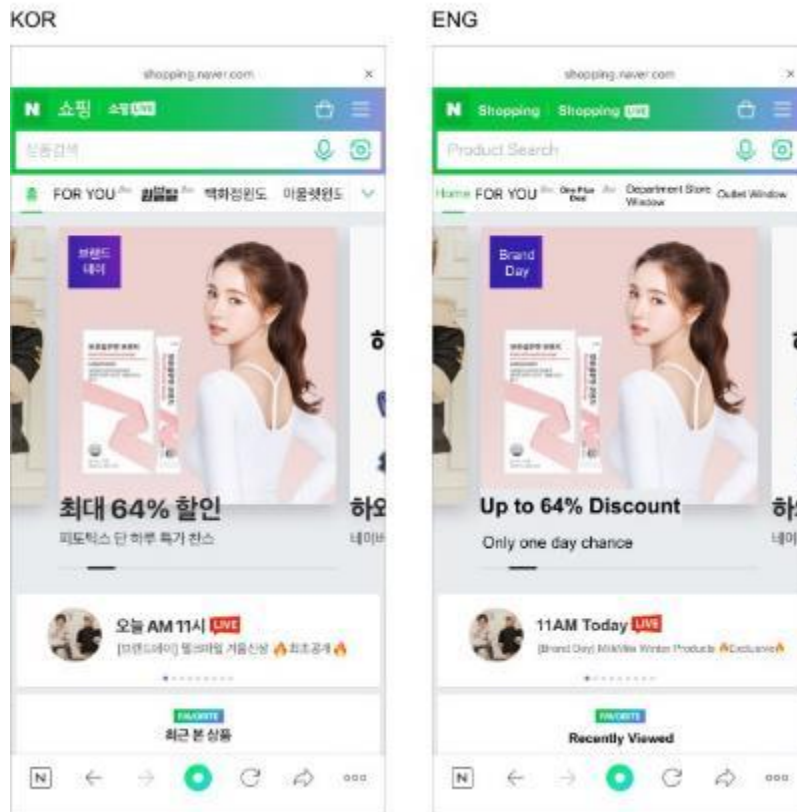
Image 6. NAVER Shopping original and English translated main page

Principle	Element	Analysis
Accessible	UX Writing	• Use of different fonts for top is friendly, but hard to recognize the meaning. • Use of various fonts and emoji catches the eye of the user.
	Rationality	• Having both 'Shopping' and 'Shipping LIVE' menus on the top is confusing. • Product description highlights the discount rate, not the product price.
	Scale & Contrast	• Large scale of promotion products allows user to easily find the information. • Consistant image size of product with one or two lines of description.
Useful & Usable	Layout & Structure	• Full product category is hard to find, located at the bottom of the screen. • Provides various shopping contents. ex) Rankings, Personalized suggestion
	Feedback	• Detailed dimmed effect appears on the selected area. • Horizontal auto scroll interaction exposes more number of information. • Clear indication of number of contents
Valuable	Pleasurable	• Provides various enjoyable shopping contents based on the user's interest. ex) Rankings, Personalized suggestion

Table 4. NAVER Shopping UX design principle analysis

Wonyoung Lee, Hyemin Lee, Chaemoon Yoo, Daeun Kim, Younghwan Pan
A user experience analysis for senior citizens on mobile shopping service:
case study of big three companies of South Korea
Linköping University Electronic Press

SERVDES 2023

COPPE | UFRJ Universidade Federal Do Rio De Janeiro
DAD | PUC-Rio Pontifícia Universidade Católica Do Rio De Janeiro
Livework

Image 6 is the original and translated main page of NAVER Shopping. The basic user interface structure of the main page of NAVER Shopping from top to bottom is as follows.

- Logo & Shopping basket & Main menu → Search bar (Voice search, Image search) → Themed shopping menu tab → Product content

Table 4 is the UX design principle analysis of NAVER Shopping. For the accessibility principle, the use of different font designs on the top of the category could be an entertaining factor but makes it hard for the user to recognize the meaning in terms of UX writing, and therefore have the possibility to deter the accessibility. In terms of information rationality, it was found that only the discount rate of a product was indicated, rather than the discounted price. This requires additional burden to the user to find out the correct information about the item. For useful and usable principles, it was noted that the full product category was located at the bottom of the main page, requiring multiple scroll-downs. The service provided multiple numbers of shopping content such as rankings and personalized suggestions, providing the user with content that is enjoyable and valuable. The horizontal auto scroll of products allowed the users to receive more information.

SERVDES 2023

COPPE | UFRJ Universidade Federal Do Rio De Janeiro
DAD | PUC-Rio Pontifícia Universidade Católica Do Rio De Janeiro
Livework

UX design principle analysis of Kakao Gift
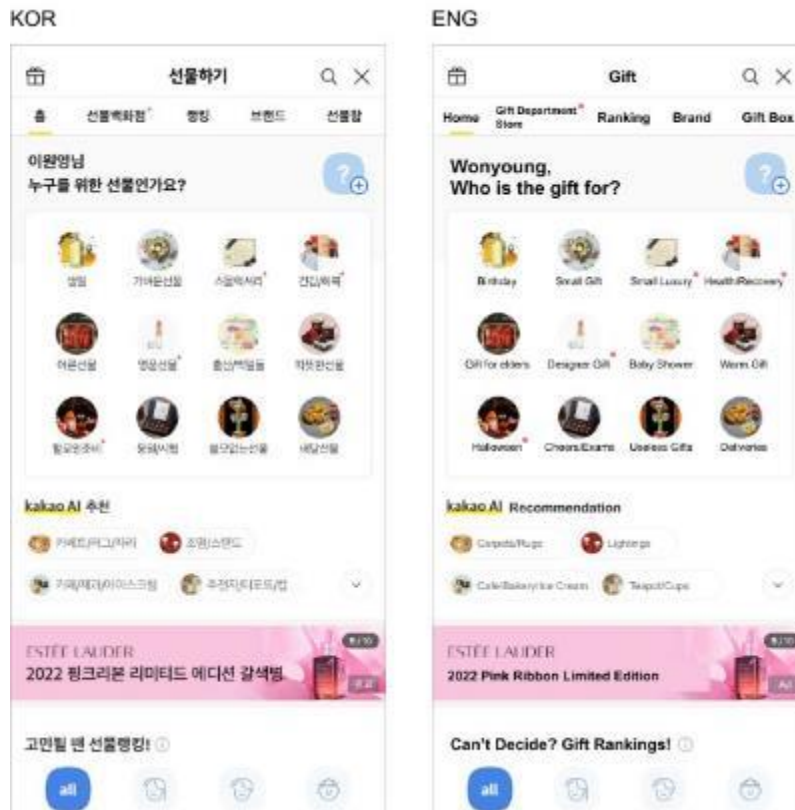
Image 7. Kakao Gift original and English translated main page

Principle	Element	Analysis
Accessible	UX Writing	• Frequent use of foreign words deters intuitive understanding of content. • "Who is the gift for?" reminds the purpose of Gift page in a friendly way.
	Rationality	• Product categorization different from existing shopping services. Category based on purpose of the gife allows easier gift shopping. ex) Birthday, small gifts, healthy gifts, small luxury, etc.
	Scale & Contrast	• Large scale of promotion products allows user to easily find the information.
Useful & Usable	Layout & Structure	• Top menu changes according to ongoing events. May confuse the mental model of service menu structure. • Multiple use of 'view more' feature allows the user to choose desired amount of info.
	Feedback	• Hard to understand the purpose of red dot on the right top corner of products.
Valuable	Pleasurable	• Provides various enjoyable shopping contents. ex) Rankings, AI suggestion

Table 5. Kakao Gift UX design principle analysis

Wonyoung Lee, Hyemin Lee, Chaemoon Yoo, Daeun Kim, Younghwan Pan
A user experience analysis for senior citizens on mobile shopping service:
case study of big three companies of South Korea
Linköping University Electronic Press

SERVDES
2023

COPPE | UFRJ Universidade Federal Do Rio De Janeiro
DAD | PUC-Rio Pontifícia Universidade Católica Do Rio De Janeiro
Livework

Image 7 is the original and translated main page of Kakao Gift. The basic user interface structure of the main page of Coupang from top to bottom is as follows.

- Gift box & Logo & Search icon → Menu tab (Changeable according to events) → UX writing with profile icon → Product category → Product content

Table 5 is the UX design principle analysis of Kakao Gift. For the accessible principle, the UX writing of the service is focused on the user's goal of sending a gift. The area "Who is the gift for?" and the profile selection function allow the user to focus on the person receiving the gift. The product categorization is based on the purpose of the gift such as 'birthday,' 'healthy gift,' 'small luxury,' etc. This categorization may be friendly for the service, but senior citizens might have difficulty finding a desired product. The promotion product banner provides a large image and description. For useful and usable principles, the top menu tab changes according to events such as traditional holidays, national holidays, and special brand promotion days. The change in the top menu may also create confusion for users. Some visual indicators were hard to understand, such as a red dot on the top right corner of the category and menu. For valuable principle, content that supports users to choose a gift such as a gift ranking and AI suggestions are provided.

SERVDES
2023

COPPE | UFRJ Universidade Federal Do Rio De Janeiro
DAD | PUC-Rio Pontifícia Universidade Católica Do Rio De Janeiro
Liywork

Comprehensive Analysis

Principle	Element	Coupang	NAVER Shopping	Kakao Gift
Accessibility	UX Writing	• Friendly UX writing for user ex) 'Search at Coupang!' • Frequent use of foreign words	• Use of different fonts on top menu • Use of various fonts and emoji	• Friendly UX writing for user ex) 'Who is the gift for?'
	Rationality	• Features and services are mixed in one area	• 'Shopping' and 'Shopping LIVE' menu • Highlight on discount rate, not the price	• Different product categorization, based on gift shopping theme
	Scale & Contrast	• Large size of products under promotion	• Consistant product image size	• Large scale of promotion products
Useful & Usable	Layout & Structure	• Clear division of information and feature	• Provides various shopping contents ex) Rankings, Personalized suggestion	• Changeable top menu according to events
	Feedback	• Clear color feedback on icon selection • Infinite scroll down of products	• Detailed dimmed effect for selected area • Clear indication of number of contents	• Marks that are hard to understand
Valuable	Pleasurable	• Large actual product images • Use of intuitive icons	• Provides enjoyable shopping contents based on the user's interest	• Provides enjoyable shopping contents for gift shopping

Table 6. Comprehensive chart of UX design principle analysis on Coupang, NAVER Shopping, and Kakao Gift

The big three services displayed a heavy amount of information on the main screen, including product categories, search bar, promotions, and additional shopping content. Coupang and Kakao Gift used friendly UX writing to guide user actions. Clear layout and visual highlights aided the usability of all services. NAVER Shopping and Kakao Gift reorganized their menu and category according to the service concept, which may create confusion for the user. All three services provided shopping content other than products, categorized by a certain theme or personalization. NAVER Shopping and Kakao Gift provided clear interaction feedback. None of the services had visible features or buttons designed separately for senior citizens on the main page.

SERVDES
2023

COPPE | UFRJ Universidade Federal Do Rio De Janeiro
DAD | PUC-Rio Pontifícia Universidade Católica Do Rio De Janeiro
Livework

Senior citizen interview on big 3 mobile shopping services

To discover the pain points of senior citizens in using mobile shopping services, a user interview was conducted. The think-aloud interview was conducted on Zoom, where two interviewees within the age group of the late 50s and mid-60s were asked to share a mobile phone screen and look through the main page of each service while freely sharing opinions. Both users had daily experience using mobile shopping services, conducting 70% of shopping through mobile service. Both users had high digital proficiency.
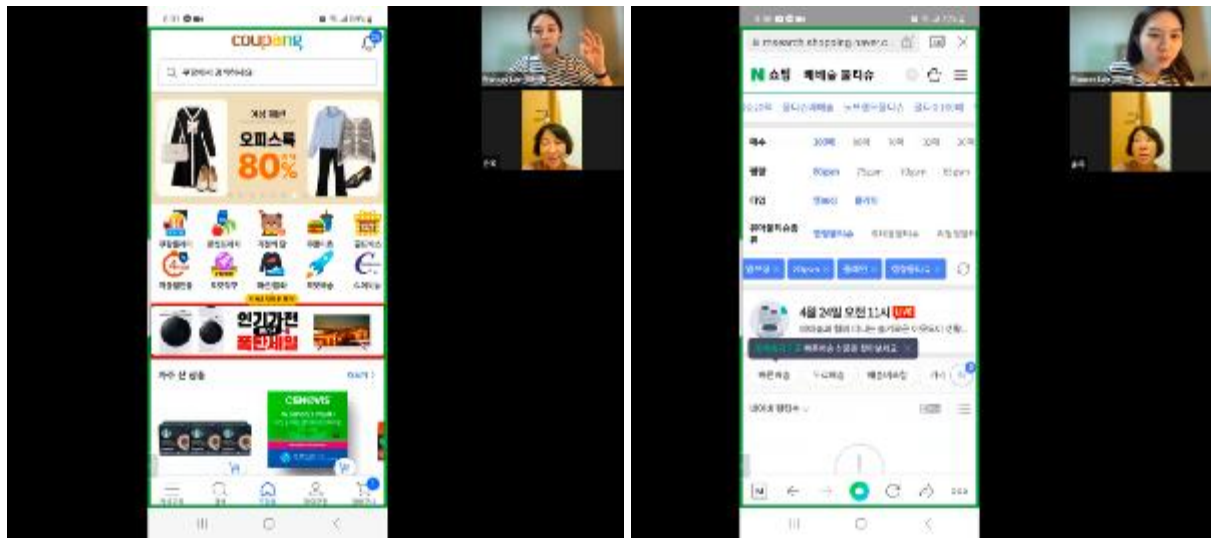

Image 8. User interviewes on three mobile shopping services

User interview summary and basic shopping behavior

Image 9. User interview summary

Wonyoung Lee, Hyemin Lee, Chaemoon Yoo, Daeun Kim, Younghwan Pan
A user experience analysis for senior citizens on mobile shopping service:
case study of big three companies of South Korea
Linköping University Electronic Press

SERVDES 2023

COPPE | UFRJ Universidade Federal Do Rio De Janeiro
DAD | PUC-Rio Pontifícia Universidade Católica Do Rio De Janeiro
Livework

Image 9 is the summarized image of the user characteristic and user interview. Most mobile shopping is done on Coupang, because of its fast and convenient delivery service called 'Rocket Delivery.' Through mobile shopping services, the user purchases groceries, daily necessities, nutritional supplements, cosmetics, and petrelated products. Most information referred to for product decisions is the number of reviews and detailed product information. Other shopping content such as rankings, personalized suggestions, etc. were rarely viewed, as they were considered unnecessary by the users. It was also notable that the user usually receives new product information through social relationships such as friends.

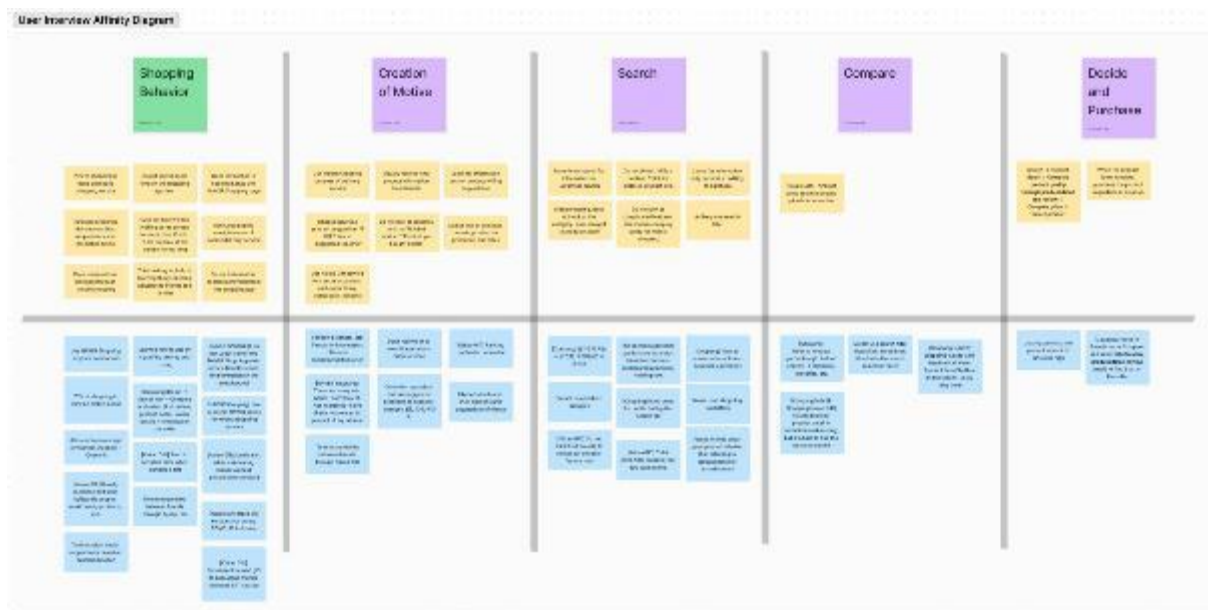### User interview affinity diagram

Image 10. User interview affinity diagram

Image 10 is the affinity diagram created based on the user interview summary (Image 9). The interview summary was organized under the criteria of purchase behavior steps: Creation of motive – Search – Compare – Decide and purchase. For the creation of the motive stage, it was found that senior citizen receives information on the new product through friends. When receiving the information, the related shopping platform and product link are often shared. The users also showed the tendency of viewing only the product detail information that one aims to purchase, and consider other shopping content such as events, promotions, and related products as unnecessary for them. For the search stage, both users used the search bar. A pain point was discovered when scrolling down the main page of Coupang, where the search bar disappeared. It was found that one user had a hard time finding the search bar or icon on different pages and screen layouts. For compare stage, the

SERVDES
2023

COPPE | UFRJ Universidade Federal Do Rio De Janeiro
DAD | PUC-Rio Pontifícia Universidade Católica Do Rio De Janeiro
Livework

user would refer to the 'purchased before' category for groceries. For decide and purchase stage, the user decided on a certain product based on the number of reviews, and the credibility of product detail information. Both users valued quality over the price of the product. As the think-aloud interview method was conducted, the users also expressed pain points regarding the overall service experience. The users had difficulty looking at the phone screen for too long because of aging, which can be speculated as the reason for not enjoying various shopping content. Page with a heavy amount of information was the same for both users. The users also felt confused when they are not able to find the search feature on the pages they are viewing.

Comprehensive analysis

Although both users were relatively familiar with mobile shopping, they still showed the behavior of using only the basic functions and features needed for purchasing desired items. This is due to the issue of accessibility is also included, such as small scale and low contrast of information causing difficulty in the user experience of senior citizens. In addition, one user felt difficulty in using a new service for the first time. This is also one of the characteristics of senior citizens finding it difficult to adapt to frequently changing UI. The user showed reluctance to ask her family members about the use of mobile shopping services but rather solved it through friends. In particular, the user showed obtaining information about new products from social relationships such as friends and relatives.

Conclusions and Discussions

The insights and pain points discovered by user interviews did not come across as the same as the heuristic evaluation. It can be speculated that while designers need to analyze and suggest specific design guidelines based on inclusive design principles and policies, the result may differ after listening to the actual user target. The interviewees that are or entering the age of senior citizens had already shown a relatively high understanding of the basic user interface of the mobile shopping service main page. However, they used only the basic features needed for purchasing a desired product. Once they had fully understood the particular service process, they were able to easily reach the desired goal of the shopping. It can be suggested that rather than applying a user interface for senior citizens on all pages of the service due to accessibility issues, it is more than enough to create a design that can guarantee that senior citizens can seamlessly execute each stage of shopping according to their needs. Additional finding on social relationships from user interview requires further research in terms of their role in senior citizens' shopping behavior.

SERVDES 2023

COPPE | UFRJ Universidade Federal Do Rio De Janeiro
DAD | PUC-Rio Pontifícia Universidade Católica Do Rio De Janeiro
Livework

References

Cho, Y. J. (2020, May 22). [기획] 새로운 노인, 베이비부머가 온다. Incheon Today.
http://www.incheontoday.com/news/articleView.html?idxno=123095

Kim, S. K. (2023, February 12). 이커머스, 시장 점유율 '2 장 1 중'체제로... 쿠팡 vs
네이버 '전면전'. Aju Business Daily.
https://www.ajunews.com/view/20230212153020264

Morrison, B., Nicholson, J., Wood, B., and Briggs, P. (2023). Life after lockdown: The
experiences of older adults in a contactless digital world. Frontiers in
Psychology, 10.3389/fpsyg.2022.1100521

National Information Society Agency. (2022). 2022 Report on the Digital Divide (NIA
VIII-RSE-C-22046). Ministry of Science and ICT, South Korea.

Sisxmith, A., Horst, B., Simeonov, D., and Mihailidis, A. (2022). Older People's Use
of Digital Technology During the COVID-19 Pandemic. Bulletin of Science,
Technology & Society, 19-24. https://doi.org/10.1177/02704676221094731

Savitz, E. J. (2021, March 12). Coupang Is the Amazon.com of South Korea, but
Maybe Even Better. And Now You Can Buy the Stock. BARRON'S.
https://www.barrons.com/articles/coupang-is-the-amazon-com-of-south-
koreabut-maybe-even-better-51615590150

UN. (2022). World Population Prospects 2022. United Nations, Department of
Economic and Social Affairs.

Wesolko. (2022). *Peter Morville's User Experience Honeycomb.*
https://danewesolko.medium.com/peter-morvilles-user-experiencehoneycomb-
904c383b6886