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Research Article

Exploring the customer perceived value of online grocery shopping: a cross-sectional study of Korean and Chinese consumers using Means-End Chain theory

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Objectives: Despite the growing market share of online grocery shopping, there is a need to understand customer perceived value due to the ongoing advancements in information technology. This study explores the connections between attributes, consequences, and values. Additionally, it conducts a cross-country comparison of consumers' online grocery shopping behaviors to gain a deeper understanding of consumer market segments and any potential variations among them.
Methods: Data was collected through an online questionnaire survey conducted from May 1 to 15, 2024, targeting 400 consumers in Seoul, Korea, and Shanghai, China, who have experience with online grocery shopping. The survey utilized the Means-End Chain theory and association pattern technique hard laddering. Data collation and analysis were conducted using the IBM SPSS Statistics 28.0 program. The LadderUX software was employed to analyze the links between attributes, consequences, and values and create the consumer purchasing process's implication matrix and hierarchical value map (HVM).
Results: The study identified key attributes that influence online grocery shopping decisions, including delivery service, price, freshness, and quality. Korean consumers demonstrated a higher sensitivity to price (19.0%) and delivery service (17.0%). In contrast, Chinese consumers prioritized delivery service (15.0%) and after-sales service (14.8%). Commonly cited consequences included time saving (12.6% for Koreans, 11.3% for Chinese), whereas prevalent values encompassed convenience (36.8% for Koreans, 19.6% for Chinese) and economic value (26.6% for Koreans, 14.7% for Chinese). The HVM underscored these insights, highlighting diverse consumer preferences and country-specific nuances.
Conclusions: The findings highlight the current state of online food consumption and consumers' value systems, revealing variations among countries. These findings offer empirical insights that can be used to create customized global marketing strategies that resonate with various consumer preferences and market dynamics.

Keywords: consumer behavior; food preferences; perception; online systems; surveys and questionnaires

INTRODUCTION

The Internet's continuous innovation has significantly integrated e-commerce into daily life and consumption habits [1,2]. In 2023, global retail e-commerce

sales were estimated to have reached $5.8 trillion, with projections suggesting they will surpass $8.0 trillion by 2027 [3]. The rise of online sales channels is also transforming how brands sell products to consumers [4]. Online grocery shopping, a form of e-commerce, allows individuals and businesses to purchase food and various household supplies through e-commerce websites or mobile applications [5]. In South Korea, one of the pioneers of online grocery shopping with a well-developed Internet infrastructure [5], food and beverage transactions in online shopping malls increased from 13.4 trillion won in 2019 to 29.8 trillion won in 2023 [6]. Considering that the growth rate of the total online shopping transaction amount over the past five years was 67.5%, the growth rate of food and beverage online transactions was even more significant at 122.4%. In contrast, the Chinese online market started late and is still in the emerging stage, with insufficient industry regulation. China's online retail market grew from 10.6 trillion yuan in 2019 to 15.4 trillion yuan in 2023, a growth rate of 45.2% over the past five years. Among them, the online grocery market is growing rapidly, increasing from 279.6 billion yuan to 642.4 billion yuan, a 129.8% increase [7,8].

As the potential of online grocery shopping is explored, early research has begun to focus on consumer behavior. For instance, perceived risks, trust, satisfaction, and attitudes have been identified as effective predictors of consumers' willingness to use online grocery shopping again, while social norms, compatibility, and relative attitudes played a key role in explaining consumers' acceptance of online grocery shopping [9-11]. However, the underlying reasons why consumers adopt these behavioral factors have been largely neglected. Hsiao *et al.* [12] posited that customer evaluations of quality attributes and usage consequences can be encapsulated as customer perceived value (CPV). A service or product positively influences corresponding behaviors and beliefs when it is perceived as valuable [13]. Despite its acknowledged significance in shaping behavioral intentions, CPV remains inconsistently defined. This study utilizes the definitions provided by Zeithaml [14] and Monroe & Chapman [15] definitions to define CPV as an overall evaluation of online grocery shopping, considering the trade-off between cost and benefit. Ad-

ditionally, certain values manifest differently depending on specific behaviors or across various populations [16]. Previous discussions on CPV measurement have largely been context-dependent; for instance, Mohd-Any *et al.* [17] argued that CPV in online environments should be distinct from that in physical stores, while Dastane *et al.* [18] further validate these differences in mobile versus general online contexts. Existing research in this area may overlook key details, as most value scales were not originally designed to measure consumers in the context of online grocery shopping [19]. In addition, most studies on online grocery shopping have been conducted in relatively developed markets or in countries outside Asia. Few studies have been conducted in major Asian markets, particularly those comparing online grocery shopping behaviors between developed and developing countries. Therefore, this study selects South Korea, a representative developed market, and China, a developing market, to explore the CPV of online grocery shopping in two major Asian markets.

In two representative Asian markets, Korean consumers exhibit a notable inclination toward online grocery shopping [5], whereas urbanization, climate changes, supply chain issues, and the impact of COVID-19 drive China's market growth. Beyond reaching market maturity, consumer behaviors and preferences vary significantly between Korean and Chinese contexts. Choi *et al.* [20] discovered that Korean consumers' online grocery shopping channel choices are influenced by demographic factors such as residential population density, household composition, education level, and price sensitivity, with ease of use and delivery services also playing a role. Customer preferences in China are influenced by various factors, including product attributes, retailer reputation, and socio-demographic factors [21]. Other key factors include origin, food safety, green perceptions, sensory characteristics, and online reviews [22]. Thus, conducting a cross-country comparison between Korea and China is essential to comprehend consumer perspectives on online grocery shopping across different levels of market maturity.

Although prior research has validated the importance of CPV in explaining consumer behavioral decisions, to further explore and explain the process of CPV formation, the Means-End Chain (MEC) theory, which is

a common method for exploring cognitive processes through hierarchical analyses, provides theoretical support by revealing the abstract cognition that may result from the attributes of a product or service, thus being widely applied [23]. It achieves this by examining the cognitive processes involved in the hierarchical links between product/service attributes, consequences, and values. Based on Reynolds & Olson's [24] three cognitive levels, MEC theory offers a robust framework for understanding consumer decision-making. MEC has been extensively used to assess consumer preferences for various products and services [13,23]. Examples include online shopping and mobile payments [13,25]. Beyond the online context, applying MEC theory extends to various fields, such as education, tourism, and healthcare [26-28]. Hard laddering techniques are commonly employed to obtain hierarchical information. Hard laddering, which involves selecting from predetermined conceptual codes, mitigates researcher bias and supports a large sample. However, it limits the correlation among specific factors, which may result in superficial conclusions [29]. The association pattern technique (APT), which is an advanced technique in hard laddering, tackles this issue by permitting forked answers, capturing results akin to qualitative studies [30]. APT's utility, particularly in food sector research, has been consistently validated [31].

Therefore, this study employs the MEC and APT laddering techniques to elicit attributes, consequences, and values associated with online grocery shopping. Most research on online grocery shopping has been conducted in relatively developed markets or countries. To bridge this gap and advance the digital market transformation of groceries, we identify the main attribute-consequence-value (ACV) pathways. Moreover, we explore and discuss consumers' CPV regarding online grocery shopping, focusing on differences across countries by constructing a comprehensive implication matrix and hierarchical value map (HVM). By gaining a better understanding of consumers' online grocery shopping behavior and identifying the factors that consumers value most when making purchase decisions, this research aims to adapt to the rapidly developing environment of cross-border shopping, thereby expanding the scope of online shopping applications. Additionally, this study

will contribute to the development of the strategies for entering international markets and invigorating the domestic online grocery sector. It will also provide insights for e-suppliers to refine their business strategies in the highly competitive online retail market, ultimately protecting consumers. Furthermore, the findings will serve as a reference for online market policy formulation.

METHODS

Ethics statement

The informed written consent was obtained from each participant. The Institutional Review Board of Kookmin University approved this study (approval number: KMU-202403-HR-401). All participants were required to read a description of the content and purpose of the study before the beginning of the survey and to provide an online consent form.

1. Research subject and period
This study utilized online questionnaires to survey online grocery shopping consumers in Seoul, Korea, and Shanghai, China. Data was collected from May 1 to 15, 2024, through an online recruitment notice. The quota sampling method was applied based on age and gender. The sample included 400 consumers (200 in Korea and 200 in China) who had experienced online grocery shopping within the last year. All responses were analyzed, with an equal number of 200 responses from each country.

2. Content of the survey
The survey questions were formulated based on a context analysis of previous research [13,18,31-35]. The survey investigated consumers' demographic characteristics, online grocery shopping behaviors, and hierarchy of attributes, consequences, and values. Regarding consumers' demographic characteristics, it examined consumers' gender, age, education, occupation, monthly income, and household composition. Furthermore, it investigated their online grocery shopping behaviors, including purchaser, purchasing frequency, frequency increase, and online shopping channel. Finally, the MEC hierarchy of attributes, consequences, and values was explored using the APT laddering technique. To identify the ACV associated with online grocery

shopping, a systematic review of the literature was conducted. A pre-survey study identified 23 online grocery shopping attributes, which were categorized into four dimensions: service factors, food factors, surroundings, and antecedent states [32-34]. Several prior studies were referenced to derive consequence variables for the second stage in the MEC, identifying 21 consequence variables used in this study [32-34]. Since CPV can be an abstract personal factor, it may be difficult to express directly in words. Previous research has suggested providing an a priori value scale to give subjects some reference [31]. Ultimately, the value scale proposed by Dastane *et al.* [18] and other previous studies were used as the basis for this study, utilizing the 10 values as the scope of measurement.

3. Data analysis methods

Data was collated and analyzed using IBM SPSS Statistics 28.0 (IBM Co.). The analysis included frequency analysis, descriptive analysis, chi-square or Fisher's exact test, and cross-country comparisons of demographic characteristics and online grocery shopping consumption patterns. The LadderUX software [36] was utilized to analyze and establish relationships between attributes, consequences, and values and construct the implication matrix and HVM. When plotting the HVM, a cut-off value was used to avoid loss of results and reduce complexity [37]. The cut-off characterizes the minimum number of total links (direct and indirect) between the elements to be depicted in the HVM. After iterative debugging based on the number of samples and rules of thumb, this study consistently validated the establishment of a cut-off value of 7, indicating that links occurring less than 7 times are not displayed. Each line represents the perceived association of online grocery shopping consumers, and the five lines with the highest number of associations are bolded to demonstrate key connections.

RESULTS

1. Demographic characteristics

Table 1 presents the demographic characteristics of Korean and Chinese consumers. For both Korea and China, the proportion of men (n = 100, 50.0%) and

women (n = 100, 50.0%) was equal. In Korea, 20.0% of respondents (n = 40) were distributed across age groups of 20–29, 30–39, 40–49, 50–59, and 60 years and older. More than 50.0% of the Korean respondents were university graduates (n = 144, 72.0%), while 47.0% were office workers (n = 94). The highest proportion of Korean respondents reported a monthly income of 3,000,000–4,999,999 Korean Won (KRW) (n = 66, 33.0%). The most prevalent household composition was four-person households (n = 53, 26.5%). The largest groups in China comprised respondents aged 50–59 and 60 years and older (n = 42, 21.0% each). Seventy-five percent of Chinese respondents were university graduates (n = 150), and 59.5% were employed in office settings (n = 119). Among the Chinese respondents, the largest proportion reported a monthly income of over 10,000 Chinese Yuan (CNY) (n = 67, 33.5%). Three-person households were the most common (n = 83, 41.5%).

2. Online grocery shopping behaviors

Table 2 compares online grocery shopping behaviors between Korean and Chinese consumers. When purchasing groceries online, most respondents from both Korea and China typically make the purchases themselves (Korean: n = 179, 89.5%; Chinese: n = 185, 92.5%). In both countries, most respondents reported an increase in online grocery shopping frequency in the current year compared to the previous one, with the highest proportion answering "maybe yes" (Korean: n = 91, 45.5%; Chinese: n = 90, 45.0%). Regarding the frequency of online grocery shopping, Korean consumers predominantly shopped once a week (n = 64, 32.0%), whereas Chinese consumers indicated a higher frequency of shopping once every 2–3 days (n = 95, 47.5%). A significant percentage of respondents from both groups expressed a preference for using both online and offline shopping channels equally (Korean: n = 67, 33.5%; Chinese: n = 72, 36.0%). However, Korean consumers demonstrated a preference for physical shops more than Chinese consumers, who preferred online grocery shopping. Most Korean consumers primarily utilized online shopping platforms (n = 162, 36.4%) for their purchases, typically spending between 30,000–50,000 KRW per transaction (n = 76, 38.0%). They most frequently purchased ready-to-cook processed food (n

Table 1. Demographic characteristics

Characteristic	Total (n = 400)	Korean (n = 200)	Chinese (n = 200)	χ^2
Gender				0.000
Man	200 (50.0)	100 (50.0)	100 (50.0)	
Woman	200 (50.0)	100 (50.0)	100 (50.0)	
Age (year)				0.200
20–29	80 (20.0)	40 (20.0)	40 (20.0)	
30–39	78 (19.5)	40 (20.0)	38 (19.0)	
40–49	78 (19.5)	40 (20.0)	38 (19.0)	
50–59	82 (20.5)	40 (20.0)	42 (21.0)	
≥ 60	82 (20.5)	40 (20.0)	42 (21.0)	
Education				4.315
Junior high school	6 (1.5)	1 (0.5)	5 (2.5)	
High school	44 (11.0)	26 (13.0)	18 (9.0)	
Bachelor's	294 (73.5)	144 (72.0)	150 (75.0)	
Master's or above	56 (14.0)	29 (14.5)	27 (13.5)	
Occupation				43.899***
Office worker	213 (53.3)	94 (47.0)	119 (59.5)	
Student	34 (8.5)	12 (6.0)	22 (11.0)	
Homemaker	33 (8.3)	28 (14.0)	5 (2.5)	
Self-employed	26 (6.5)	15 (7.5)	11 (5.5)	
Specialized worker	25 (6.3)	22 (11.0)	3 (1.5)	
Service industrial	23 (5.8)	11 (5.5)	12 (6.0)	
Public official	11 (2.8)	2 (1.0)	9 (4.5)	
Production worker	11 (2.8)	3 (1.5)	8 (4.0)	
Others	24 (6.0)	13 (6.5)	11 (5.5)	
Monthly income				-
Below 1,000,000 KRW or 4,000 CNY	34 (8.5)	15 (7.5)	19 (9.5)	
1,000,000-2,999,999 KRW or 4,000–5,999 CNY	84 (21.0)	57 (28.5)	27 (13.5)	
3,000,000–4,999,999 KRW or 6,000–7,999 CNY	107 (26.8)	66 (33.0)	41 (20.5)	
5,000,000–6,999,999 KRW or 8,000–9,999 CNY	70 (17.5)	29 (14.5)	41 (20.5)	
More than 7,000,000 KRW or 10,000 CNY	93 (23.3)	26 (13.0)	67 (33.5)	
No regular income	12 (3.0)	7 (3.5)	5 (2.5)	
Composition of a family				45.836***
1	50 (12.5)	41 (20.5)	9 (4.5)	
2	66 (16.5)	44 (22.0)	22 (11.0)	
3	134 (33.5)	51 (25.5)	83 (41.5)	
4	110 (27.5)	53 (26.5)	57 (28.5)	
5	34 (8.5)	11 (5.5)	23 (11.5)	
More than 6	6 (1.5)	0 (0.0)	6 (3.0)	

n (%).
KRW, Korean Won; CNY, Chinese Yuan.
***P < 0.001 by chi-square test.

= 143, 11.8%), followed by milk and dairy products (n = 126, 10.4%). In contrast, Chinese consumers preferred online supermarket malls (n = 133, 26.5%). Among the various categories, fruits were the most frequently purchased (n = 167, 13.7%), followed by milk and dairy products (n = 143, 11.7%). The average expenditure per transaction among Chinese consumers ranged from 50–99 CNY (n = 74, 37.0%).

Table 2. Online grocery shopping behaviors

Dimension	Total (n = 400)	Korean (n = 200)	Chinese (n = 200)	χ^2
Online purchaser				2.670
Self	364 (91.0)	179 (89.5)	185 (92.5)	
Parents	22 (5.5)	11 (5.5)	11 (5.5)	
Others	14 (3.5)	10 (5.0)	4 (2.0)	
Online frequency increase				12.676*
Absolutely not	8 (2.0)	3 (1.5)	5 (2.5)	
Maybe not	29 (7.3)	10 (5.0)	19 (9.5)	
Ordinary	135 (33.8)	80 (40.0)	55 (27.5)	
Maybe yes	181 (45.3)	91 (45.5)	90 (45.0)	
Absolutely yes	47 (11.8)	16 (8.0)	31 (15.5)	
Online frequency				50.609***
Daily	23 (5.8)	2 (1.0)	21 (10.5)	
Once every 2–3 days	149 (37.3)	54 (27.0)	95 (47.5)	
Once every week	115 (28.8)	64 (32.0)	51 (25.5)	
2–3 times a month	83 (20.8)	57 (28.5)	26 (13.0)	
Once every month	20 (5.0)	16 (8.0)	4 (2.0)	
Once every 2–3 months	10 (2.5)	7 (3.5)	3 (1.5)	
Shopping channel				15.403**
Almost all through physical stores	25 (6.3)	19 (9.5)	6 (3.0)	
Physical stores more than online	82 (20.5)	50 (25.0)	32 (16.0)	
Half and half	139 (34.8)	67 (33.5)	72 (36.0)	
Online more than physical stores	113 (28.3)	46 (23.0)	67 (33.5)	
Almost all through online	41 (10.3)	18 (9.0)	23 (11.5)	
Single spending amount (KRW)				-
Below 10,000	2 (0.5)	2 (1.0)	-	
10,000–20,000	22 (5.5)	22 (11.0)	-	
20,000–30,000	34 (8.5)	34 (17.0)	-	
30,000–50,000	76 (19.0)	76 (38.0)	-	
50,000–70,000	48 (12.0)	48 (24.0)	-	
70,000–100,000	15 (3.8)	15 (7.5)	-	
More than 100,000	3 (0.8)	3 (1.5)	-	
Single spending amount (CNY)				-
Below 50	31 (7.8)	-	31 (15.5)	
50–99	74 (18.5)	-	74 (37.0)	
100–199	59 (14.8)	-	59 (29.5)	
200–299	25 (6.3)	-	25 (12.5)	
300–399	5 (1.3)	-	5 (2.5)	
More than 400	6 (1.5)	-	6 (3.0)	
Online grocery shopping channels[1]				-
Online shopping platforms (Coupang, Meituan maicai, etc.)	283 (29.9)	162 (36.4)	121 (24.2)	
Online supermarket mall (E-mart mall, Rt-mart mall, etc.)	231 (24.4)	98 (22.0)	133 (26.5)	
Food specializing mall (Oasis, Womai, etc.)	142 (15.0)	83 (18.7)	59 (11.8)	
Home shopping (CJ O-shopping, CNRmall, etc.)	117 (12.4)	35 (7.9)	82 (16.4)	
Quick commerce (B-mart, Dingdong [Cayman] limited, etc.)	102 (10.8)	25 (5.6)	77 (15.4)	
Online department store mall (SSG.com, Jd.com, etc.)	51 (5.4)	27 (6.1)	24 (4.8)	
Others	20 (2.1)	15 (3.4)	5 (1.0)	
Total	946 (100.0)	445 (100.0)	501 (100.0)	

Table 2. (Continued)

Dimension	Total (n = 400)	Korean (n = 200)	Chinese (n = 200)	χ^2
Online grocery shopping types[1]	946 (100.0)	445 (100.0)	501 (100.0)	-
Fruits	259 (10.6)	92 (7.6)	167 (13.7)	
Vegetables	223 (9.2)	93 (7.7)	130 (10.6)	
Meat	230 (9.4)	112 (9.2)	118 (9.7)	
Eggs	209 (8.6)	95 (7.8)	114 (9.3)	
Aquatic products	140 (5.7)	69 (5.7)	71 (5.8)	
Grains and their products	184 (7.6)	101 (8.3)	83 (6.8)	
Milk and dairy products	269 (11.0)	126 (10.4)	143 (11.7)	
Ready-to-cook processed foods	231 (9.5)	143 (11.8)	88 (7.2)	
Ready-to-eat processed foods	216 (8.9)	117 (9.6)	99 (8.1)	
Processed meat products	183 (7.5)	95 (7.8)	88 (7.2)	
Processed seafood products	120 (4.9)	77 (6.3)	43 (3.5)	
Other processed foods	172 (7.1)	94 (7.7)	78 (6.4)	
Total	2,436 (100.0)	1,214 (100.0)	1,222 (100.0)	

n (%).
KRW, Korean Won; CNY, Chinese Yuan.
[1]Multiple responses.
*$P < 0.05$, **$P < 0.01$, ***$P < 0.001$ by chi-square or Fishers' exact test.

3. Means-End Chain analysis of consumers

We conducted MEC analysis to understand the values associated with online grocery shopping. The results are presented in Table 3.

Regarding attributes, Korean consumers prioritize price (n = 114, 19.0%) as the most important factor, followed by delivery service (n = 102, 17.0%), freshness (n = 73, 12.2%), quality (n = 67, 11.2%), and marketing promotions (n = 50, 8.3%). Conversely, Chinese consumers prioritize delivery service (n = 90, 15.0%), followed by after-sales service (n = 89, 14.8%), reviews (n = 49, 8.2%), price (n = 43, 7.2%), and quality (n = 43, 7.2%).

Regarding consequences, save time (n = 227, 12.6%) is the most frequently cited benefit among Korean consumers, followed by price comparison (n = 163, 9.1%), financial savings (n = 158, 8.8%), fast shipping (n = 154, 8.6%) and delivery on time (n = 139, 7.7). Similarly, Chinese consumers also prioritize save time (n = 203, 11.3%), followed by problem-solving (n = 177, 9.8%), service guarantee (n = 164, 9.1%), fast shipping (n = 152, 8.4%) and delivery on time (n = 146, 8.1%).

Regarding values, Korean consumers predominantly prioritize convenience (n = 663, 36.8%), followed by economic (n = 479, 26.6%) and trust (n = 204, 11.3%). In contrast, Chinese consumers, prioritize convenience

(n = 353, 19.6%), followed by economic (n = 265, 14.7%) and superiority (n = 233, 12.9%).

4. Implication matrix

Based on the hard laddering analysis results, the data collected was used to create the implication matrix, which illustrates the overall connections among the elements. The rows and columns show the relationships between ACV. Tables 4-7 depict the number of links between attributes (1–23) and consequences (24–44) and between consequences (24–44) and values (45–54), respectively. As shown in Tables 4-7, each cell of the implication matrix contains two numbers separated by a decimal point. The number to the left of the decimal point signifies the count of direct links, whereas the number to the right denotes the count of indirect links.

In the implication matrix of Korea, A13 (price) is most prominently connected to C32 (price comparison) in the attributes-consequences implication matrix (Table 4). The number 62|0 between A13 (price) and C32 (price comparison) indicates that A13 (price) directly leads to C32 (price comparison) 62 times, while A13 (price) indirectly leads to C32 (price comparison) 0 times through other mediating structures. In Table 5, the consequences-values implication matrix, C37 (financial savings) is

Table 3. Attribute-consequence-value coding content

Category[1]	Total (n = 400)	Korean (n = 200)	Chinese (n = 200)
Attributes			
1. Cross-platform service	21 (1.8)	7 (1.2)	14 (2.3)
2. Delivery service	192 (16.0)	102 (17.0)	90 (15.0)
3. After-sales service	105 (8.8)	16 (2.7)	89 (14.8)
4. Search service	44 (3.7)	13 (2.2)	31 (5.2)
5. Internet homepage and application	57 (4.8)	35 (5.8)	22 (3.6)
6. Technology innovation	15 (1.3)	3 (0.5)	12 (2.0)
7. Review	85 (7.1)	36 (6.0)	49 (8.2)
8. Platform reputation	38 (3.2)	7 (1.2)	31 (5.2)
9. Marketing promotions	79 (6.6)	50 (8.3)	29 (4.8)
10. Safety	31 (2.6)	11 (1.8)	20 (3.3)
11. Packaging	25 (2.1)	14 (2.3)	11 (1.8)
12. Brand	24 (2.0)	11 (1.8)	13 (2.2)
13. Price	157 (13.1)	114 (19.0)	43 (7.2)
14. Type	56 (4.7)	25 (4.2)	31 (5.2)
15. Freshness	111 (9.3)	73 (12.2)	38 (6.3)
16. Quality	110 (9.2)	67 (11.2)	43 (7.2)
17. Distance perception	4 (0.3)	3 (0.5)	1 (0.2)
18. Weather factor	5 (0.4)	0 (0.0)	5 (0.8)
19. Transmission of disease	0 (0.0)	0 (0.0)	0 (0.0)
20. Work factor	5 (0.4)	1 (0.2)	4 (0.7)
21. Home factor	5 (0.4)	0 (0.0)	5 (0.8)
22. Living status	10 (0.8)	1 (0.2)	9 (1.5)
23. Consumption burden	21 (1.8)	11 (1.8)	10 (1.7)
Total	1,200 (100.0)	600 (100.0)	600 (100.0)
Consequence			
24. Convenient access	262 (7.3)	131 (7.3)	131 (7.3)
25. Delivery on time	285 (7.9)	139 (7.7)	146 (8.1)
26. Save time	430 (11.9)	227 (12.6)	203 (11.3)
27. Stay on budget	221 (6.1)	82 (4.6)	139 (7.7)
28. Stress decrease	173 (4.8)	44 (2.4)	129 (7.2)
29. Problem solving	220 (6.1)	43 (2.4)	177 (9.8)
30. Service guarantee	209 (5.8)	45 (2.5)	164 (9.1)
31. Product comparison	165 (4.6)	73 (4.1)	92 (5.1)
32. Price comparison	248 (6.9)	163 (9.1)	85 (4.7)
33. Grocery supplies	132 (3.7)	80 (4.4)	52 (2.9)
34. No need to go out	180 (5.0)	127 (7.1)	53 (2.9)
35. Sensory quality	90 (2.5)	48 (2.7)	42 (2.3)
36. Food security	180 (5.0)	121 (6.7)	59 (3.3)
37. Financial savings	185 (5.1)	158 (8.8)	27 (1.5)
38. Free choice	89 (2.5)	39 (2.2)	50 (2.8)
39. Can do other things	58 (1.6)	35 (1.9)	23 (1.3)
40. Making a difference	20 (0.6)	6 (0.3)	14 (0.8)
41. Avoid for health	32 (0.9)	18 (1.0)	14 (0.8)
42. Bulk purchase	45 (1.3)	23 (1.3)	22 (1.2)
43. Fast shipping	306 (8.5)	154 (8.6)	152 (8.4)
44. Consumption promotion	70 (1.9)	44 (2.4)	26 (1.4)
Total	3,600 (100.0)	1,800 (100.0)	1,800 (100.0)

Table 3. (Continued)

Category[1]	Total (n = 400)	Korean (n = 200)	Chinese (n = 200)
Values			
45. Universal	210 (5.8)	84 (4.7)	126 (7.0)
46. Convenience	1,015 (28.2)	663 (36.8)	352 (19.6)
47. Economic	743 (20.6)	479 (26.6)	264 (14.7)
48. Hedonic	195 (5.4)	39 (2.2)	156 (8.7)
49. Superiority	303 (8.4)	70 (3.9)	233 (12.9)
50. Ease of use	222 (6.2)	82 (4.6)	140 (7.8)
51. Compatible	164 (4.6)	37 (2.1)	127 (7.0)
52. Normative	159 (4.4)	10 (0.6)	149 (8.3)
53. Stability	254 (7.1)	132 (7.3)	122 (6.8)
54. Trust	335 (9.3)	204 (11.3)	131 (7.3)
Total	3,600 (100.0)	1,800 (100.0)	1,800 (100.0)

n (%).
[1]Multiple responses.

most prominently connected to V47 (economic). C37 (financial savings) directly leads to V47 (economic) 118 times, while C37 (financial savings) indirectly leads to V47 (economic) 0 times through other intermediary structures. Similarly, the results of Chinese implication matrix show that A2 (delivery service) is most prominently connected to C25 (delivery on time) in the attributes-consequences implication matrix (Table 6). The number 55|0 between A2 (delivery service) and C25 (delivery on time) indicates that A2 (delivery service) directly leads to C25 (delivery on time) 55 times, while A2 (delivery service) indirectly leads to C25 (delivery on time) 0 times through other mediating structures. In the consequences-values implication matrix, C26 (save time) is most prominently connected to V46 (convenience) (Table 7). C26 (save time) directly leads to V46 (convenience) 80 times, while C26 (save time) indirectly leads to V46 (convenience) 0 times through other intermediary structures.

5. Hierarchical value map

Each link within the HVM is considered a motivational basis for consumer behavior. Thus, HVM provides insight into consumers' hierarchical cognitive structure and enables researchers to gain direct insight into consumer motivations. The HVM represents the main results of the study and is depicted in Figures 1 and 2 to increase the depth of information. All HVMs use a cutoff of 7 and retain the 5 most dominant paths.

Figure 1 shows the Korean results. Five major paths were found from attributes to consequences. The most salient links were A2 (delivery service) to C25 (delivery on time), A2 (delivery service) to C26 (save time), A2 (delivery service) to C43 (fast shipping), A13 (price) to C32 (price comparison) and A13 (price) to C37 (financial savings). Five major pathways were found from consequences to values, the most prominent links were C26 (save time) to V46 (convenience), C34 (no need to go out) to V46 (convenience), C43 (fast shipping) to V46 (convenience), C32 (price comparison) to V47 (economic), and C37 (financial savings) to V47 (economic). Finally, four major pathways were found from attributes to consequences to values. The most salient links were A2 (delivery service) to C26 (save time) to V46 (convenience), A2 (delivery service) to C43 (fast shipping) to V46 (convenience), A13 (price) to C32 (price comparison) to V47 (economic), and A13 (price) to C37 (financial savings) to V47 (economic).

Figure 2 shows the Chinese results. Five major paths were found from attributes to consequences. The most salient links were A2 (delivery service) to C25 (delivery on time), A2 (delivery service) to C26 (save time), A2 (delivery service) to C43 (fast shipping), A3 (after-sales service) to C29 (problem solving), and A3 (after-sales service) to C30 (service guarantee). Five main paths were found from consequences to values, the most prominent links were C25 (delivery on time) to V46 (convenience), C26 (save time) to V46 (convenience),

Table 4. Implication matrix between attributes and consequences of Korean consumers (n = 200)

	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
1	4|0	4|0	4|0	2|0	-	1|0	1|0	-	2|0	1|0	-	-	-	-	-	1|0	-	-	-	-	1|0
2	27|0	49|0	48|0	7|0	3|0	9|0	3|0	4|0	20|0	12|0	34|0	4|0	12|0	14|0	4|0	6|0	1|0	-	4|0	47|0	1|0
3	4|0	7|0	7|0	-	2|0	5|0	4|0	2|0	2|0	-	2|0	1|0	2|0	3|0	1|0	2|0	-	-	-	3|0	1|0
4	5|0	4|0	6|0	2|0	3|0	-	1|0	1|0	2|0	2|0	3|0	-	2|0	4|0	1|0	1|0	-	-	-	2|0	-
5	20|0	15|0	19|0	1|0	1|0	2|0	1|0	3|0	8|0	2|0	7|0	1|0	4|0	4|0	3|0	1|0	-	-	-	12|0	1|0
6	1|0	-	1|0	1|0	-	-	-	-	1|0	-	-	-	1|0	2|0	1|0	-	-	-	1|0	-	-
7	6|0	7|0	16|0	6|0	3|0	3|0	7|0	15|0	9|0	1|0	5|0	2|0	8|0	6|0	2|0	-	1|0	2|0	-	4|0	3|0
8	2|0	1|0	4|0	-	-	1|0	1|0	-	1|0	1|0	1|0	-	-	1|0	2|0	2|0	-	-	-	3|0	1|0
9	8|0	9|0	21|0	11|0	8|0	6|0	3|0	3|0	21|0	4|0	6|0	4|0	3|0	23|0	-	3|0	2|0	1|0	2|0	7|0	5|0
10	3|0	1|0	3|0	1|0	-	1|0	2|0	-	4|0	3|0	6|0	-	3|0	2|0	-	1|0	-	1|0	-	1|0	1|0
11	2|0	3|0	4|0	-	1|0	1|0	2|0	3|0	1|0	1|0	4|0	-	6|0	2|0	-	4|0	-	1|0	-	6|0	1|0
12	2|0	1|0	4|0	-	-	1|0	-	3|0	4|0	2|0	3|0	1|0	2|0	4|0	1|0	1|0	1|0	-	-	1|0	2|0
13	20|0	13|0	35|0	33|0	8|0	5|0	5|0	14|0	62|0	8|0	17|0	6|0	13|0	48|0	7|0	4|0	-	2|0	6|0	22|0	12|0
14	5|0	3|0	8|0	4|0	-	2|0	-	8|0	5|0	8|0	6|0	3|0	4|0	6|0	6|0	2|0	1|0	-	1|0	2|0	3|0
15	13|0	10|0	24|0	4|0	7|0	3|0	4|0	9|0	10|0	16|0	18|0	15|0	30|0	17|0	4|0	3|0	-	4|0	3|0	21|0	4|0
16	7|0	8|0	16|0	9|0	6|0	2|0	10|0	7|0	9|0	19|0	10|0	10|0	30|0	16|0	6|0	2|0	-	7|0	3|0	18|0	6|0
17	2|0	3|0	2|0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1|0	1|0	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	1|0	-	-	-	-	-	-	-	-	-	1|0	-	-	1|0	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	1|0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1|0	1|0
23	-	1|0	3|0	2|0	1|0	1|0	1|0	2|0	3|0	2|0	4|0	1|0	1|0	4|0	1|0	1|0	-	-	1|0	3|0	1|0

0|0, direct linkages; |, indirect linkages; 1–23, attributes; 24–44, consequences.

Table 5. Implication matrix between consequences and values of Korean consumers (n = 200)

	45	46	47	48	49	50	51	52	53	54
24	13|0	61|0	18|0	1|0	5|0	8|0	-	1|0	8|0	16|0
25	8|0	72|0	22|0	3|0	8|0	3|0	2|0	1|0	5|0	15|0
26	6|0	134|0	48|0	1|0	6|0	8|0	3|0	2|0	6|0	12|0
27	3|0	13|0	58|0	2|0	1|0	1|0	-	-	3|0	2|0
28	2|0	6|0	5|0	7|0	4|0	2|0	1|0	1|0	7|0	9|0
29	3|0	8|0	4|0	1|0	2|0	8|0	1|0	-	6|0	10|0
30	4|0	7|0	5|0	-	2|0	2|0	3|0	2|0	2|0	18|0
31	9|0	14|0	14|0	2|0	8|0	8|0	2|0	-	5|0	12|0
32	9|0	26|0	99|0	2|0	5|0	3|0	4|0	1|0	5|0	10|0
33	6|0	29|0	15|0	2|0	-	8|0	1|0	-	9|0	12|0
34	4|0	97|0	9|0	1|0	6|0	4|0	-	-	3|0	2|0
35	1|0	9|0	8|0	2|0	1|0	2|0	3|0	-	8|0	14|0
36	1|0	16|0	9|0	3|0	-	2|0	5|0	-	48|0	38|0
37	3|0	15|0	118|0	1|0	3|0	3|0	6|0	-	-	7|0
38	5|0	16|0	4|0	1|0	4|0	4|0	1|0	1|0	-	3|0
39	1|0	21|0	7|0	-	3|0	1|0	1|0	1|0	-	-
40	1|0	-	1|0	3|0	1|0	-	-	-	-	-
41	-	-	1|0	1|0	1|0	-	-	-	11|0	4|0
42	-	19|0	2|0	-	1|0	-	-	-	-	-
43	3|0	88|0	25|0	2|0	5|0	9|0	2|0	-	6|0	14|0
44	3|0	12|0	8|0	3|0	4|0	6|0	2|0	-	-	6|0
22	-	-	-	-	1|0	-	-	-	-	-
23	-	1|0	3|0	2|0	1|0	1|0	1|0	2|0	3|0	2|0

0|0, direct linkages; |, indirect linkages; 24–44, consequences; 45–54, values.

C43 (fast shipping) to V46 (convenience), C27 (stay on budget) to V47 (economic), and C24 (convenient access) to V46 (convenience). Ultimately, three major pathways were found from attributes to consequences to values. The most salient links were A2 (delivery service) to C25 (delivery on time) to V46 (convenience), A2 (delivery service) to C26 (save time) to V46 (convenience), and A2 (delivery service) to C43 (fast shipping) to V46 (convenience).

DISCUSSION

This study utilizes the MEC approach to reveal the CPV of online grocery shopping in Korea and China. The online channel has become increasingly innovative; thus, consumers have become more sophisticated and discerning because of the diminished constraints of shopping online and the increased diversity of products, services, information, technology, and purchasing

channels [38]. Therefore, relying solely on offering variety and low prices may not always be an effective strategy for attracting consumers [39,40]. Thus this study aims to comprehend the CPV of online grocery shopping.

Both Korean and Chinese consumers surveyed actively engage in online grocery shopping. However, other findings exhibit significant cross-country differences. Compared with Korean consumers, Chinese consumers exhibit a more pronounced growth trend in online grocery shopping. Given the rapid expansion of the Chinese market, it is unsurprising that our survey could yield these results. Specifically, Korean consumers typically shop online once a week, whereas Chinese consumers shop online 2–3 times per week. Additionally, although Chinese consumers prefer online channels, Korean consumers show a greater inclination toward visiting physical stores. Chinese consumers predominantly utilize online supermarket malls and platforms for shopping, whereas Koreans prefer online shopping

Table 6. Implication matrix between attributes and consequences of Chinese consumers (n = 200)

	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
1	8|0	5|0	7|0	5|0	1|0	2|0	2|0	1|0	1|0	-	2|0	1|0	-	-	-	-	-	-	1|0	6|0	-
2	30|0	55|0	47|0	11|0	16|0	19|0	14|0	8|0	4|0	3|0	8|0	-	3|0	2|0	1|0	2|0	-	-	1|0	45|0	1|0
3	18|0	19|0	30|0	21|0	30|0	39|0	35|0	10|0	5|0	7|0	5|0	4|0	6|0	3|0	4|0	4|0	-	2|0	1|0	24|0	1|0
4	8|0	10|0	14|0	6|0	5|0	7|0	8|0	8|0	6|0	2|0	2|0	1|0	-	1|0	3|0	-	1|0	-	-	8|0	3|0
5	11|0	6|0	4|0	4|0	2|0	8|0	7|0	5|0	3|0	-	1|0	-	3|0	1|0	3|0	1|0	2|0	-	-	5|0	-
6	1|0	1|0	1|0	3|0	8|0	5|0	5|0	3|0	3|0	1|0	1|0	-	1|0	-	-	-	1|0	1|0	-	1|0	-
7	5|0	8|0	16|0	12|0	13|0	17|0	15|0	12|0	8|0	7|0	1|0	5|0	4|0	-	6|0	-	2|0	3|0	1|0	10|0	2|0
8	3|0	7|0	15|0	6|0	8|0	11|0	15|0	4|0	4|0	2|0	2|0	2|0	2|0	-	-	1|0	1|0	-	1|0	9|0	-
9	5|0	8|0	8|0	10|0	6|0	9|0	5|0	5|0	8|0	1|0	6|0	-	-	3|0	-	2|0	1|0	1|0	1|0	6|0	2|0
10	6|0	10|0	2|0	5|0	7|0	2|0	4|0	3|0	3|0	3|0	2|0	1|0	2|0	2|0	4|0	2|0	1|0	1|0	1|0	-	3|0
11	3|0	2|0	2|0	2|0	1|0	3|0	3|0	1|0	-	3|0	2|0	-	1|0	1|0	4|0	-	-	1|0	2|0	1|0	-
12	1|0	1|0	5|0	11|0	2|0	1|0	3|0	3|0	3|0	-	3|0	-	1|0	-	1|0	1|0	-	-	-	2|0	1|0
13	5|0	4|0	17|0	20|0	8|0	8|0	5|0	5|0	14|0	1|0	3|0	2|0	7|0	7|0	6|0	1|0	-	-	5|0	9|0	2|0
14	7|0	3|0	7|0	5|0	3|0	5|0	9|0	4|0	6|0	6|0	5|0	7|0	5|0	2|0	2|0	3|0	-	1|0	2|0	8|0	3|0
15	1|0	8|0	7|0	7|0	5|0	16|0	10|0	6|0	3|0	7|0	1|0	9|0	10|0	2|0	8|0	2|0	-	2|0	1|0	7|0	2|0
16	10|0	9|0	13|0	6|0	4|0	12|0	15|0	8|0	7|0	8|0	4|0	7|0	6|0	-	3|0	-	2|0	3|0	1|0	10|0	2|0
17	-	1|0	2|0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	1|0	3|0	1|0	2|0	1|0	-	1|0	1|0	-	3|0	-	-	-	-	1|0	-	-	-	-	1|0
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	1|0	-	2|0	2|0	1|0	1|0	-	1|0	-	-	1|0	-	2|0	-	-	-	-	1|0	-
21	2|0	2|0	2|0	-	-	2|0	2|0	-	-	1|0	-	-	1|0	1|0	-	1|0	-	-	-	1|0	-
22	-	1|0	5|0	2|0	2|0	3|0	1|0	1|0	2|0	-	1|0	1|0	1|0	1|0	2|0	-	2|0	-	-	1|0	1|0
23	5|0	2|0	4|0	2|0	1|0	-	2|0	1|0	2|0	-	1|0	-	-	2|0	1|0	3|0	-	-	3|0	1|0	-

0|0, direct linkages; |, indirect linkages; 1–23, attributes; 24–44, consequences.

Table 7. Implication matrix between consequences and values of Chinese consumers (n = 200)

	45	46	47	48	49	50	51	52	53	54
24	36|0	40|0	13|0	10|0	11|0	7|0	6|0	4|0	-	3|0
25	23|0	69|0	27|0	12|0	14|0	6|0	1|0	6|0	3|0	3|0
26	11|0	80|0	35|0	25|0	28|0	15|0	10|0	9|0	2|0	1|0
27	5|0	10|0	56|0	12|0	26|0	6|0	11|0	5|0	5|0	3|0
28	2|0	7|0	10|0	17|0	17|0	21|0	17|0	23|0	7|0	5|0
29	12|0	31|0	6|0	15|0	20|0	24|0	17|0	23|0	12|0	15|0
30	11|0	6|0	10|0	16|0	32|0	11|0	15|0	27|0	16|0	20|0
31	3|0	13|0	8|0	6|0	13|0	15|0	5|0	9|0	9|0	10|0
32	1|0	8|0	35|0	1|0	16|0	1|0	7|0	4|0	3|0	9|0
33	4|0	7|0	5|0	2|0	7|0	-	3|0	5|0	7|0	10|0
34	2|0	16|0	5|0	4|0	9|0	5|0	5|0	1|0	3|0	3|0
35	1|0	4|0	-	3|0	8|0	3|0	2|0	7|0	6|0	6|0
36	3|0	4|0	3|0	1|0	4|0	-	-	6|0	27|0	7|0
37	-	3|0	13|0	1|0	2|0	-	3|0	-	2|0	4|0
38	-	5|0	2|0	5|0	8|0	9|0	6|0	2|0	5|0	8|0
39	2|0	8|0	1|0	1|0	3|0	3|0	1|0	1|0	2|0	2|0
40	1|0	-	2|0	-	1|0	1|0	1|0	4|0	-	3|0
41	1|0	-	-	1|0	2|0	1|0	1|0	-	3|0	6|0
42	-	5|0	3|0	4|0	4|0	1|0	-	-	-	4|0
43	11|0	52|0	33|0	18|0	10|0	7|0	9|0	6|0	7|0	3|0
44	2|0	1|0	-	2|0	2|0	5|0	2|0	2|0	2|0	6|0

0\|0, direct linkages; \|, indirect linkages; 24–44, consequences; 45–54, values.

platforms. Additionally, the study found that Chinese consumers exhibit a higher frequency of using quick commerce and home shopping than their Korean counterparts. Concerning grocery preferences, Korean consumers prefer processed foods, whereas their Chinese counterparts prefer fresh foods.

In analyzing the ACV coding content of Korean and Chinese consumers, significant disparities were observed in terms of attributes, consequences, and values. Korean consumers exhibit greater price sensitivity and prioritize the quality and freshness of food. In contrast, Chinese consumers emphasize more the services provided by suppliers, such as after-sales service. Korean consumers prioritize price comparison and financial savings in online grocery shopping, whereas Chinese consumers prioritize enhancing their online grocery shopping experience by reducing stress and the time cost of problem-solving.

Regarding CPV, Korean consumers prioritize convenience, economic, and trust. In contrast, Chinese consumers exhibit more hedonistic tendencies, valuing

superiority, ease of use, compatibility, and normative factors. These results are consistent with Singh's [41] definition of online grocery shopping consumers. Utilitarian consumers prioritize maximizing their returns on investment, saving more time, and increasing convenience to enhance their shopping experience. Hedonistic consumers prioritize the aspects of fun and emotional awareness when it comes to online grocery shopping.

Additional analysis using the HVM indicated that both Korean and Chinese consumers consider delivery service, reviews, price, freshness, and quality as selection criteria when shopping online. Similar to Choi *et al.*'s [20] findings, both groups regard delivery service as one of the most essential attributes. The findings from both countries indicate that, unlike other grocery shopping methods, the technological benefits of the online channel offer greater convenience to consumers. Home delivery is an indispensable service for achieving convenience. Given that groceries are daily necessities, suppliers must offer various delivery options and times because of the high frequency of consumer purchases.
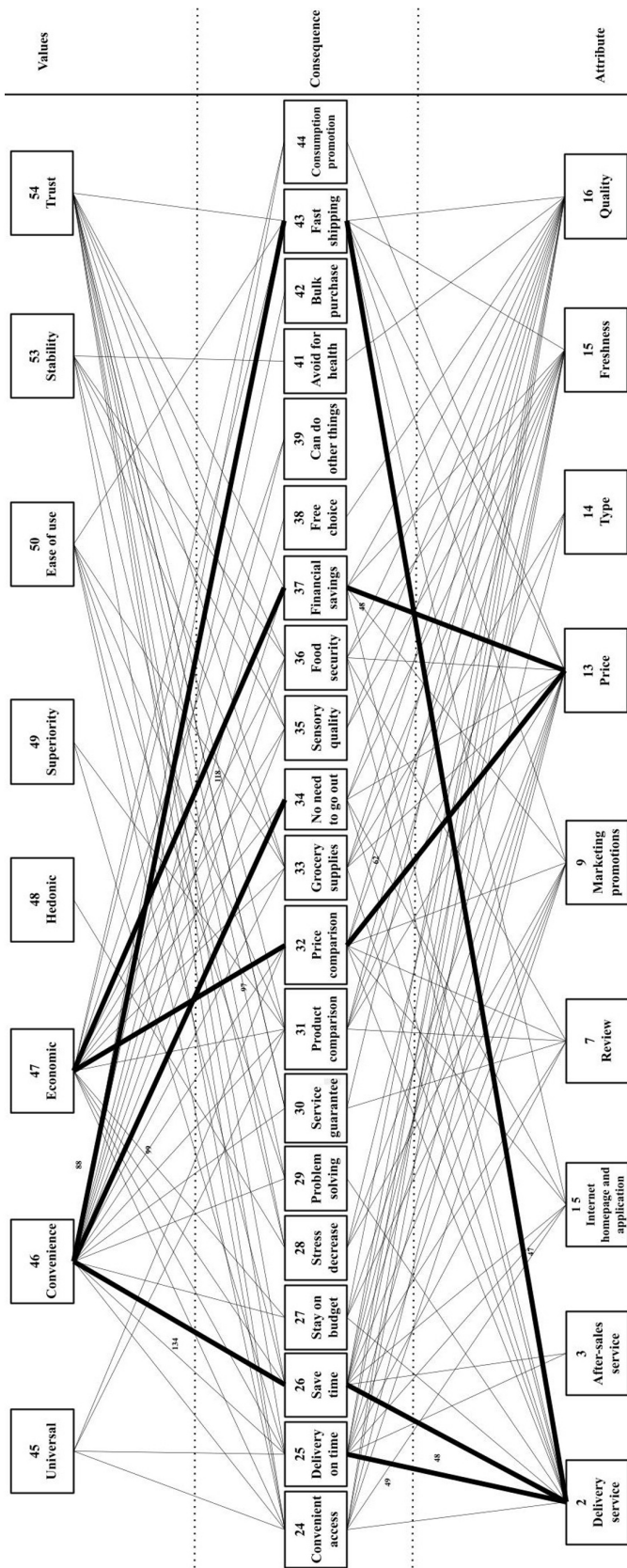
Fig. 1. Hierarchical value map of Korean consumers (cut-off = 7). Links that have less than 7 mentions are not displayed. Each line represents the perceived association of online grocery shopping consumers. The five lines with the highest number of associations are bolded, indicating more referenced associations.
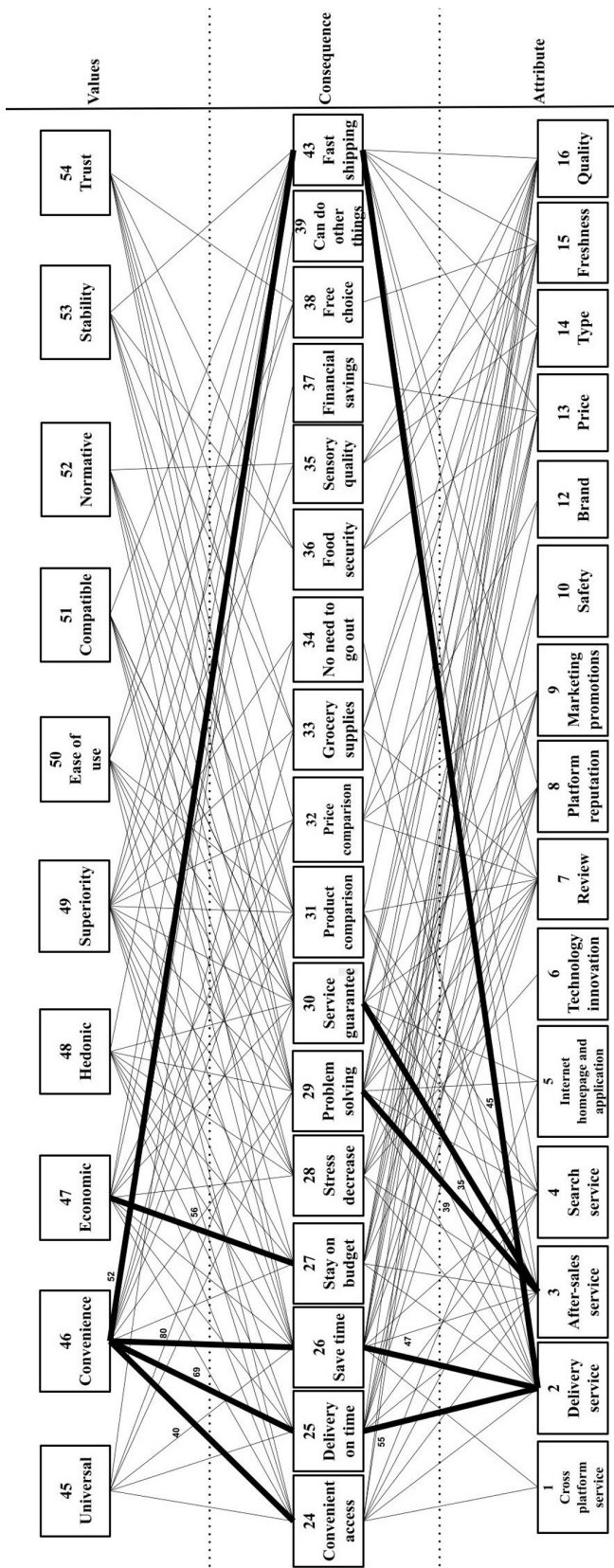
Fig. 2. Hierarchical value map of Chinese consumers (cut-off = 7). Links that have less than 7 mentions are not displayed. Each line represents the perceived association of online grocery shopping consumers. The five lines with the highest number of associations are bolded, indicating more referenced associations.

Without a guaranteed delivery service of the online channel, it is challenging to reflect the convenience advantage of the online channel [41].

The price clearly indicates the economic value associated with online grocery shopping. Additionally, Korean consumers consider factors such as Internet homepages, applications, and marketing promotions. They seek simple and effective ways to compare product prices, so the marketing strategies provided by suppliers may increase consumer purchasing power [42]. Conversely, Chinese consumers prioritize the platform's reputation and after-sales service. This may be because consumers in developing markets are unfamiliar with online suppliers and want to ensure their rights and interests for a better shopping experience. Therefore, they focus on the supplier's after-sales service [21].

There are notable differences in the factors affecting Korean and Chinese consumers from the perspective of MEC as a whole. Korean consumers, being more familiar with online grocery shopping and in a relatively developed market, tend to purchase goods based on their experience. Conversely, since online shopping in China is still in its emerging stage, consumers are more likely to judge food safety and quality by referring to external factors. These cross-country differences can provide new perspectives on the future development of cross-border trade and promote positive consumer adoption through measures such as supplier improvements and service adjustments.

This study has certain limitations. First, it investigated two representative online grocery markets in Asia. Due to social, cultural, and consumer perception differences in other regions, there may be issues of generalizability and applicability when considering consumers in other regions, such as Europe or the Americas. Future research should replicate these online grocery shopping studies with consumers from other countries and perform additional cross-cultural studies to enhance the generalizability of the findings. Second, due to this study's exclusive use of a systematic literature review to confirm the scope of the study, the hard laddering technique may overlook certain factors. Future research should use a combination of soft and hard laddering to explore a more comprehensive hierar-

chical value structure of online grocery shopping consumers. This approach aims to extract more valuable and generalized insights into the CPV of online grocery shopping consumers.

CONCLUSIONS

This study applies the MEC approach to explore the cognitive structure of online grocery shopping and elucidates the impact of service, food, personal, and environmental attributes on CPV. Consumers in various countries consider delivery service, reviews, price, freshness, and quality when shopping online for groceries. However, differences in attribute choices were identified in the cross-country survey. The value proposition of online shopping was demonstrated through HVM. Convenience and economic value are the most important values Korean and Chinese consumers seek in online grocery shopping. Among them, convenience value is mainly driven by delivery services, and this relationship remains consistent across different countries. This study's results can provide more references for managers and researchers in formulating cross-border marketing strategies. In the Korean market, most consumers exhibit price sensitivity and seek a higher return on their investment. Managers can cultivate and maintain the consumer base by providing expedited or more guaranteed delivery services. In the Chinese market, where online grocery shopping is experiencing rapid development in its early to mid-stages, consumers prioritize the service guarantee provided by suppliers in case of any issues. To establish a more stable and loyal consumer base, managers should satisfy consumers' desire for affordable value. Overall, this cross-country study on the CPV of online grocery shopping addresses certain knowledge gaps, and the constructed MEC hierarchy enhances theoretical exploration and enriches the discourse in this field.

CONFLICT OF INTEREST

There are no financial or other issue that might lead to conflict of interest.

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DATA AVAILABILITY

The participants of this study did not give written consent for their data to be shared publicly, so due to the sensitive nature of the research supporting data is not available.

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