Branding Strategies of Platform-Based Online Stores

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Statement of the use of Generative AI

Generative AI technology was not used in the preparation of any part of this thesis.

Abstract

This thesis aims to explore branding strategies of platform-based online stores. Specifically, given that a store brand is shaped by customers' perceptions of various attributes, this thesis focuses on the attributes that create a distinct image for an platform-based online store.

Chapter 1 outlines the research design of this thesis, covering the research background, the significance of online store attributes, the statement of research gaps, the objectives of this thesis, the empirical context, the significance of this thesis, the thesis structure and the research philosophies.

Chapter 2, a literature review of 478 retail brand articles, assesses the research development stage of the four levels of retail brands across offline and online channels and finds that online store brands are in an emerging area of research, requiring more research efforts. Moreover, this chapter proposes the most appropriate term and definition for the store brand, and further identifies and categorizes the attributes of offline and online store brands from the store brand literature, providing a valuable reference for the subsequent empirical studies.

Given that existing research on online store brands primarily focuses on standalone online stores, Chapter 3 aims to identify and categorize the attributes of platform-based online stores, which are now mainstream in retail e-commerce, by conducting thematic analysis of interviews with online customers and store owners. On this basis, Chapter 4 uses the best-worst scaling method to compare the relative importance of these attributes to customers and employs K-means clustering to further explore whether there are distinct customer segments that prioritize specific categories of attributes.

Considering that customers prioritize different store attributes during pre-purchase and post-purchase stages, Chapter 3 and Chapter 4 distinguish between these two stages. Consequently, this thesis creates a well-categorized list of pre-purchase and post-purchase attributes of platform-based online stores and establishes a ranking of their relative importance. The findings reveal significant differences in pre-purchase attributes between standalone and platform-based online stores, as well as between pre-purchase and post-purchase attributes of platform-based online stores. Theoretically, these findings contribute to the advancement of Keller's customer-based brand equity model by extending its application from product or service brands to store brands. Moreover, they also provide valuable

references for further developing new scales for variables measuring pre-purchase and post-purchase brand image of platform-based online stores. Practically, this thesis identifies three distinct customer segments during the pre-purchase and post-purchase stages, respectively, suggesting that online retailers should leverage their strengths and allocate resources to optimize certain store attributes, either to attract customers to place an order or to retain existing customers for repurchase.

Noting that customer service is a key attribute of an online store and existing studies tend to treat chatbots as information technologies rather than service employees in the context of online shopping, chapter 5 examines the varying effects of chatbot service quality dimensions on customers' service choices and the mediating role of perceived shopping enjoyment in this regard using the partial least squares structural equation modeling approach. Results of Chapter 5 reveal that synchronicity and perceived humanness do not have a significant direct impact on customers' intention to choose chatbot services, but understandability and problem-solving do. Moreover, perceived shopping enjoyment fully mediates the impact of synchronicity and humanness, and partially mediates the impact of understandability and problem-solving on customers' intention to choose chatbot services. These findings contribute to chatbot service quality research by uncovering how various dimensions of chatbot service quality influence customers' intention to choose chatbot services and underscore the importance of considering the industry-specific context in which chatbot services are delivered when researching chatbot service quality. Practically, these findings provide valuable references for online retailers on how to optimize chatbot services, thereby encouraging customers to choose chatbot services more frequently.

Finally, Chapter 6 concludes the thesis with a summary of key findings, contributions to the field, limitations of this thesis and suggestions for future research.

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Chapter 1: Introduction

Chapter overview. This chapter outlines the research design of this thesis. First, from a practical perspective, it explains the importance of differentiation strategies for platform-based online stores and the role of store brands and store attributes in this context. Then, it summarizes the gaps present in academic research on online store brands and based on this, proposes the objectives for this thesis. Finally, it concludes with a summary of the significance of this thesis and the thesis structure.

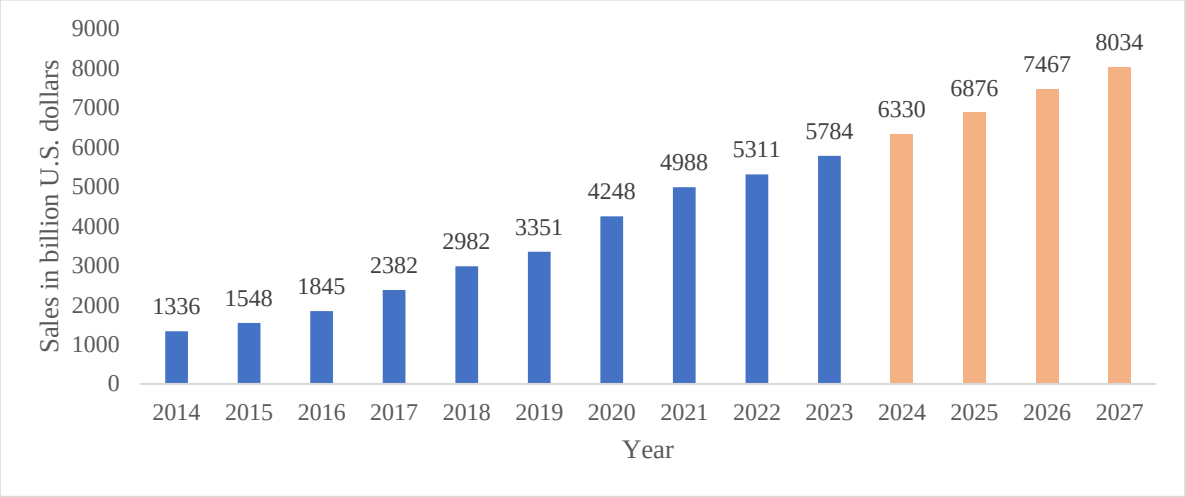
1.1 Background

In the rapidly developing global retail e-commerce market (Statista, 2024a), platforms such as Amazon and Taobao dominate (Statista, 2024b). Moreover, the majority of online stores on these platforms are operated by small and medium-sized enterprises (SMEs) (OECD, 2021), which typically lack brand awareness. Therefore, it is very challenging for an online store to stand out from a large number of similar stores, making the study of feasible differentiation strategies necessary.

1.1.1 Rapid growth in global retail e-commerce

Online shopping has several advantages over offline shopping, offering benefits that cater to the needs of today's consumers. For example, online shopping doesn't require traveling long distances, offers more product variety, remains functional 24*7 and offers huge discounts (Sarkar and Das, 2017). As a result, from 2014 to 2023, global online retail has been experiencing continuous rapid growth, as shown in Figure 1-1 (Statista, 2024a). Notably, in 2023, global online retail sales reached almost 5.8 trillion U.S. dollars, accounting for more than 19% of global retail sales (Statista, 2024c). Projections indicate a 39 percent growth over the coming years, as shown in Figure 1-1, with expectations to surpass eight trillion U.S. dollars by 2027.

Figure 1-1. Retail e-commerce sales worldwide from 2014 to 2027

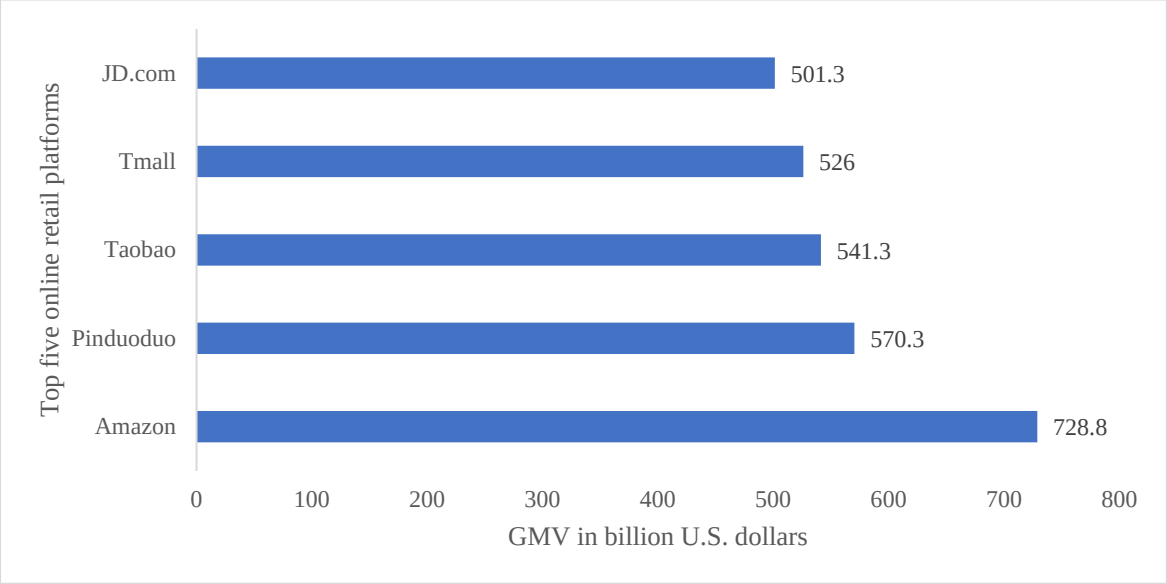


Source: Statista, 2024a

1.1.2. Online retail platforms dominate global retail ecommerce market

Online retail platforms, also known as online retail marketplaces, such as Amazon, eBay, and Taobao, are digital spaces where individual consumers can easily search, browse, compare and purchase products or services from a variety of stores (Song *et al.*, 2020; Yang *et al.*, 2022). Online retail platforms are central in the digital transformation of economies and societies (OECD, 2021). For online retailers, platform-based stores can be easily created and benefit from massive traffic. For customers, online retail platforms provide the convenience of finding everything they need in one place (ECDB, 2024). As a result, nowadays, online retail platforms dominate the global retail e-commerce market, serving as the primary place to search for products online before the actual purchase (Statista, 2024b). In 2023, Amazon, Pinduoduo, Taobao, Tmall and JD.com are the top five online retail platforms in the world, with the total Gross Merchandise Value (GMV) reaching almost three trillion U.S. dollars, as shown in Figure 1-2 (ECDB, 2024).

Figure 1-2. The GMV of top 5 global online retail platforms



Source: ECDB, 2024

Note: GMV encompasses all sales on a platform, including taxes, shipping fees and additional charges, before accounting for discounts or returns. This competitor analysis is based on GMV for the top marketplaces in 2023 by ECDB.

1.1.3 Small and medium-sized enterprises dominate online retail platforms

Online retail platforms provide important channels of growth for small and medium-sized enterprises (SMEs) that are “going digital”, resulting in the majority of platform-based online stores being operated by SMEs (OECD, 2021). For example, over 60% of sales on Amazon’s e-commerce platform come from SMEs (Sheng, 2023). Considering the number of stores, SMEs will account for a significantly larger proportion than the proportion of their sales, since the sales volume of online stores operated by SMEs tends to be relatively low. In the European Union (28 member countries, including the United Kingdom), “small firms selling online are more likely to sell on online platforms (35%) than medium-sized (29%) and large firms (23%)” (OECD, 2021, p. 118). This is primarily because SMEs have too limited resources to develop and promote their own e-commerce websites, so they choose to become third-party sellers on widely known e-commerce platforms, such as Taobao, Amazon or eBay (Gelder, 2024).

1.1.4 An increasing number of online stores use chatbots as default service agents

Chatbots are computer programs powered by artificial intelligence and machine learning (Cheng

et al., 2021), utilizing human languages to interact with users (Rese *et al.*, 2020). In practice, an increasing number of online stores use chatbots as default service agents because they provide a variety of benefits to customers and retailers (Cheng *et al.*, 2021), such as automatically responding to consumers' requests 24 hours a day (Lee and Park, 2022), handling many customer communications simultaneously (Cheng *et al.*, 2021) and reducing the operating costs of retailers (Tran, 2021). However, as a relatively recent technology, chatbots still suffer from providing many irrelevant answers (Sheehan *et al*., 2020), which results in a high rate of service failure and user skepticism (Adam *et al*., 2021). A recent survey by Gartner (Gartner, 2023) reports that only 17% of billing disputes are resolved by customers who used chatbot services at some stages in their purchase journey, while the resolution rate for customers making returns or cancellations is as high as 58%.

1.2 Significance of online store attributes

Creating a strong online store brand, which is primarily shaped by customers' perceptions of various store attributes (Keller, 1993), is an effective differentiation strategy to differentiate it from competitors (Burt and Davies, 2010). Therefore, branding strategies for platform-based online stores are an important area of academic research, with store attributes being the foundation of this field of study.

1.2.1 Branding helps online stores achieve differentiation on competitive online retail platforms

Operating in an increasingly competitive marketplace, retailers have turned to branding in an attempt to differentiate themselves from competitors (Burt and Mavrommatis, 2006; Coelho do Vale and Verga Matos, 2017). Evidence has been given that online customers are willing to buy from a branded online store, even though the price from this store may be higher than that from the competitive online stores. For example, branded online bookstores such as Amazon.com, Barnes & Noble.com and Borders.com may charge higher prices than competitors and still get considerable sales (Kung et al., 2002). These findings align with Ba et al. (2007), who argue that non-price attributes, i.e. a merchant's brand awareness, play important roles in helping online stores to build competitive advantages.

1.2.2 Store attributes shape the distinct brand image of online stores

Based on Keller's definition of brand image (1993), an online store's brand image is formed based

on customers' perceptions of its attributes, which are the descriptive features that characterize the store. This is evidenced by existing store image studies. For example, Silva and Alwi (2006) find that online store attributes, such as ease of use, personalization, security and customer care are significant in determining the brand image of an online store. Bèzes (2014) argues that offering, price, layout, accessibility, promotions, customer service, advice, reputation, institution and connections with other channels can be used to measure online store image.

1.3 Statement of research gaps

Academically, research on online store attributes is limited, with four main gaps identified. First, the majority of research in this area focuses on standalone online stores, which are e-commerce websites developed and operated by retailers themselves (e.g., Ghatak *et al.*, 2016; Rita *et al.*, 2019), rather than platform-based ones, which are now mainstream. Second, most of these studies do not consider the fact that customers may prioritize different store attributes during the pre-purchase and post-purchase stages. In fact, during these two stages, the problems customers face are different, so the online store attributes they value also differ. Third, the research on customers' prioritization of various online store attributes is scarce, with only a few scholars studying standalone online stores in this regard (e.g., Ganesh *et al.*, 2010; Ghatak *et al.*, 2016; Pascoe *et al.*, 2017). Finally, although chatbots are used by platform-based online stores as the default service agency, the majority of scholars primarily treat chatbots as information technology rather than service employees. Hence, more research is needed to understand chatbots' role in influencing customer experience from a service quality perspective in the context of online shopping. These gaps will be discussed in more depth in the following relevant chapters.

1.4 Objectives of this thesis

Considering the background, the significance of online store attributes and the existing research gaps, this thesis aims to achieve the following four objectives:

Objective 1. Noting that existing studies primarily focus on standalone online stores, the first objective of this thesis is to identify the attributes shaping the brand image of platform-based online stores in customers' minds.

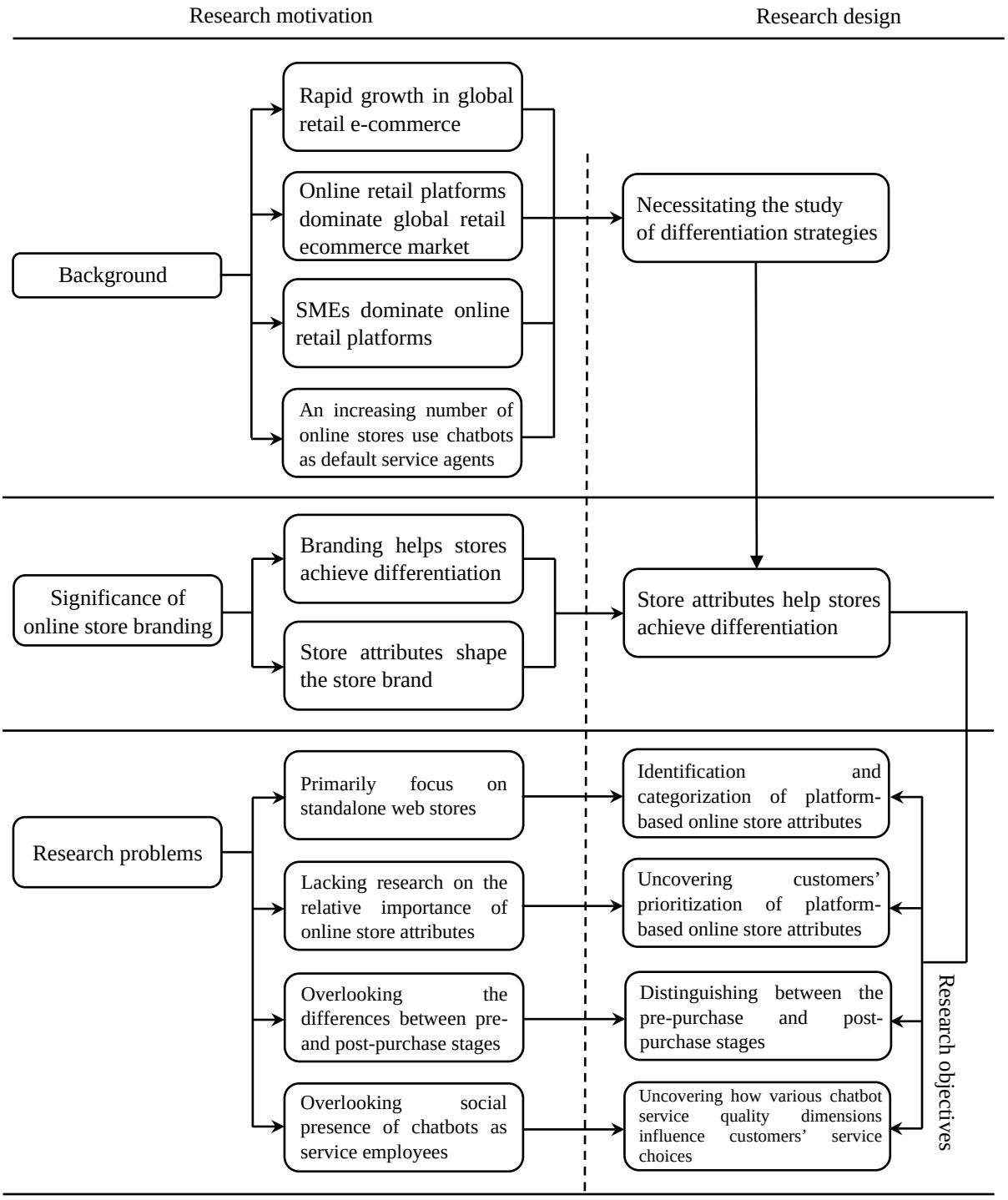
Objective 2. Noting that online stores have a wide range of attributes and customers place varying levels of emphasis on different attributes, the second objective of this thesis is to uncover customers' prioritization of platform-based online store attributes.

Objective 3. Noting that customers prioritize different online store attributes before and after making a purchase, the third objective of this thesis is to distinguish between the attributes of platform-based online stores during the pre-purchase and post-purchase stages.

Objective 4. Noting that existing studies overlook the social presence of chatbots as service employees and the online shopping context in which they provide services, the fourth objective of this thesis is to uncover how various dimensions of chatbot service quality influence customers' service choices and the role of perceived shopping enjoyment in this relationship.

The following Figure 1-3 shows the research framework of this thesis.

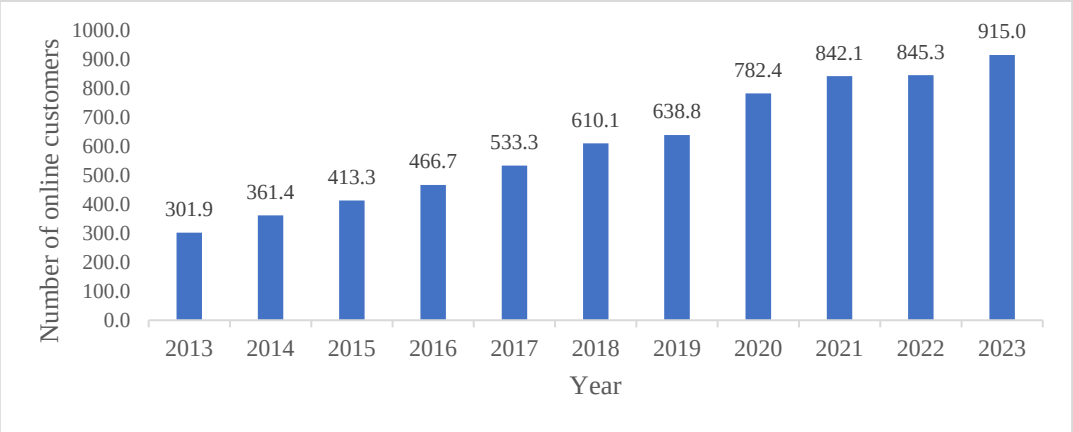
Figure 1-3. Research framework



1.5 Empirical context: Taobao stores in China

This thesis focuses on Chinese Taobao stores as the object of research due to the following two reasons. First, China's online retail sales rank first worldwide (AsiaPac Net Media, 2023). In 2023, China's total online retail sales reached 15.43 trillion yuan, with a year-over-year increase of around 12 percent (Statista, 2024d), accounting for almost half of the country's retail transactions (Statista, 2024a). This is primarily due to the continuous increase in the number of online shoppers in China, as shown in Figure 1-4 (Statista, 2024e). Moreover, broad and deep mobile penetration, an unprecedented rise in mobile payments, a vast logistics ecosystem and a lack of retail infrastructure in lower-tier cities also contribute to the development of China's retail e-commerce market (HSBC, 2018).

Figure 1-4. The cumulative number of online shoppers in China from 2013 to 2023



Source: Statista, 2024e

Second, among China's major retail e-commerce platforms, Taobao and Tmall, which share the same platform, continue to maintain their industry-leading position (Statista, 2024b). According to Sandalwood's e-commerce monitoring data, in 2023, Taobao and Tmall accounted for 45% of the total sales of the six leading retail e-commerce platforms in China, namely, Jingdong, Taobao, Tmall, Douyin, Kuaishou and Pinduoduo (Feng, 2024).

1.6 Significance of this thesis

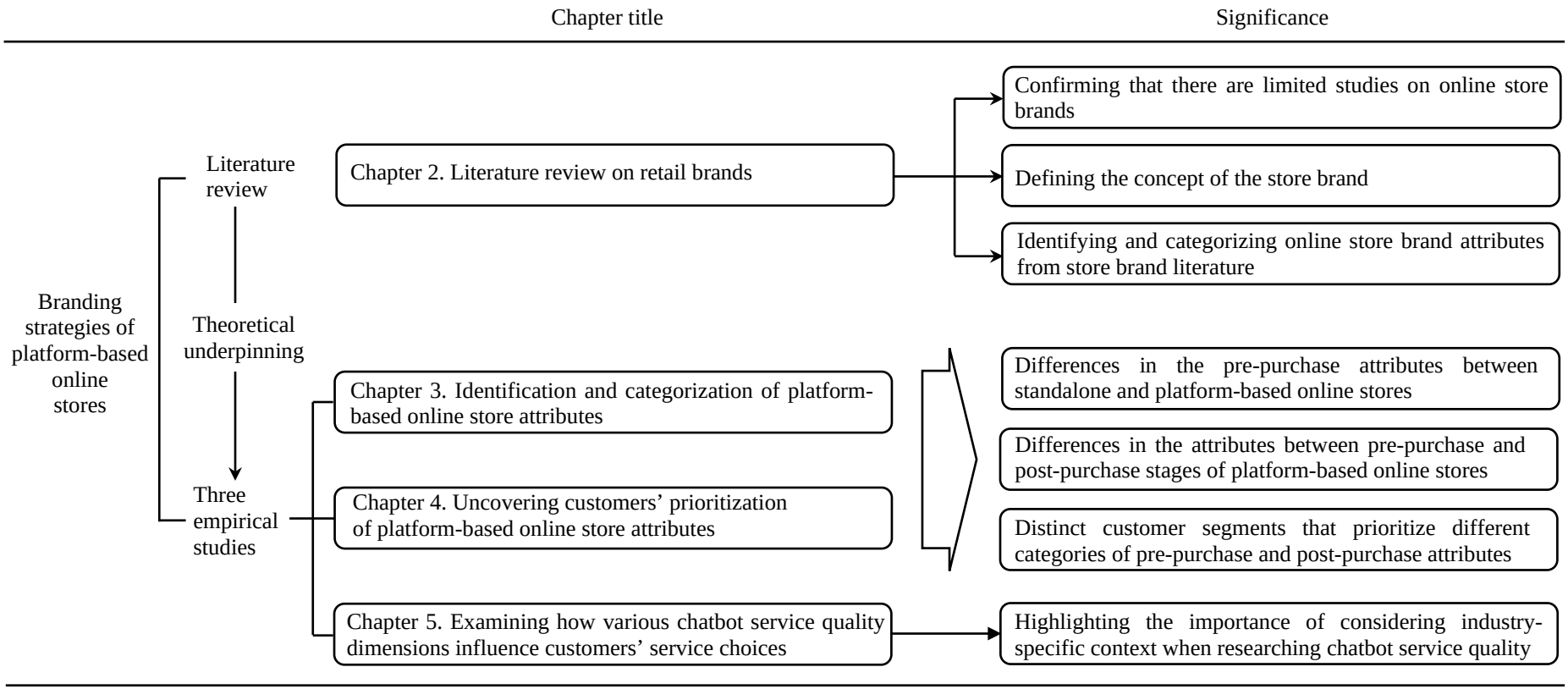
This is the first study that focuses on identifying and categorizing the pre-purchase and post-purchase attributes influencing the brand image of a platform-based online store (Chapter 3), as well as on customers' prioritization of these attributes (Chapter 4). Thus, the results not only contribute to the

advancement of research on online store brands but also help online retailers thoroughly evaluate their pre-purchase and post-purchase store brand images, identify areas where their store excel and determine where improvements are needed, ultimately enabling them to create stronger store brands. Finally, Chapter 5 contributes to the research field of service quality by highlighting the industry-specific context in which chatbot services are delivered when researching chatbot service quality. Practically, the research findings can guide online retailers to improve the service quality of chatbots, thereby enhancing customers' intention to choose chatbot services when shopping online.

1.7 Thesis structure

The structure of the thesis is presented in Figure 1-5. This thesis starts with an introduction, followed by a review of retail brand literature, then presents three empirical studies, and finally concludes with a summary of findings, contributions, limitations and future research suggestions. Chapter 2 assesses the research development at each level of retail brands, defines the concept of a store brand and identifies the attributes of offline and online store brands from the store brand literature. Chapter 3 utilizes a qualitative method, thematic analysis of interviews with 33 online customers and 15 online store owners, to identify the pre-purchase and post-purchase online store attributes that customers are concerned about in the current retail environment, respectively. Chapter 4 employs a quantitative method, Best-Worst scaling, to compare the importance of various pre-purchase and post-purchase online store attributes to customers, respectively. Furthermore, K-means clustering is utilized to identify distinct customer segments that prioritize different pre-purchase and post-purchase attributes. Chapter 5 reveals the varying effects of various chatbot service quality dimensions on customers' service choices and the mediating role of perceived shopping enjoyment in these relationships, using the partial lease squares structural equation modeling approach. Finally, this thesis is concluded by summarizing findings, contributions, limitations and future research suggestions.

Figure 1-5. Thesis structure



1.8 Research philosophy

"The term research philosophy refers to a system of beliefs and assumptions about the development of knowledge" (Saunders *et al.*, 2019, p. 130). It encompasses the underlying principles and assumptions about how knowledge is generated, gathered, analyzed and interpreted in a specific field of study. This thesis refers to the research onion model proposed by Saunders et al. (2019) in their book titled "Research Methods for Business Students" to determine the research philosophies guiding the research work.

1.8.1 Major research philosophies in business study

In business and management, the five major philosophies are: positivism, critical realism, interpretivism, postmodernism and pragmatism, as shown in Table 1-1 and detailed below (Saunders *et al.*, 2019). Moreover, three types of research assumptions are used to distinguish research philosophies: ontology, epistemology and axiology. Specifically, "ontology refers to assumptions about the nature of reality; epistemology refers to assumptions about knowledge, what constitutes acceptable, valid and legitimate knowledge, and how we can communicate knowledge to others; axiology refers to the role of values and ethics" (Saunders *et al.*, 2019, pp. 133-134).

Table 1-1. Comparison of five research philosophies in business and management research

Ontology (nature of reality or being)	Epistemology (what constitutes acceptable knowledge)	Axiology (role of values)	Typical methods
	Positivism		
Real, external, independent One true reality (universalism) Granular (things) Ordered	Scientific method Observable and measurable Facts Law-like generalisations Numbers Causal explanation and prediction as contribution	Value-free research Researcher is detached, neutral and independent of what is researched Researcher maintains objective stance	Typically deductive, highly structured, large samples, measurement, typically quantitative methods of analysis, but a range of data can be analysed
	Critical realism		
Stratified/layered (the empirical, the actual and the real) External, independent Intransient Objective structures Causal mechanisms	Epistemological relativism Knowledge historically situated and transient Facts are social constructions	Value-laden research Researcher acknowledges bias by world views, cultural experience and upbringing	Retrodictive, in-depth historically situated analysis of pre-existing structures and emerging agency Range of methods and data types to fit subject matter

	Historical causal explanation as contribution	Researcher tries to minimize bias and errors Researcher is as objective as possible	
Interpretivism			
Complex, rich Socially constructed through culture and language Multiple meanings, interpretations, realities Flux of processes, experiences, practices	Theories and concepts too simplistic Focus on narratives, stories, perceptions and interpretations New understandings and worldviews as contribution	Value-bound research Researchers are part of what is researched, subjective Researcher interpretations key to contribution Researcher reflexive	Typically inductive. Small samples, in-depth investigations, qualitative methods of analysis, but a range of data can be interpreted
Postmodernism			
Nominal Complex, rich Socially constructed through power relations Some meanings, interpretations, realities are dominated and silenced by others Flux of processes, experiences, practices	What counts as 'truth' and 'knowledge' is decided by dominant ideologies Focus on absences, silences and oppressed/repressed meanings, interpretations and voices Exposure of power relations and challenge of dominant views as contribution	Value-constituted research Researcher and research embedded in power relations Some research narratives are repressed and silenced at the expense of others Researcher radically reflexive	Typically deconstructive – reading texts and realities against themselves In-depth investigations of anomalies, silences and absences Range of data types, typically qualitative methods of analysis
Pragmatism			
Complex, rich, external "Reality" is the practical consequences of ideas Flux of processes, experiences and practices	Practical meaning of knowledge in specific contexts "True" theories and knowledge are those that enable successful action Focus on problems, practices and relevance Problem solving and informed future practice as contribution	Value-driven research Research initiated and sustained by researcher's doubts and beliefs Researcher reflexive	Following research problem and research question Range of methods: mixed, multiple, qualitative, quantitative, action research Emphasis on practical solutions and outcomes

Positivism. Positivism relates to the philosophical stance of the natural scientist and entails working with an observable social reality to produce law-like generalizations. It focusses on strictly

scientific empiricist methods designed to yield pure data and facts uninfluenced by human interpretation or bias.

Critical realism. Critical realism focuses on explaining what we see and experience, in terms of the underlying structures of reality that shape the observable events. Critical realists see reality as external and independent, but not directly accessible through our observation and knowledge of it. Rather, what we experience is “the empirical”, in other words sensations, which are some of the manifestations of the things in the real world, rather than the actual things.

Interpretivism. Interpretivism is a research philosophy that emphasizes understanding social phenomena from the perspective of the individuals involved. Interpretivists are critical of positivist attempts to discover definite, universal “laws” that apply to everyone because people from different cultural backgrounds, under different circumstances and at different times make different meanings and thus create and experience different social realities.

Postmodernism. Postmodernism emphasizes the role of language and of power relations, seeking to question accepted ways of thinking and give voice to alternative marginalized views. They believe that any sense of order is provisional and foundationless and can only be brought about through our language with its categories and classifications (Chia, 2003). Moreover, what is generally considered to be “right” and “true” is decided collectively. These collective “choices”, in turn, are shaped by the power relations and by the ideologies that dominate particular contexts (Foucault 1991).

Pragmatism. Pragmatism asserts that concepts are only relevant where they support action. For pragmatists, research starts with a problem and aims to contribute practical solutions that inform future practice. They consider theories, concepts, ideas, hypotheses and research findings not in an abstract form, but in terms of the roles they play as instruments of thought and action, and in terms of their practical consequences in specific contexts.

1.8.2 Research philosophies guiding this thesis

This thesis employs various methods and collects data from multiple sources to explore several research questions, thus following multiple research philosophies, as detailed below.

Pragmatism. This thesis investigates the branding strategies of platform-based online stores. The

findings provide practical guidance for retailers in building a strong brand image for platform-based online stores. Moreover, the empirical data, including interviews with online store owners and customers, as well as online surveys of customers' online shopping experiences, are all derived from participants' practical behavior. Therefore, pragmatism is one of the research philosophies followed in this thesis.

Interpretivism. This thesis employs inductive thematic analysis to analyze interviews and store brand literature. This approach is well-aligned with the interpretivist research philosophy because it focuses on understanding and interpreting the meanings of online store attributes and the experiences of customers within the context of online shopping. Moreover, this thesis also identifies distinct customer segments based on differences in the importance customers place on various platform-based store attributes and further analyzes the demographic characteristics of these segments. This aligns with the interpretivist research philosophy of understanding social phenomena from the perspective of the individuals involved.

Critical realism. Building on the inductive thematic analysis of interviews and store brand literature, this thesis further employs deductive thematic analysis, using the intrinsic attribute-extrinsic attribute and attribute-benefit-attitude frameworks derived from Keller's customer-based brand equity model, as well as the stimulus-organism-response framework, as predefined themes to classify different pre-purchase and post-purchase attributes into various categories. This aligns with critical realism's emphasis on exploring the underlying structures of reality that shape the observable events.

Chapter 2: Literature review on retail brands

Chapter overview. This chapter reviews 478 retail brand articles. It first introduces the literature collection process, and then assesses the development stage of the four levels of retail brands, uncover the connotation of a store brand and identify the attributes of offline and online store attributes. Finally, it concludes with a discussion of contributions, limitations of this review and future research suggestions.

2.1 Introduction

Within retailing, the brand concept has been traditionally applied at four levels: the branding of retailers' own products, stores, retail platforms and their companies (Burt and Davies, 2010; Merrilees *et al.*, 2016). Figure 2-1 presents the brand names of the four levels of retail brands used by Lotte, Carrefour and Alibaba. The umbrella term for various retail brand concepts is referred to as "retail brand", which primarily encompasses the following four levels: (1) own product brands, which refer to the brands used by the products developed, owned and sold exclusively by the retailers themselves, such as "Bonbater" and "Miaomanfen" in the Tmall supermarket; (2) store brands, which refer to the brands used by the stores, where retailers sell a variety of products to customers, such as Carrefour's convenient store brands "Proxi" and "Carrefour Bio"; (3) platform brands, which refer to the brands used by the retail platforms, where retailers meet customers' diverse needs with tenants' or their own stores, such as Taobao and Tmall, two online retail platforms under Alibaba group; (4) retailer brands, which refer to the brands used by companies involved in various retail business, such as Carrefour, Inc and Alibaba group. (Chen *et al.*, 2023).

Figure 2-1. Four levels of retail brands of Lotte, Carrefour and Alibaba

Brand level	Brand scope	Brand names used by Lotte	Brand names used by Carrefour	Brand names used by Alibaba
Retailer brand	A retail company as a whole, or retail part of a diversified company	Lotte	Carrefour	Alibaba
Platform brand	Department store	Lotte department store	/	/
	Shopping mall	Lotte world mall	Carmila	Qinchengli
	E-commerce platform	Lotte.com	/	Taobao, Tmall
Store brand	Offline supermarket	Lotte Super	Carrefour Market	Freshhema
	Online Supermarket	Lotte e-super	Ooshop	Tmall supermarket, Freshhema APP
	Convenience store	Korea Seven	Proxi, Carrefour Bio	Taocafe, EGO
	Health & Beauty Store	LOHB'S	/	Ali health Pharmacy
	An electronic appliance store	Lotte himart	/	/
Own Product brand	Products that are owned, controlled and sold exclusively by a retailer	Herbon, Wiselect, Withone, Basicicon, Tasse Tasse, Gerard Darel, Choice L Gold	Carrefour, Simpl, Cookie Place, Crumbies, Montmartre coffee and De Nuestra Tierra	Tmall supermarket: Bonbater, Miaomanfen Freshhema: Everyday Fresh, Emperor Fresh, Hema Workshop, Sweet Tao village

Note: The information about brand names was collected from the websites of each retail company and its subsidiaries. These brand names are only part of the brand names they use, not all of them.

When looking into the literature on retail brands, 15 literature reviews published from 2000 to 2023 have been found. Although these literature reviews have given important insights in synthesizing the research findings on retail brands, they primarily focus on retailers' own product brands, with limited reviews covering store brands, as shown in Table 2-1. Moreover, there is no review on retailer brands and retail platform brands. This makes it difficult to determine which of the four levels of retail brandresearch is more mature and which requires more research effort. Therefore, the first objective of this review is to assess which level of retail brands, further distinguished between online and offline channels, is more worth researching.

Table 2-1. Literature reviews on retail brands identified in this review

Author, year	Title	Focus	Retail brand concept	Journal	Citation
Burt, 2000	The strategic role of retail brands in British grocery retailing	-Factors affecting the performance of own product brands	Own product brand	European journal of marketing	602
Ailawadi and Keller, 2004	Understanding retail branding: conceptual insights and research priorities	*Store brand:* -Attributes of store brands *Own product brand:* -Customer characteristics -Benefits to retailers -Category attributes	Own product brand Store brand	Journal of retailing	1870
Bergès-Sennou *et al.*, 2004	Economics of private labels: A survey of literature	-Factors affecting the performance of own product brands -Benefits to retailers and manufacturer brands -The competitive response of manufacturer brands	Own product brand	Journal of Agricultural & Food Industrial Organization	236
Sethuraman, 2009	Assessing the external validity of analytical results from national brand and store brand competition models	-Competition between own product brands and manufacturer brands	Own product brand	Marketing science	132
Huang and Huddleston, 2009	Retailer premium own-brands: creating customer loyalty through own-brand products advantage	- Factors affecting the performance of own product brands	Own product brand	International Journal of Retail & Distribution Management	208
Hyman *et al.*, 2010	Review of literature - future research suggestions: Private label brands: Benefits, success factors and future research	-Benefits to retailers and manufacturer brands - Factors affecting the performance of own product brands	Own product brand	Journal of Brand Management	222
Burt and Davies, 2010	From the retail brand to the retail-er as a brand: themes and issues in retail branding research	-Summarize the themes of own product brand research -The evolution of retail brand concepts in retail research	Own product brand Store brand Retail corporate brand	International Journal of Retail & Distribution Management	219

Gooner and Nadler, 2012	Abstracting empirical generalizations from private label brand research	-Factors affecting the performance of own product brands -Factors affecting customers' purchase behaviour	Own brand	product	Journal of Marketing Theory and Practice	56
Sethuraman and Raju, 2012	The competition between national brands and store brands: Models, insights, implications, and future research directions	-Competition between own product brands and manufacturer brands	Own brands	product	Foundations and Trends in Marketing	12
Sethuraman and Gielens, 2014	Determinants of store brand share	- Factors affecting the performance of own product brands	Own brand	product	Journal of Retailing	200
Muruganantham and Priyadharshini, 2017	Antecedents and consequences of private brand purchase A systematic review and a conceptual framework	-Factors affecting customers' purchase behaviour	Own brand	product	International Journal of Retail and Distribution Management	49
Riboldazzi *et al.*, 2021	Private-label consumer studies: A review and future research agenda	-Factors affecting customers' purchase behaviour	Own brand	product	International Journal of Consumer Studies	5
Wu *et al.*, 2021	Private label management: A literature review	-Strategic response of five stakeholders (retailers, manufacturer brands, suppliers, customers and competitors) to the introduction of own product brands	Own brand	product	Journal of Business Research	18
Gielens *et al.*, 2021	The Future of Private Labels: Towards a Smart Private Label Strategy	-Evolution of own product brands	Own brand	product	Journal of retailing	**57**
Keller *et al.*, 2022	Adding budget and premium private labels to standard private labels: Established empirical generalizations, emerging empirical insights, and future research	-Benefits and success factors of multi-tier branding strategy	Own brand	product	Journal of retailing	**1**

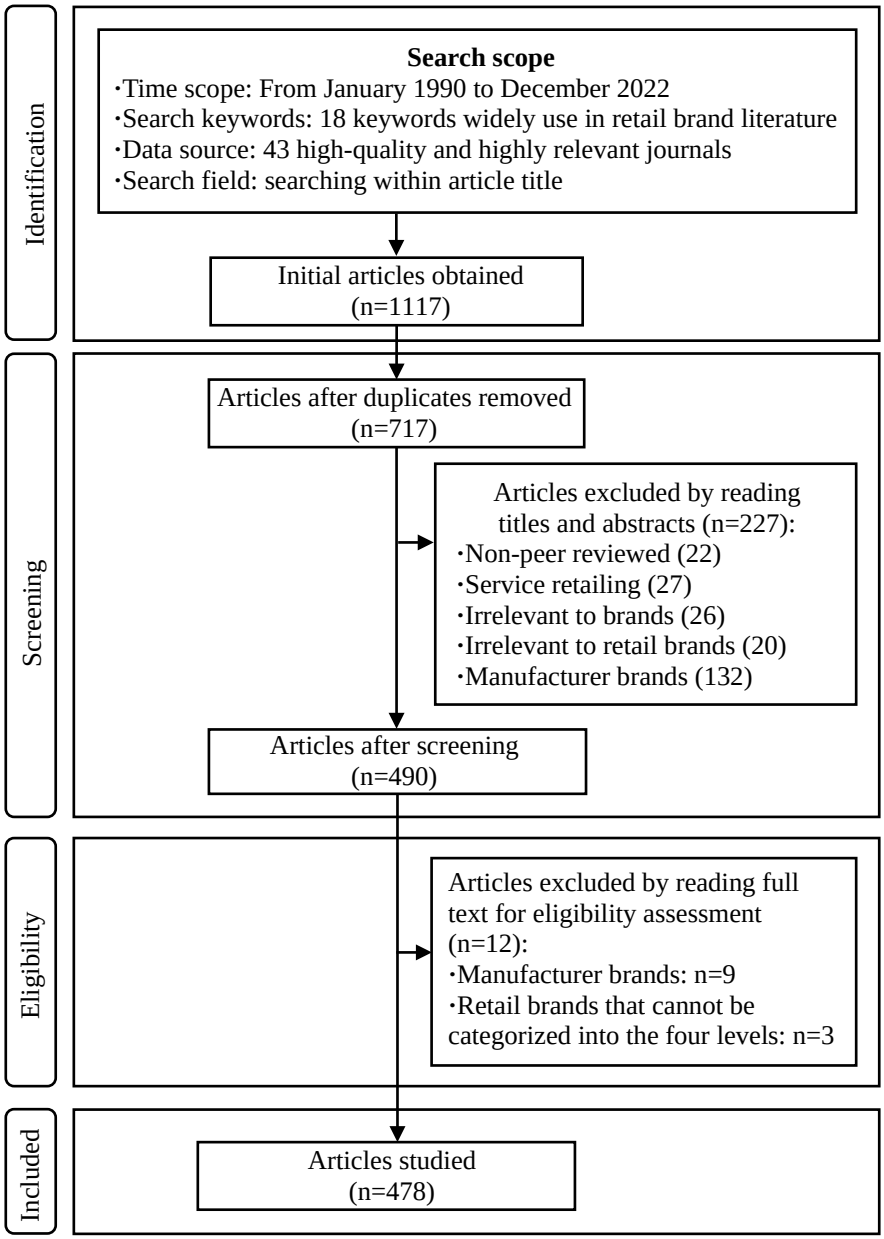
Moreover, researchers have developed various terms to describe the concept “store brand”, such as retail brand (Zentes *et al.*, 2008), retailer brand (Ailawadi and Keller, 2004), retail corporate brand (Dwivedi and Merrilees, 2016) and store brand (Baek *et al*., 2020). However, using synonyms to describe a concept, whether correct or incorrect, will lead to confusion of this concept (Singh and Thurman, 2019). Therefore, the second objective of this review is to propose the most appropriate term and definition for the concept of “store brand”, laying the foundation for subsequent empirical studies.

Finally, although this thesis aims to identify the platform-based online store attributes that customers are concerned about in the current online retail environment through thematic analysis of interviews with online customers and store owners, existing literature on offline and online store brands also offers valuable insights into which online store attributes matter to customers, thereby providing a useful reference for subsequent empirical studies of this thesis. Therefore, the third objective of this review is to identify and categorize offline and online store attributes from existing store brand literature.

2.2 Data collection

This review followed the Preferred Reporting Items for Systematic Review and Meta-analyses (PRISMA) (http://prisma-statement.org/) Guide to create a collection of relevant articles, as illustrated in Figure 2-2.

Figure 2-2. PRISMA flow diagram of the article selection process



2.2.1 Setting the search scope

Time scope. The time scope for this review, from January 1990 to December 2022, was determined by two reasons. Academically, a systematic review by Wu *et al*. (2021) indicates that the annual publication number before 1990 was insignificant in the research field of retail brands (1 paper per year on average). Practically, e-commerce started its growth in the 1990s (Santos *et al*., 2017). Therefore, starting the time scope from 1990 not only offers a comprehensive overview of relevant research in this field, but also aligns with this review's coverage of retail brands across both online and offline retail channels.

Search keywords. Aligning with Veloutsou and Liao (2023), the "backward and forward approaches" were employed to identify search keywords. Firstly, the primary concept of "retail brand" was used to obtain five first-round articles. Second, the "backward approach" was employed by examining references of these first-round articles to find previous retail brand articles they cited. Third, in the forward process, Google Scholar was used to access retail brand articles that cited the first-round articles. Consequently, a total of 50 articles on retail brands were obtained, from which 18 keywords widely used in the literature were identified by reading titles, abstracts and keywords, including retail brand(ing), retailer brand(ing), store brand(ing), private label, private brand, own label, own brand, shop brand(ing), supermarket brand(ing), mall brand(ing) and platform brand(ing).

Data source. In line with previous systematic reviews published in top business journals (e.g., Lim *et al.*, 2021; Parris and Guzmán, 2023), high-quality and highly relevant journals were selected as data sources, ensuring comprehensive coverage of articles in this research field and the consistency of article quality. (1) High-quality journals. A or A* ranked journals in the 2022 Australia Business Deans Council (ABDC) journal quality list were considered high-quality journals. The ABDC journal quality list was chosen over the JCR and Scopus journal ranking lists for two reasons. First, in the JCR and Scopus journal ranking lists, the journals could appear in multiple research fields with different quality rankings (i.e., Q1/Q2 in one field but Q3/Q4 in another), which creates more confusion than clarity. Second, the ABDC journal quality list transcends beyond simply using citations as a quality measure, considering the prestige and rigor of these journals among peers in the field (Lim *et al.*, 2021). (2) Highly relevant

journals. Noting that approximately 85% of retail brand articles were published in journals related to retail, marketing and brand (Riboldazzi *et al.*, 2021; Wu *et al.*, 2021), journals in these three fields were considered highly relevant. In addition, this thesis expanded the scope of journals to encompass the fields of e-commerce, behaviour and services. After removing irrelevant journals in banking, tourism, and hospitality, and including two B-ranked journals related to retail, 43 journals were obtained. Notably, these selected journals encompass all the journals ranked 4*, 4 and 3 in the same field of the Chartered Association of Business Schools (CABS) journal quality guide. In terms of the database, a specific database cannot guarantee the comprehensive coverage of all selected journals within the chosen time scope. For example, the "Journal of Retailing" was first indexed in Scopus in 1993. Therefore, this chapter relied on multiple databases, including Scopus, the largest database of academic articles (Veloutsou and Ruiz-Mafe, 2020), as well as other databases such as the WOS and EBSCO.

2.2.2 Article screening

Inclusion and exclusion criteria. In addition to the abovementioned search scope, three criteria were established for article screening. (1) Article type. This review targets peer-reviewed articles and excludes editorials and book reviews. (2) Retail industry. Following the United States industrial classification code system (SICCODE, n.d.), the retail industry excludes the retailing aspects that exist within the purely service sector, namely, the financial, banking, hospitality and education sectors. (3) Retail brands. Retail brands refer to the brands associated with retailers' own products, stores, retail platforms and retail companies (Chen *et al.*, 2023), excluding brands irrelevant to retailing, the product brands of manufacturers and retail brand concepts cannot be categorized into the four levels of retail brands.

Article screening process. Based on the abovementioned search scope, 1,117 articles were retrieved initially using the "searching within article title" option. After removing duplicates, 717 articles remained for further screening. A two-stage screening method was adopted by applying the inclusion and exclusion criteria. First, articles were screened by reading their titles and abstracts. In many cases, inadequate information in abstracts made it difficult to determine whether some articles meet inclusion criteria (Nolan and Garavan, 2016), so these articles were then included in the second

screening stage, i.e., reading the full text. Following this process, 478 articles were obtained for this review.

2.2.3 Data description

Article distribution by journals. The 478 articles were published in 33 journals, as documented in Table 2-2. The five journals with the greatest number of publications were the “International Journal of Retail and Distribution Management”, “Journal of Retailing and Consumer Services”, “Journal of Product and Brand Management”, “International Review of Retail, Distribution and Consumer Research” and the “Journal of Retailing”. From the perspective of journal types, 264 articles (55.2%) were published in four retail-related journals and 72 articles (15.1%) in two brand-related journals. Therefore, retail and brand-related journals could be prioritized when searching for references or submitting research.

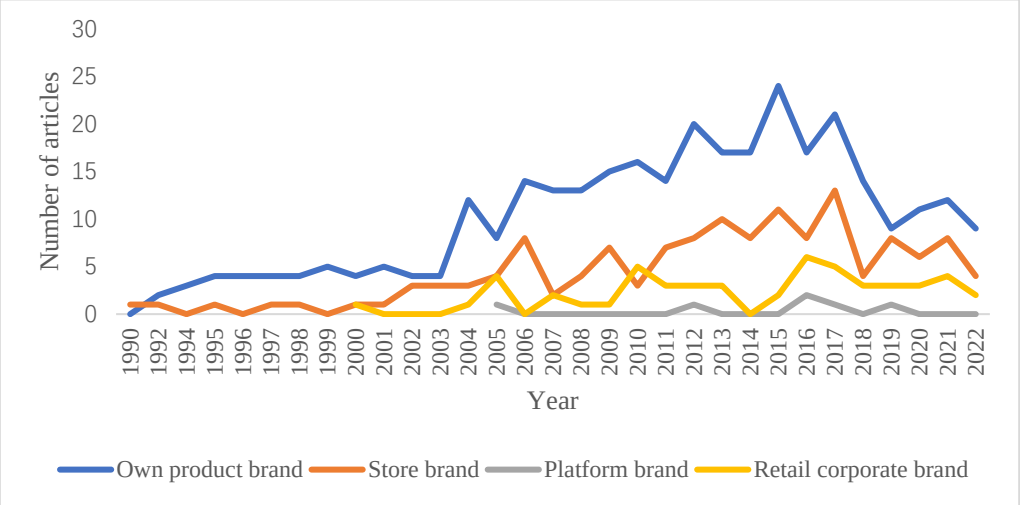
Table 2-2. Article distribution by journals

Journal	Own product brand	Store brand	Platform brand	Retailer brand	Total	Percentage	Sum of citation
International Journal of Retail & Distribution Management	50	34	1	21	96	20.1%	10544
Journal of Retailing and Consumer Services	61	35		4	89	18.6%	8745
The Journal of Product & Brand Management	42	14	1	4	55	11.5%	7894
The International Review of Retail, Distribution and Consumer Research	26	16	1	6	45	9.4%	2286
Journal of Retailing	21	10		2	34	7.1%	9376
European Journal of Marketing	15	1		5	21	4.4%	2627
The Journal of Brand Management	9	5	1	3	17	3.6%	764
Journal of Marketing Management	11	2		3	16	3.3%	1162
The Journal of Consumer Marketing	13	2			13	2.7%	1696
Australasian Marketing Journal	6	4		3	11	2.3%	1428
Journal of Marketing Research	9	1			10	2.1%	2966
Marketing Science	10				10	2.1%	2819
Journal of Marketing	9				9	1.9%	6122
International Journal of Research in Marketing	6				6	1.3%	1021
Psychology & Marketing	5	2			6	1.3%	257
Journal of the Academy of Marketing Science	3	1			4	0.8%	1068
Marketing Intelligence & Planning	2	1	1		4	0.8%	120
Marketing Letters	4				4	0.8%	414
Electronic Commerce Research	2	1			3	0.6%	54
Industrial Marketing Management	3				3	0.6%	104
International Marketing Review	3	1			3	0.6%	130
Quantitative Marketing and Economics	3				3	0.6%	298

The Journal of Business & Industrial Marketing	3				3	0.6%	112
Journal of International Marketing	1	1			2	0.4%	343
Journal of Strategic Marketing	1	1			2	0.4%	25
The Journal of Services Marketing		2			2	0.4%	86
Computers in Human Behavior		1			1	0.2%	63
International Journal of Electronic Commerce			1		1	0.2%	173
International Journal of Strategic Property Management		1			1	0.2%	64
Journal of Interactive Marketing		1			1	0.2%	219
Journal of Service Management		1		1	1	0.2%	236
Journal of Service Research		1			1	0.2%	215
Marketing Theory	1				1	0.2%	13

Article distribution by the year of publications. Figure 2-3 shows the article distribution by the year of publications, which indicates that: (1) Retailer brand and retail platform brand have received limited attention; (2) The number of publications about own product brand reached its peak in 2015 and then declined, suggesting a possible saturation point had been reached for this research topic.

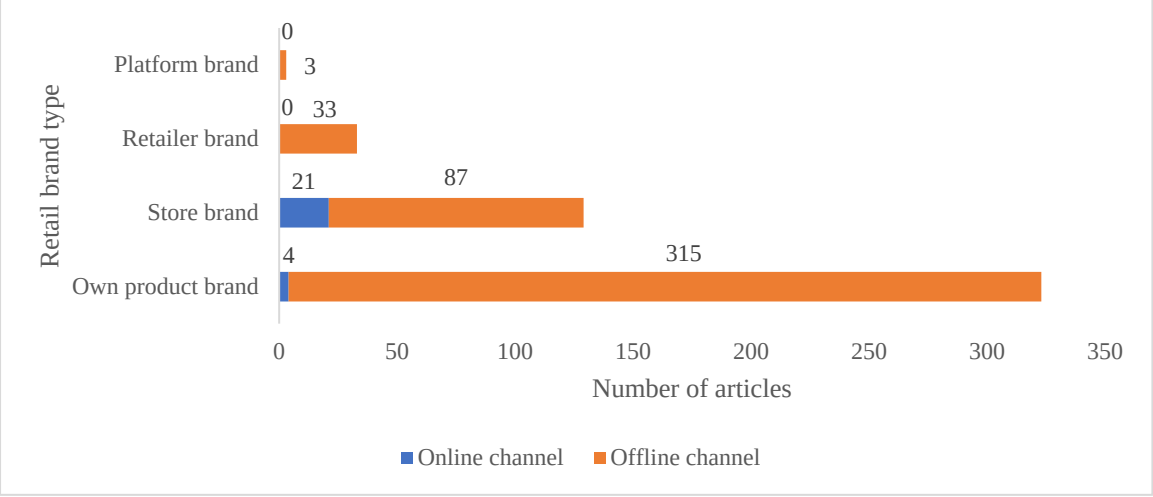
Figure 2-3. Article distribution by the year of publications



2.3 Evaluate the research development related to each level of retail brands

In this section, the review distinguishes between the online and offline presence of four levels of retail brands, covering 463 articles from 1990 to 2021, with their distribution across these two channels shown in Figure 2-4 below. It can be seen that all online retail brands receive much less attention than their corresponding offline retail brands.

Figure 2-4. Article distribution by the level of retail brands



Note: 0 means there is no article related to that retail brand concept.

2.3.1 Data analysis

(1) Two metrics

To evaluate the research development related to each retail brand concept, this thesis developed two metrics, the relative total research output and the relative research growth rate over the last 4 years, based on the number of publications related to each retail brand concept.

The relative total research output (RTRO) is calculated as the difference between the number of publications that are related to one retail brand concept for our sample period and the average number of publications of all eight retail brand concepts. The RTRO allows us to evaluate if the research related to one retail brand concept is relatively richer or poorer than that of other retail brand concepts. A positive RTRO value suggests that one retail brand concept has more research output than the average output for all eight retail brand concepts, and vice versa.

The relative research growth rate (RRGR) is calculated following two steps: firstly, the research growth rate is calculated as the difference between the average number of publications related to one retail brand concept over the last four years and the average number of publications related to the same concept since its first publication over the defined time period, and then divided by the latter. Secondly, the relative research growth rate is calculated as the difference between one retail brand concept's research growth rate and the average of eight retail brand concepts' research growth rate. The RRGR allows us to conduct an evaluation if the research of one retail brand concept has grown at a faster or slower rate over the last four years when compared to the research that had been conducted on other retail brand concepts. A positive RRGR means that research of one retail brand concept is growing faster than other types of retail brand concepts, and vice versa.

The process of calculating the two metrics is provided in Table 2-3.

Table 2-3 Calculation of two metrics

Research status		Number of publications from the year when the first article published to 2021			Publications from 2018 to 2021		Research growth rate	Relative total research output	Relative research growth rate
	Brand type	Total number of publications（A）	Total number of years（B）	Number of publications per year（C）	Total number of publications（D）	Number of publications per year（E）	（F）	（G）	（H）
Offline	Own product brand(R1)	315	30	10.50	49	12.25	17%	257	-13%
	Store brand(R2)	87	32	2.72	17	4.25	56%	29	26%
	Platform brand(R3)	3	10	0.30	1	0.25	-17%	-55	-47%
	Retailer brand(R4)	33	18	1.83	9	2.25	23%	-25	-7%
Online	Own product brand(R5)	4	8	0.50	3	0.75	50%	-54	20%
	Store brand(R6)	21	22	0.95	8	2.00	110%	-37	80%
	Platform brand(R7)	0	0	0.00	0	0.00	0%	-58	-30%
	Retailer brand(R8)	0	0	0.00	0	0.00	0%	-58	-30%
Average (Ra)		58	/	/	/	/	30%	/	/

Note: Relative total research output $G_{Ri} = A_{Ri} - A_{Ra}$,

Research growth rate = $(E_{Ri} - C_{Ri})/ C_{Ri}$.

Relative research growth rate $H_{Ri} = F_{Ri} - F_{Ra}$.

Where, Ri is the type of retail brand concept, Ra is the average value of eight retail brand concepts on a given index.

Take own product brand for example:

Relative total research output $G_{R1} = A_{R1} - A_{Ra} = 315 – 58 = 257$

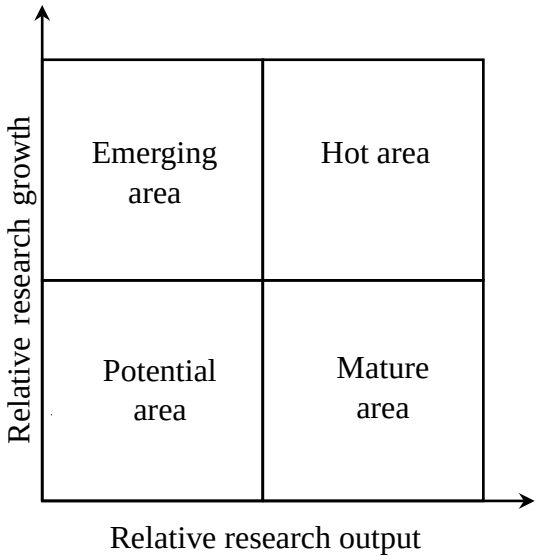
Research growth rate = $(E_{R1} - C_{R1})/ C_{R1} = (12.25 – 10.50) / 10.50 = 17\%$

Relative research growth rate $H_{R1} = F_{R1} - F_{Ra} = 17\% - 30\% = -13\%$

(2) Four quadrants.

By applying the quantitative measures of RTRO and RRGR, it is able to place the eight retail brand concepts into a matrix, as shown in Figure 2-5, which consists of four quadrants: potential area, emerging area, hot area and mature area.

Figure 2-5. Four stages of research development

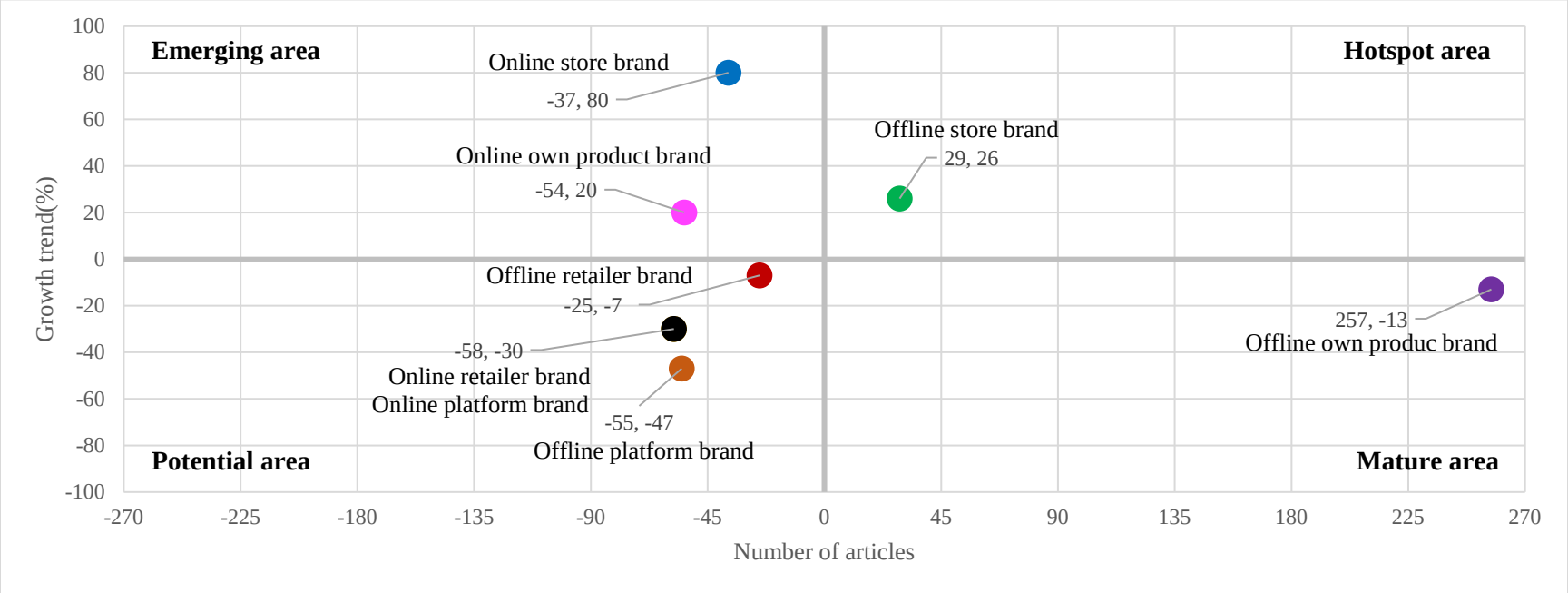


This matrix could visually inform us about the research development stage of each retail brand concept. Specifically, a potential area refers to a research field with a relatively low total volume of research output and a relatively slow growth rate. This area requires further investigation by scholars to determine whether it has low research value or if valuable research questions have yet to be identified by scholars. An emerging area is a research field with a relatively rapid growth rate but still has a relatively low total volume of research output. This indicates that this area has many research opportunities and scholars should pay more attention to it. A hotspot area refers to a research field with a relatively high total volume of research output and a relatively rapid growth rate. This indicates that significant research achievements have already been made in this area and a systematic review is needed to summarize findings and identify potential gaps. A mature area refers to a field with a relatively high total volume of research output but a relatively slow growth rate. In such an area, the theoretical framework is generally well-developed and there are fewer research questions worth researching. As a result, scholars should pay attention to the new trend in this area.

2.3.2. Results

The research development stages of the four levels of retail brands across online and offline channels are presented in Figure 2-6. Offline own product brand falls into the mature area, offline store brand falls into the hotspot area, online own product brand and online store brand fall into the emerging area, and both online/offline retailer brands and online/offline platform brands fall into the potential area. This shows that the offline own product brand has been extensively studied and scholars may have to pay more attention to the emergence of new trends in this field or shift their focus away to other retail brand concepts. Moreover, a considerable number of studies on offline store brands have been conducted, so it is worthwhile to systematically review the existing work to identify possible gaps that may remain. In addition, although research on online own product brands and online store brands is inadequate, it is attracting more attention from scholars, while the research fields of both online/offline retailer brands and online/offline platform brands need more effort to better understand their research value.

Figure 2-6. The research development stage of the eight retail brand concepts

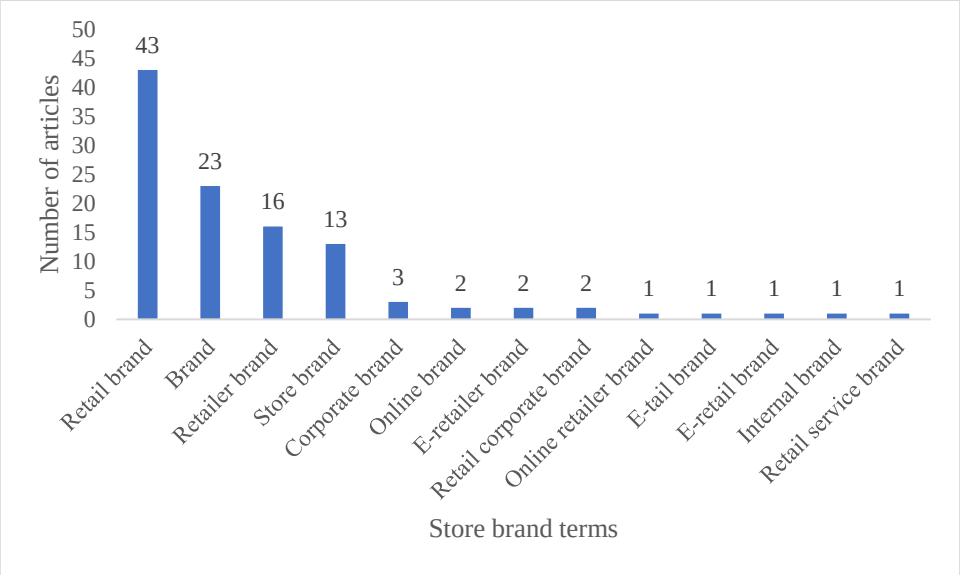


2.4 The connotation of a store brand

2.4.1 The term for “store-as-a-brand” used in this thesis

Of the 108 store brand articles, 13 terms are used to describe the concept of “store-as-a-brand”, with the most common being retail brand (n=43, 39.8%), brand (n=23, 21.3%), retailer brand (n=16, 14.8%) and store brand (n=13, 12.0%), as shown in Figure 2-7.

Figure 2-7. Terms for “store-as-a-brand” used in reviewed articles



Terms like “retail brand”, “retailer brand” and “brand” do not clearly specify which level of retail branding they refer to—whether it’s the brand of a retailer’s own products, the store, the retail platform or the retail company. Considering the essence of the concept “store-as-a-brand” is to define the branding effort at an individual retail outlet level, the two terms with the closest meaning are “store brand” and “shop brand”. According to Oxford Learner’s Dictionaries (www.oxfordlearnersdictionaries.com), store means “a large shop that sells many different types of goods”, while shop means “a building or part of a building where you can buy goods or services”. The semantic difference between these two words is subtle, so both “shop brand” and “store brand” are appropriate when trying to describe the “store-as-a-brand”. However, this thesis suggests the use of “store”, as scholars rarely use the term “shop brand”, with it appearing in only one of the 108 store brand articles included in this review.

2.4.2 The definition of the store brand used in this thesis

Among the 108 reviewed articles related to store brands, five provide a clear definition, as shown in Table 2-4. Based on these definitions, this thesis defines "store brand" as "a brand used by the stores in a variety of retail channels, which provides a shopping experience that satisfies a customer's needs by working on the product portfolio, customer service, store atmosphere and in-store marketing activities".

Table 2-4. Definitions associated with "store-as-a-brand" used in reviewed articles

Term	Definition	Author(s)
Retailer brand	Retailer brands are typically more multisensory in nature than product brands and can rely on rich consumer experiences to impact their equity.	Ailawadi and Keller, 2004
Retail brand	'Retail brand', in this context, characterizes the name of a retail company (or specific retail channel) that develops as a brand in the consumers' mind.	Morschett et *al.*, 2005
	A retail brand is, then, a group of the retailer's outlets which carry a unique name, symbol, logo or combination thereof.	Zentes *et al.*, 2008
	The retail brand refers to "a retailer as a brand or a retail store as a brand".	Das, 2014
Retail corporate brand	Retail corporate brands are unique compared to product brands, comprising distinctive and varied brand associations such as product assortment, store layout, staff interactions, and uniquely identifiable retail environments.	Dwivedi and Merrilees, 2016

2.5 Attributes of an offline and online store brand

2.5.1 Data analysis

The data was analyzed utilizing a hybrid thematic analysis method that integrates deductive and inductive approaches. First, an inductive thematic analysis was conducted to analyze the relevant literature associated with offline and online store brands, respectively. Referring to Riboldazzi *et al.* (2021), the inductive thematic analysis encompasses the following steps: (1) Open coding was performed to code the articles according to the main concepts emerging from the text; (2) Codes with similar meanings used by different authors were categorized into various sub-themes; (3) Axial coding was performed by grouping the sub-themes based on their relationships into themes (Douglas, 2003), which in most cases, pointed to a clear research subject. Subsequently, following a deductive thematic analysis method, intrinsic attributes and extrinsic attributes were regarded as predetermined overarching

themes to categorize the various store attributes (themes) identified during the inductive thematic analysis stage. Specifically, the intrinsic attributes of online stores encompass those necessary for providing the shopping experience sought by customers, while the extrinsic attributes are the external aspects of the online store related to customers' shopping experience.

All the above steps of thematic analysis were carried out by three authors independently and then cross-compared. Disagreements were discussed until at least two of the three authors reached an agreement to avoid subjective coding or categorizing and ensure reliability and rigor.

2.5.2 Results

The attributes associated with offline and online store brands are presented in Tables 2-5 and 2-6, respectively, and are further integrated into Table 2-7 for comparison.

Table 2-5. Attributes of an offline store brand

Attribute				Supportive article	
Overarching theme	Theme	Sub-theme	Open code	NO.	Sample
Intrinsic attributes	Product attributes	Product assortment	Variety, selection, assortment, brand mix	48	Ailawadi and Keller, 2004; Tsafarakis *et al.*, 2016
		Own product brand	Differentiation, price image	15	Collins-Dodd and Lindley, 2003; Kremer andViot, 2012; Luijten and Reijnders, 2009
		Well-known manufacturer brand	Well-known brand, leading brand, image transfer	9	Martenson, 2007; Massara *et al.*, 2018
	Service attributes	Supplementary service	leisure area, other service	5	Borghini *et al.*, 2009; Hjelmgren, 2016
		Service employee	Helpful, courteous, knowledgeable, appearance	46	Beneke *et al.*, 2015; Girod, 2005; Graciola *et al.*, 2020; Anil Konuk, 2018
		Service quality	Good, excellent, high-level, service process	42	Delgado-Ballester *et al.*, 2014; Anil Konuk, 2018
	Environment attributes	Physical feature	Physical facilities, fixtures, external design, decoration	40	Ailawadi and Keller, 2004; Kumar and Kim, 2014
		Product display	Display, visual merchandising	15	Kerfoot *et al.*, 2003; Semeijn *et al.*, 2004
		Ambient element	Music, lighting, design, temperature, layout	37	Kent, 2003; Kumar and Kim, 2014
		Social factor	Customers, clientele	13	Ngo *et al.*, 2016
		In-ternal marketing	Promotion, event	23	Leischnig *et al.*, 2011; Mauri *et al.*, 2015

		activities			
	Location attributes	Location	Location, accessibility	12	Ngobo and Jean, 2012
Extrinsic attributes	Common extrinsic attributes	Country of origin	Country of origin	1	Swoboda *et al.*, 2012
		Retail corporate image	Retail corporate image, retailer reputation, CSR	6	Girod, 2005; Marin-Garcia *et al.*, 2020
		Brand name	Brand name	6	Khan and Rahman, 2016
		Logo	Logo/facia	5	Kent and Stone, 2007
		Advertising	Advertising, mass media, social media, slogan	12	Esbjerg and Bech-Larsen, 2009; Herstein *et al.*, 2013; Osei-Frimpong, 2019
	Specific extrinsic attributes	Platform image	Mall image	1	El Hedhli *et al.*, 2017
		Store format	Store format, store size, flagship store, pop-up store	17	Graciola *et al.*, 2020
		Online store image	Online store image Multi-channel store	5	Kwon and Lennon, 2009; Sääksjärvi and Samiee, 2011
		Architecture design	Architecture	1	Kirby and Kent, 2010

Table 2-6. Attributes of an online store brand

Attribute				Supportive article	
Overarching theme	Theme	Sub-attribute	Open code	NO.	Sample
Intrinsic attributes	Product attributes	Product assortment	Merchandise options, choice, product range	3	Jason Sit *et al.*, 2021; Kwon and Lennon, 2009
		Product information	Product description, product information	9	Kim, 2020; Park and Stoel, 2005
		Product presentation	Product presentation	4	Kim, 2020; Nikhashemi *et al.*, 2021
	Service attributes	Service information	Service information, service policy, self-service	5	Farías *et al.*, 2022; Park and Stoel, 2005
		Service quality	Service quality, service delivery, satisfaction	7	Kim, 2020; White *et al.*, 2013
		Supplementary service	Gift wrapping, shipping option, loyalty program	2	Kim, 2020
	Environment attributes	Technical attributes	Navigation, security, transaction, etc.	14	Farías *et al.*, 2022; Loureiro *et al.*, 2018; Silva and Alwi, 2006
		Product display	Display, layout, categorization	6	Khan and Rahman, 2016;

					White *et al.*, 2013
		Ambient elements	Music, animation, entertaining features, aesthetic appeal, etc.	4	Kim, 2020; Kwon and Lennon, 2009
		Social factors	Online reviews	4	Kim, 2020; Loureiro *et al.*, 2018
		Internal marketing activities	Coupon	2	Kim, 2020
Extrinsic attributes	Common extrinsic attributes	Country of origin	Country of origin	1	Hu and Checchinato, 2015
		Brand name	Brand name	1	Park and Stoel, 2005
		Advertising	Affiliate network, social media, paid search	8	Colton, 2012; Danaher *et al.*, 2020
	Specific extrinsic attributes	Retail company information	General information, company contacts	2	Kim, 2020
		Offline store image Multi-channel store	Reciprocal effects, brand extension	8	Kwon and Lennon, 2009; Park and Stoel, 2005

Table 2-7. Comparison of the attributes between offline and online stores

Store attributes			Offline	Online
Intrinsic attributes	Product attributes	Product assortment	√	√
		Own product brand	√	√
		Well-known manufacturer brand	√	√
		Product information	×	√
		Product presentation	×	√
	Service attributes	Supplementary service	√	√
		Service employee	√	×
		Service quality	√	√
		Service information	×	√
	Environment attributes	Physical features	√	×
		Technical attributes	×	√
		Product display	√	√
		Ambient elements	√	√
		Social factors	√	√
		Internal marketing activities	√	√
	Location attributes	Store location	√	×
Extrinsic attributes	Common extrinsic attributes	Country of origin	√	√
		Retail corporate image	√	√
		Brand name	√	√
		logo	√	√
		Advertising	√	√
	Specific	Platform image	√	√

extrinsic attributes	Architecture design	√	×
	Another channel store image	√	√
	Store format	√	×
	Retail corporate information	×	√

Note: the red "√" or "×" indicates that these attributes are not identified by thematic analysis of literature, but they are either applicable (√) or not applicable/unimportant (×) in offline or online contexts.

2.5.2.1 Attributes influencing the image of an offline store brand

(1) Intrinsic attributes

Product attributes. Product attributes include product assortment, well-known manufacturer brands and own product brands. A broad and deep product assortment enables customers to enjoy the freedom of choice and convenience of one-stop shopping (Ailawadi and Keller, 2004). Well-known manufacturer brands have irreplaceable shopping value in the minds of consumers because they have stronger product innovation and marketing support capabilities than retailers' own product brands (Chimhundu *et al.*, 2015), while own product brands provide customers with value-for-money shopping value (Nenycz-Thiel and Romaniuk, 2012).

Service attributes. Service attributes consist of supplementary services, service employees and service quality. Supplementary services, such as gift wrapping and store amenities, show a retailer's business philosophy and create value, enjoyment and satisfaction for customers (HO *et al.*, 2021). The service employees' enthusiasm, courtesy and professionalism directly impact customers' shopping experience (Beneke *et al.*, 2015; Anıl Konuk, 2018). Service quality indicates customers' satisfaction with the retail process (Delgado-Ballester *et al.*, 2014; Konuk, 2018).

Environment attributes. Environment attributes consist of physical features, ambient elements, product display, social factors and internal marketing activities. The physical features (e.g., floor plans, walls, fixtures, physical facilities, etc.) not only help create a visually appealing and engaging shopping environment but also help customers' cognitive evaluations, such as better product quality and services (Kumar and Kim, 2014). Ambient elements (i.e., design, color, music, light, etc.) influence customers at a subconscious level and trigger positive emotional responses, such as comfort, pleasure and relaxation (Kent, 2003). Product display influences the convenience of shopping and provides information about the products in an engaging way (Kerfoot *et al.*, 2003; Semeijn *et al.*, 2004). Social

factors (i.e., other customers) affect customers' perception of self-image congruity, meeting their psychological needs (Ngo *et al.*, 2016). Internal marketing activities, such as promotions and events, provide tangible economic benefits and create an exciting atmosphere that improves customer experience (Fuentes-Blasco *et al.*, 2017; Nikhashemi *et al.*, 2019).

Location attributes. Location attributes influence the convenience of a store and, consequently, customers' shopping experience in an offline context (Ngobo and Jean, 2012).

(2) Extrinsic attributes

Common extrinsic attributes. Some extrinsic attributes are shared across four levels of retail brands in both online and offline environments, including retail corporate image, country of origin, brand name, logo and advertising. The retail corporate image acts as a signal that summarizes a retail company's past behaviour in providing customers with responsible "products", which can be used to evaluate its' own product brands, store brands and retail platform brands in the future (Martenson, 2007). The technology, value and globalization image of a country will not only affect the price and quality perception of a retail brand across all levels but also influence customers' psychological value, e.g., global or local identity (Garrett *et al.*, 2017; Swoboda *et al.*, 2012). Brand name evokes previous or expected consumption experiences, thereby enhancing customers' purchase intention (Coates *et al.*, 2006). The design of a logo is critical, as it is the primary expression of a retail brand's identity (Kent and Stone, 2007), applicable to all levels. Advertisements showcase the diverse intrinsic and extrinsic attributes associated with different levels of a retail brand, conveying the benefits to customers and enhancing brand awareness.

Specific extrinsic attributes. Platform image, store format, offline store image and architectural design are specific extrinsic attributes of an offline store brand. The image of a mall can be transferred to the stores operating in the mall because customers select salient cues from the mall environment to evaluate the image of stores in the mall (El Hedhli *et al.*, 2017). Stores with the same format (e.g., convenience stores, hypermarkets, etc.) are perceived to have a similar image, even with different store names (Graciola *et al.*, 2020). A reciprocal relationship exists between a retailer's offline and online channels, resulting in a spillover effect of its online store image on its offline store image(Kwon and

Lennon, 2009) and vice versa. In addition, for large stores with separate buildings, such as the supermarkets operated by Sainsbury's and Tesco, the architectural design of the store building serves as a significant element of the stores' visual identity (Kirby and Kent, 2010).

2.5.2.2 Attributes influencing the image of an online store brand

(1) Intrinsic attributes

From offline to online, some product attributes, service attributes and environment attributes of a store brand remain unchanged, while others have changed.

Product attributes. Both online and offline store brands share some product attributes, including product assortment, well-known manufacturer brands and retailers' own product brands. However, online customers cannot feel the actual products in person and rely heavily on product information (e.g., size, material, function, etc.) displayed on the screen through text, pictures, videos, etc. (Park and Stoel, 2005). Moreover, the presentation of products (e.g., a back view, side view and zoom function) can make it easier for customers to obtain more specific product information. Therefore, product information and product presentation are crucial product attributes for online stores.

Service attributes. Online and offline stores share some service attributes, e.g., supplementary service and service quality. However, service employees, the key service attribute of offline stores, are found to be unimportant for online stores, possibly because many customers use chatbots or even self-service to complete their online transactions. Correspondingly, service information displayed on webpages of online stores, such as return and refund policy, after-sales service information, FAQs and shipping information, plays a unique and crucial role in reducing perceived risk and facilitating self-service in online shopping (Farías *et al*., 2022; Park and Stoel, 2005).

Environment attributes. Online stores have the same environment attributes as offline stores, such as ambient elements and internal marketing activities, but differ in the following aspects. First, online stores are built on a variety of technologies, not on physical components like offline stores. For example, an online store's technical ease of use and e-interactivity affect customers' experience of fluency in online shopping (Silva and Alwi, 2006). Second, products are displayed on shelves and aisles in offline stores, but in online stores, they are displayed by the webpage layout and categorization of products,

which help customers locate products quickly (White *et al.*, 2013). Third, social factors in an offline store refer to other customers in the store, but in an online context, social factors are reflected in customers' online reviews (Loureiro *et al.*, 2018).

In addition, location is an intrinsic attribute of offline store brands that affects the customer experience of convenience (Ong *et al.*, 2012), but not for online stores that can be accessed anytime and anywhere.

(2) Extrinsic attributes

While in terms of extrinsic attributes, most play the same role in offline and online contexts. However, the store format is not applicable in an online context because the appearance of all online stores is almost identical. In contrast, company information displayed on the homepage of online stores can reduce customers' perceived risk of shopping (Gautam and Sharma, 2019).

2.6 Discussion

Theoretically, to the best of my knowledge, this is the first literature review to systematically identify and categorize the attributes of offline and online stores, and further compare the differences in attributes between them. The findings provide a valuable reference for developing scales to measure offline and online store image, thereby contributing to brand image theory. Moreover, the categorization of online store attributes identified from this review is applied in Chapter 3 as pre-defined themes for conducting a thematic analysis of interviews with online customers and store owners to identify the attributes of platform-based online stores. In addition, this review proposes an appropriate term and definition for a store brand, enhancing the understanding of this concept and laying the foundation for subsequent empirical studies.

Methodologically, this review develops a new quantitative approach to evaluate the research development stage of various research topics by investigating two new metrics, i.e. the relative total research output and the relative research growth rate over the last 4 years. Using this approach, the existing research topics can be classified into mature, hotspot, emerging and future areas. This new approach provides a quantitative way for scholars to dynamically analyse and understand the latest research trends. Moreover, by applying this approach, this review finds that online store brands are in

an emerging area, which confirms the value of this thesis.

Practically, the findings suggest that, given the numerous attributes influencing customers' perceptions of store image, retailers can leverage their strengths and consider product and customer characteristics to select specific attributes that will help them build a competitive advantage in store image.

In addition, by analyzing the journal distribution of the 478 retail brand articles reviewed, the top five journals in which the articles are mostly published were identified. This is an important point of reference for scholars that engage in retail brand research, as these journals should be given priority when searching for relevant literature and submitting articles for review and potential publication.

Despite these contributions, there are several limitations. First, the depth of discussion regarding the influence of specific attributes on the images of an offline and online store brand is limited. Future research could take this review as a precursor for a systematic review of a focused research question. Second, this chapter only focuses on high-quality journals, so some insightful articles published in other journals may have been overlooked. Future works could focus on retail brand studies published in recent years, while expanding the scope of data sources to examine whether there are new insights worthy of attention.

Chapter 3: Identification and categorization of platform-based online store attributes

Chapter overview. This chapter aims to reveal the differences in the attributes between platform-based and standalone online stores, as well as the differences between the pre-purchase and post-purchase attributes of platform-based online stores. It first provides a brief review of research on online store attributes, followed by introducing the hybrid thematic analysis and the two theoretical frameworks used in this thematic analysis: attribute-benefit-attitude and stimulus-organism-response. It then reports the thematic analysis results of pre-purchase and post-purchase attributes, respectively. Finally, it concludes with a discussion of these results.

3.1 Introduction

Academically, research on online store attributes is limited (Chen *et al.*, 2024), and lags behind the advancement of retail e-commerce practices. First, the majority of research in this area focuses on standalone online stores, which are e-commerce websites developed and operated by the retailers themselves (e.g., Ghatak *et al.*, 2016; Jiang *et al.*, 2023), rather than platform-based ones, which are now mainstream. However, the former can personalize their stores to create a unique brand image regarding website functionality, customer service, store environment and so on, while the latter can only build their stores based on the standard templates provided by the online retail platform (Omikron, 2021). As a result, there could be significant differences in the attributes of these two types of online stores. Therefore, while findings from research on standalone online stores have significant reference value, they cannot be directly applied to platform-based online stores.

Second, most of these studies do not consider the fact that customers may prioritize different store attributes during the pre-purchase and post-purchase stages. For example, product presentations such as pictures, videos and texts (Wu *et al.*, 2020), as well as online reviews (Cheong *et al.*, 2020), significantly affect customers' purchase intentions during the pre-purchase stage but may no longer be important during the post-purchase stage when customers have placed an order. In contrast, during the post-purchase stage, the focus is more on the actual product and product delivery (Kumar and Anjaly, 2017), which are unavailable during the pre-purchase stage. Therefore, research on online store brands

should distinguish between the pre-purchase and post-purchase stages.

Based on the above analysis, the first aim of this chapter is to identify the attributes shaping the pre-purchase and post-purchase brand image of platform-based online stores. Moreover, according to categorization theory (Rosch, 1978), classifying the wide variety of attributes into a few meaningful categories based on their similarities and differences could make it easier to understand and analyze the complex landscape of store attributes. Therefore, the second aim of this chapter is to categorize the pre-purchase and post-purchase attributes of platform-based online stores from the customers' perspective.

3.2 Literature review

Given that online stores encompass a wealth of attributes, scholars initially attempted to create a list of these attributes and subsequently proceeded to classify them into various categories (Roy Dholakia and Zhao, 2010). However, consensus on the results has not been achieved, as shown in Table 3-1.

On the one hand, some scholars categorize online store attributes using deductive approaches. For example, Eroglu et al. (2003) categorized diverse attributes into high and low task-relevant attributes, with the former contributing to utilitarian value and the latter contributing to hedonic motive. Jin and Kim (2010) classified six online store attributes into basic attributes and marketing-related attributes based on the motivation-hygiene theory. Roy Dholakia and Zhao (2010) distinguish 15 online store attributes by purchase stages, categorizing them into "at checkout attributes" and "after delivery attributes", which is directly referenced from bizrate.com. Bezes (2015) and Chen *et al.* (2024) divided a variety of attributes into intrinsic and extrinsic attributes based on the Elaboration Likelihood Model and Keller's customer-based brand equity theory, respectively.

On the other hand, another group of scholars utilizes the inductive methods. For example, Ghatak *et al.* (2016) classified various attributes into five categories—website design, e-tail store attributes, outcome quality, service recovery and e-retail store reputation—based on a review of previous literature and integrating consultations with experts and academicians in the online retail industry. Jiang *et al.* (2023) classified diverse attributes identified from 40 journal articles into six categories, namely, information, enjoyment, convenience, atmosphere, uncertainty and service.

Table 3-1. Online store attributes identified from previous literature

Categorization approach	Author(s), year	Store attributes		Source	
		Attribute categories	Attributes		
Inductive approaches	Jiang *et al.* (2023)	Service	Freight, delivery speed, service attitude	Previous literature	40 journal articles about the image of online stores from 1999 to 2021
		Information	Completeness, sufficiency, reliability		
		Enjoyment	Exciting, pleasant, enjoyment		
		Convenience	Ease of use, search function, navigation		
		Atmosphere	Design, picture		
		Uncertainty	Product quality, counterfeit goods		
	Jiao *et al.* (2021)	Store design image	Product introduction, picture displays, purchase process and content news	Previous literature	Adapted from Jin & Park (2006)
		Order fulfillment image	Delivery speed, freight insurance, product completeness		
		Communication service image	Attitude, professionalism, accepting customers' suggestions, customer care		
		Security image	Privacy, security, product reliability		
	(Ghatak *et al.*, 2016)	Website design	Ease of use, functionality, information accuracy	Previous literature	Based on the review of the literature and integrating consultations with experts and academicians in the e-retail industry
		E-retail store attributes	Discounts and offers, returns and exchange policy, product selection, price and price comparison, privacy and security		
		Outcome quality	Order accuracy, product completeness, delivery accuracy		
		Service recovery	Responsiveness, service guarantee/compensation, access/contact		
		E-retail store reputation	Brand image, brand awareness		
	Yun *et al.* (2007)	E-merchandise Attributes	Dependability, value, quality, price	Previous literature	Unspecific
		E-service Attributes	Customized service, descriptive information (product/service), ease of contact, delivery/shipping/tracking		
		E-shopping atmosphere Attributes	Convenience/time saving, search/navigation, design/layout/		
Deductive approaches	Chen *et al.* (2024)	Intrinsic attributes	Product attributes (product assortment, own product brand, well-known manufacturer brand, product information and product presentation), service attributes (supplementary service, service	Previous literature	19 articles related to online store brand

		quality, service information), environment attributes (technical attributes, product display, ambient elements, social factor and internal marketing activity)		
	Extrinsic attributes	Country of origin, retail corporate image, brand name, logo, external advertising, platform image, retail corporate information, offline store image		
Bezes, 2015	Intrinsic attributes	Accessibility, layout, product offering, and its reputation	Previous literature	Unspecific
	Extrinsic attributes	Product pricing, sales promotions, advice, after-sales service, connections with the other channels, and the manner in which the website enhances the store image		
Jin and Kim (2010)	Basic attributes	Website design, security/privacy, order fulfilment	Previous literature	Adapted from Madlberger (2004)
	Marketing-related attributes	Communication, merchandising, and promotion		
Roy Dholakia and Zhao (2010)	At checkout attributes	Ease of finding what you are looking for, selection of products, clarity of product information, prices relative to other online merchants, shipping charges, variety of shipping options, charges stated clearly before order submission	Reailer'website	Directly referenced from bizrate.com
	After delivery attributes	Order tracking, on-time delivery, product met expectations, customer support,		
Eroglu *et al.* (2003)	High task-relevant attributes	Descriptions of the merchandise, the price, terms of sale, delivery and return policies, pictures of the merchandise, navigation aids	Previous literature	Unspecific
	Low task-relevant attributes	Colors, borders, and background patterns, typestyles and fonts, animation, music and sounds, entertainment, decorative pictures, a web counter, site awards and affiliation		

3.3 Methodology

This chapter aims to identify the attributes of platform-based online stores in the current online shopping context, so this research is primarily exploratory. Therefore, a qualitative approach, which allows the most significant online store attributes to emerge, is considered appropriate (Loupiac & Goudey, 2020). Specifically, this chapter employs a hybrid thematic analysis of semi-structured interviews with 33 online customers and 15 online store owners to identify and categorize the pre-purchase and post-purchase attributes that customers are concerned about. Considering China's online retail sales rank first worldwide (AsiaPac Net Media, 2023) and Taobao leads China's retail e-commerce industry (Statista, 2024b), this chapter focuses on Taobao stores as the research object.

3.3.1 Data collection

Human Research Ethics Approval H8826 was obtained from the authors' university to conduct this qualitative research. Data collection was carried out between January and February 2023.

Sample recruitment

While this chapter explores the attributes of platform-based online stores from the customer's perspective, store owners can provide valuable insights as practical experts. Therefore, in addition to focus group interviews with 33 online customers, we also conducted in-depth interviews with 15 store owners. In-depth one-on-one interviews were conducted with Taobao store owners due to the relatively small number of participants, allowing for more detailed insights. Additionally, since Taobao store owners are often busy, it is challenging to coordinate group interviews. Focus group interviews were chosen to collect information from customers due to the larger number of available participants, providing an effective method for gathering diverse perspectives.

Participants were recruited using a combination of snowball sampling and purposive sampling methods, where they were asked to refer individuals who met the criteria. Specifically, customers must have shopped on Taobao within the past month, while store owners must have been operating a Taobao store for over a year. Moreover, to obtain more comprehensive perspectives, online customers were selected to represent different genders, age groups, occupations, income levels, education levels and shopping frequencies, while store owners were chosen from various industries, with different store

credit levels and varying lengths of store ages. Additionally, since Tmall and Taobao share the same retail platform, three Tmall store owners were also recruited.

Before the interviews, participants were asked to complete a profile information questionnaire. For online customers, it includes their gender, age, educational level, income and online shopping frequency. For store owners, it includes their gender, age and educational level, as well as the credit level, annual sales volume and store age of their stores. The relevant information is reported in Appendix A1 and Appendix A2.

Semi-structured interview

For interviews with online customers and store owners, the following questions presented in Table 3-2 are used as a guideline, with the researcher adapting them to extract useful information in a free-flowing conversational format. All interviews are conducted face-to-face, with each focus group interview lasting an average of half an hour and each in-depth interview lasting an average of one hour.

Table 3-2. Guideline questions used in semi-structured interviews

Participants	Topics		Guideline questions
Customers	Pre-purchase stage	Product searching	How did you notice an online store when you were searching for products?
		Store comparison	When many online stores have the same or similar products, what kind of store would you consider buying from, and what kind of store would you avoid?
		Pre-purchase shopping experience	What kind of online store will leave you with a better or worse brand image before purchase?
	Post-purchase stage	Overall store image	What kind of online stores do you usually follow? During the post-purchase stage, what factors influence the image of an online store in your mind?
		Post-purchase shopping experience	Please recall your most pleasant (or unpleasant) shopping experience. What factors contributed to it? If you were to give advice to a Taobao store, what aspects would you suggest they must excel in?
Store owners	Pre-purchase and post-purchase stages	Customers	What kind of brand image does your store give to customers at present? In which areas do you think improvements are needed?
		Competitors	What are the strengths (weaknesses) of online stores with a better (worse) brand image than yours? What advantages does your store have over your competitors?

3.3.2 Data analysis

3.3.2.1 Theoretical framework

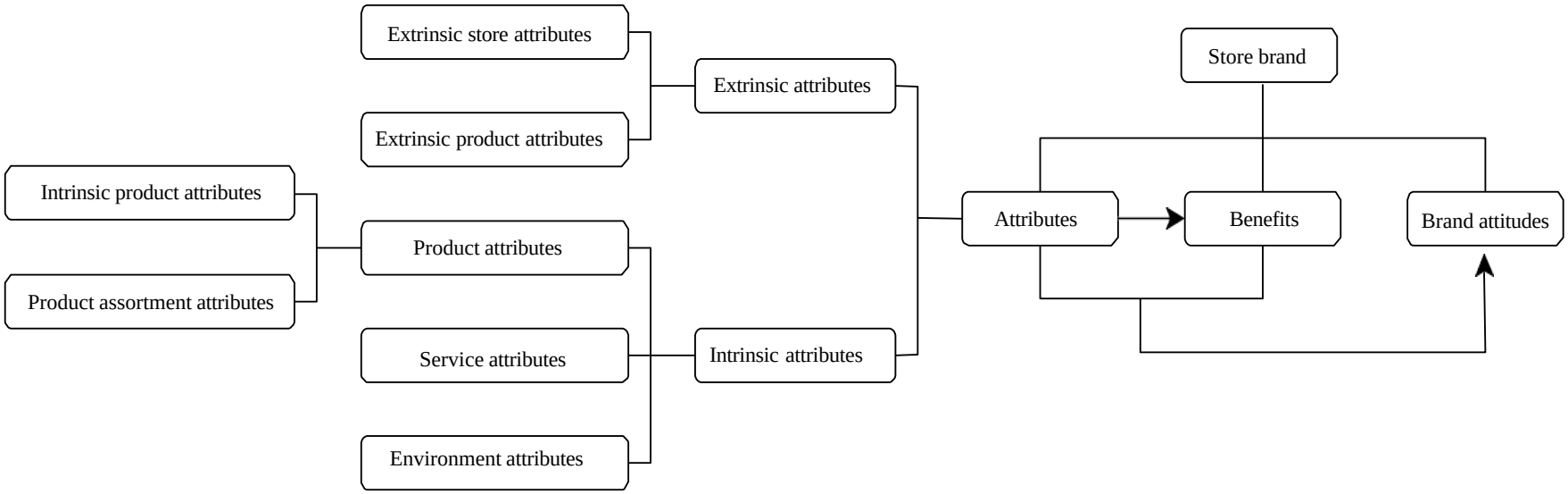
Pre-purchase stage: Attribute-benefit-attitude

The attribute-benefit-attitude framework, as depicted in Figure 3-1 and elaborated below, is derived from Keller's (1993) customer-based brand equity model and serves as the theoretical framework for our thematic analysis of interviews regarding pre-purchase online store attributes.

A brand is a collection of associations regarding a certain product or service stored in a customer's mind (Adamson *et al.*, 2006). According to Keller's customer-based brand equity model (Keller, 1993), the brand associations can be classified into three categories: attributes, benefits and brand attitudes. Specifically, "attributes are those descriptive features that characterize a product or service—what a consumer thinks the product or service is or has and what is involved with its purchase or consumption"; "benefits are the personal value consumers attach to the product or service attributes—that is, what consumers think the product or service can do for them"; "brand attitudes are defined as consumers' overall evaluations of a brand", which are a function of the associated attributes and benefits that are salient for the brand".

It is evident that attributes are the foundation of a brand because they determine the benefits, while brand attitudes result from an overall evaluation of the attributes and the associated benefits. Moreover, all attributes are categorized into intrinsic and extrinsic attributes, which are adapted from Keller's (1993) brand equity model. Specifically, the intrinsic attributes of online stores encompass those necessary for providing the shopping experience sought by customers, while the extrinsic attributes are the external aspects of the online store related to customers' shopping experience. Moreover, extrinsic attributes are differentiated into two categories: those associated with online stores and those associated with individual products. Intrinsic attributes are divided into three categories, as in Chen *et al.* (2024) and Yun *et al.* (2007): product attributes, service attributes and environment attributes. Finally, product attributes are further differentiated into intrinsic product attributes and product assortment attributes.

Figure 3-1. Attribute-benefit-attitude framework

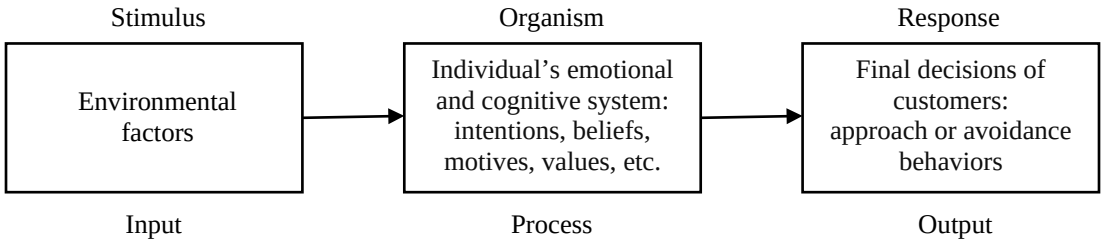


Post-purchase stage: Stimulus-organism-response

Given the exploratory nature of the Stimulus-Organism-Response (SOR) Model in identifying external factors driving customer behavior (Kaniati *et al.*, 2024), it could serve as the theoretical framework for the thematic analysis of interviews with online customers and store owners regarding post-purchase online store attributes.

The SOR mode was introduced by the American psychologist Woodworth (1929) as an extension of Pavlov's classic Stimulus-Response (S-R) model (2010). It argues that clues (stimulus) perceived from the environment can trigger an individual's internal assessment state (organism), which in turn produces positive or negative behaviors (response) to the stimuli (Mehrabian and Russell, 1974), as shown in Figure 3-2. The stimulus refers to those factors that affect internal states of the individual and can be conceptualized as an influence that stimulates the individual (Chang et al., 2011). The organism refers to an individual's emotional and cognitive system that processes a stimulus, such as someone's intentions, beliefs, motives, values and other factors (Kaniati *et al.*, 2024). Response represents the final outcomes and the final decisions of consumers, which can be approach or avoidance behaviors (Chang et al., 2011).

Figure 3-2. Stimulus-organism-response model



Source: Adapted from Woodworth (1929).

This model has been widely used to explore customer behavior in retail contexts. For example, Kaniati *et al.* (2024) explore the impact of price promotion, promotion time limit, consumer-consumer-interaction and consumer-streamer interaction (Stimulus) on customers' perceived risk associated with online shopping (Organism), which in turn affects their impulsive buying decisions (Response). Zhu *et al.* (2020) investigates how perceived information quality and social presence of online reviews (Stimulus) affect customers' purchase intention (Response) through trust in and satisfaction with online

reviews. Kim and Lennon (2013) examine the effects of reputation, website design, fulfillment, customer service, and security/privacy (Stimulus) of an online store on customers' emotions and perceived risk of online shopping (Organism), which further affects their purchase intention (Response). Although these studies do not focus on post-purchase online store attributes, they demonstrate that this theory is applicable to studying customer behavior in online retail contexts.

3.3.2.2 Thematic analysis

The interviews were conducted in the local language (Chinese) and then translated into English during verbatim transcription. The data was analysed using a hybrid thematic analysis that integrates both deductive and inductive approaches, with the aim of harnessing the advantages of each and achieving greater rigor (Proudfoot, 2023). First, this chapter employed an inductive thematic analysis method to analyze interviews with online store owners and customers, respectively. This open and exploratory approach enables themes to emerge directly from the data, thus facilitating the systematic identification of the attributes associated with online stores. Consequently, during the deductive thematic analysis stage, the predetermined overarching themes, as shown in Figure 3-1 and Figure 3-2, are used to categorize the various pre-purchase and post-purchase attributes identified during the inductive thematic analysis stage, respectively. By adopting this approach, it becomes feasible to understand the attributes that directly and indirectly impact customers' online shopping experience.

Three authors independently carried out the thematic analysis, which was then cross compared. To ensure reliability and validity, disagreements were discussed until at least two of the three authors reached an agreement.

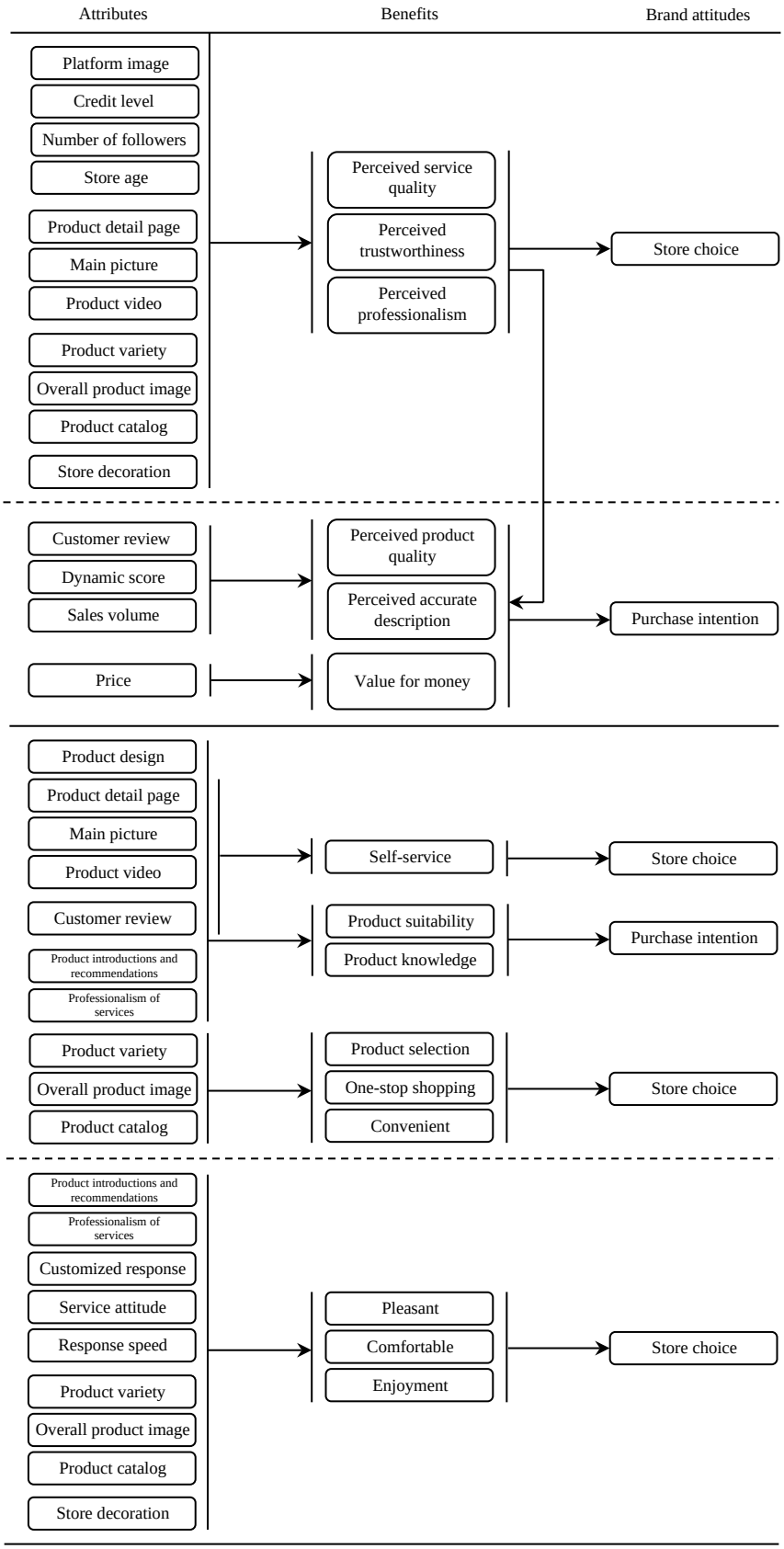
3.4. Findings regarding pre-purchase attributes

Table 3-3 shows the thematic analysis results regarding pre-purchase attributes of platform-based online stores, encompassing three first-level themes, six second-level themes,12 third-level themes and 38 fourth-level themes. Figure 3-3 shows the interrelationships between the attributes, benefits and attitudes.

Table 3-3. Results of the thematic analysis of interviews regarding pre-purchase attributes

First-level theme	Second-level theme	Third-level theme	Fourth-level theme	Supportive owners		Supportive customers	
				Number	Codes	Number	Codes
Attributes	Extrinsic attributes	Extrinsic store attributes	Store type	-	-	18	54
			Number of fans	-	-	6	13
			Credit level	1	1	11	21
			Store age	-	-	4	8
		Extrinsic product attributes	Customer reviews	7	28	28	71
			Sales volume	6	14	24	40
			Dynamic score	4	7	9	22
			Price	13	60	15	42
	Intrinsic attributes	Intrinsic product attributes	Product design	9	67	13	37
			Product detail page	13	59	10	36
			Main picture	9	31	10	32
			Product video	2	5	1	1
		Product assortment attributes	Overall product image	1	5	7	15
			Product variety	9	39	11	21
			Product catalog	0	0	2	5
		Environment attributes	Store decoration	5	13	6	11
		Service attributes	Product introductions and recommendations	10	17	5	12
			Attitude	3	7	14	24
			Responsiveness	6	22	10	18
			Customization	0	0	8	15
			Professional	6	15	6	10
Benefits	Benefits indicator	Store benefit indicators	Perceived service quality	-	-	4	6
			Perceived trustworthiness	2	3	11	21
			Perceived professionalism	4	4	8	13
		Product benefit indicators	Perceived product quality	2	3	14	19
			Perceived accurate description	-	-	1	1
			Perceived value for money	6	11	7	14
	Experiential attributes	Utilitarian benefits	Product knowledge	9	14	7	27
			Product suitability	3	3	11	13
			Product selection	5	8	2	3
			One-stop shopping	4	8	2	3
			Convenient	-	-	1	1
			Self-service	2	3	5	12
		Hedonic benefits	Pleasant	1	1	1	1
			Comfortable	-	-	4	7
			Enjoyable	1	1	5	5
Attitudes	Attitudes toward the product		Purchase intention	7	18	28	75
	Attitudes toward the store		Store choice	2	2	31	119

Figure 3-3. Interrelationships between attributes, benefits and brand attitudes



3.4.1 Attributes

3.4.1.1 Extrinsic attributes

(1) Extrinsic store attributes

Platform image

Although Taobao and Tmall use the same retail platform, their positioning is different. Taobao operates as a C2C (consumer-to-consumer) marketplace, where anyone can set up a store with relatively few restrictions, allowing individuals and small businesses to sell directly to customers. In contrast, Tmall is a B2C (business-to-consumer) platform where only legal entities such as trademark holders, registered businesses and authorized retailers can sell their goods and services to customers (GMA, 2022). Therefore, these two platform brands present different images to customers.

In practice, when numerous stores are displayed on the search results page of the retail platform, Tmall stores have a "Tmall" label, distinguishing them from regular Taobao stores. Due to Tmall's strict management of merchants, customers have higher trust in it than in Taobao. According to trust transfer theory, this trust can be transferred from the retail platform to the stores operating on it (Chen *et al.*, 2015), as C33 stated that "*It's important to consider whether they are Taobao or Tmall stores because some Taobao stores may sell counterfeit goods, whereas Tmall stores have the platform's brand endorsement*". As a result, customers perceive the quality of products from Tmall stores to be better (C3: *I believe the products sold in Tmall stores are likely to be superior to those sold in regular Taobao stores*), as well as the services provided by Tmall stores (C21: *I would prefer Tmall stores because their after-sales service is better, and their service attitude is generally more favorable*). Consequently, customers prefer Tmall stores and are willing to pay a premium price for the products sold in Tmall stores (C3: *If given a choice between Tmall and regular Taobao stores, I would be more inclined to choose Tmall stores, even if they are slightly more expensive*). These findings support Chen *et al.* (2024), who propose that the image of an online retail platform can serve as an extrinsic cue for the stores operating on it.

Credit level

After completing a transaction, buyers can evaluate the seller's products or services.

Correspondingly, Taobao assigns credit points to the store. Positive evaluation adds one point, neutral evaluation does not change the score, and negative evaluation deducts one point. A store's cumulative credit points are represented by credit level icons, progressing from red hearts to blue diamonds, blue crowns, and finally gold crowns (Voo, 2024).

In our interviews, respondents highlighted that a store's high credit level implies lower purchasing risks for customers (*C6: The credit level cannot be too low. For example, if a store has just one or two red hearts. It is very risky to purchase from such stores)*. This is mainly because customers believe that if the store has satisfied so many customers before, their current transaction is unlikely to be disappointing as well. This aligns with Pan's (2016) argument that a credit scoring system can effectively mitigate adverse selection in online shopping, which refers to the phenomenon that customers tend to choose poor-quality products due to difficulty in distinguishing quality and reluctance to pay a premium for higher-quality items.

Number of followers

The number of followers acts as social proof (Talib *et al.*, 2017), a psychological phenomenon where people look to others' behaviors and opinions to guide their own actions (Ibrahim, 2023), aiding customers in their purchase decision-making. This thesis found that a store with many followers gives customers the impression of having a larger scale (C11: *If a store has too few followers, it gives the impression that it's a small store*) and a high level of acknowledgment from customers (C2: *If you have a large number of followers, it indicates that customers have a high level of acknowledgment for the store*). Moreover, the store is perceived as more popular (C26: *I would look at the number of followers because if there are many followers, it indicates that the store is more popular*). Consequently, this social proof increases their confidence in the store's trustworthiness (C11) and the quality of its products (C26), resulting in reduced purchasing risks (C11).

Store age

Store age serves as a credible signal of the store's longevity and stability in the market. Customers tend to perceive a store with a longer operating history as having better product and service quality (C7:

If a store has survived for so many years, I think they must have done well in terms of product quality and after-sales service), resulting in lower purchasing risks (C15: *I generally don't buy from relatively new stores; I feel there's some risk involved*). Such findings align with Desai *et al.* (2008), who suggest that a firm's age can act as an extrinsic cue for the quality of its offerings, affecting consumers' perceptions of the risk involved in conducting business with the firm.

(2) Extrinsic product attributes

Customer review

Aligning with Liu *et al.*'s (2011) argument that customer reviews are a type of user-generated content, which is usually unbiased, respondents considered them to be more objective (C10: *The customer reviews are generally quite objective*). Moreover, customer reviews play two significant roles. First, enhance customers' knowledge of the product. Customers evaluate the pros and cons of the product in their reviews, providing additional information for others to determine whether the product suits them (C10: *Customers will comment on what is good and what is not so good about the product, which can help you make an appropriate choice*). In addition, because product pictures provided by online stores are often beautified and may differ from the actual products, pictures shown by buyers in the customer review section appear more authentic (C29: *I will review the buyer's show. If someone has bought the clothes and they do not look good, I will immediately skip it*). Second, assist customers in their purchase decision-making. Due to customer reviews acting as social proof (Ibrahim, 2023), they give customers more confidence to purchase products that receive positive feedback from the majority (C1: *I check the reviews the store has received. If everyone thinks its products are pretty good, I feel very confident buying from it*). Therefore, a negative review will have a noticeable impact on the sales of the corresponding product (S10: *If a key product receives a negative review, its sales will be significantly affected*). Particularly, negative reviews with pictures often have a greater impact on customers' purchasing decisions (S10: *Some negative reviews are just text-based, which has a relatively smaller impact. The worst impact comes from those with pictures, especially if the pictures do not look good*).

Dynamic score

The dynamic scores displayed on a Taobao store represent the average rating given by customers to the store over the past six months in three key areas: product quality, delivery speed and service guarantee. These scores can be regarded as a standardized and quantified form of collective customer reviews. Therefore, the dynamic scores can reflect the overall brand image of a Taobao store (S15: *If a store wants its image to be better than other stores, the first point is that its dynamic score must be among the highest across the entire online retail platform, surpassing most competitors*). However, since customers usually have lower service demands during the pre-purchase stage, they primarily refer to the score of product quality here (C2: *If a store's dynamic scores are too low, I won't consider buying from it. Particularly, the score of product quality is the most important*).

Sales volume

Taobao displays the sales volume of each product for the past 30 days. In the case of being unfamiliar with a store, customers are more inclined to trust products with high sales volumes because customers generally have a herd mentality, believing that choices made by a larger number of people entail lower risks (C15: *I prefer to purchase products with a larger sales volume because I believe there shouldn't be any issues if so many people have bought them;* S15: *Everyone has a herd mentality; people tend to buy from those with higher sales*). This aligns with Jeong and Kwon (2012), who find that the popularity of products enhances quality perception and purchase intention due to the bandwagon effect.

Price

Price is the amount of money required to purchase a product or service. In line with Ghatak et al. (2016), affordable prices are found to be one of the pursuits for customers in online shopping (C1: *Even though I want to buy a product in an online store I've followed, I still search for the same item online, compare prices and check if I might be buying it at a higher price*). Although price serves as a quality signal of the product (C2: *If the price is low, the quality is certainly not good*), the low-cost return and seven-day free return and exchange policy reduce customers' perceived risk in online shopping (Confente *et al.*, 2021). As a result, they are more willing to purchase products at lower prices (S11: *In case the cheap products they bought significantly differ from their expectations, they can apply for a*

return and refund easily).

On the other hand, price becomes the key attribute to differentiate products due to their similarity or homogeneity and the difficulty in discerning differences between various products through pictures (S3: *I think the price should also be crucial because when browsing products, customers might feel the pictures all look similar*). Consequently, if an online store's prices are perceived to be high, customers will switch to another store (S11: *If your prices are relatively high, he could easily search on the retail platform and might find something cheaper than yours*).

3.4.1.2 Intrinsic attributes

(1) Intrinsic product attributes

In the online context, customers cannot see or touch the actual products (Yun *et al.*, 2007), so customers' purchase decisions are primarily driven by their understanding of the products, i.e., product knowledge (Shafiq *et al.*, 2011). Therefore, product information displayed on online stores, such as pictures, texts and videos, is regarded as intrinsic product attributes in the online context (Chen *et al.*, 2024).

Product design

Product design encompasses aesthetics, style, function, ergonomics and the overall gestalt these elements can create for a product (Noble and Kumar, 2008). It is a critical intrinsic product attribute in the offline context (Keller, 1993), and this applies online as well (Chen *et al.*, 2024). In our interviews, respondents stated that they often add an online store to their favorites because of its product design. They mentioned three characteristics of good product design: uniqueness (S1: *My current products are relatively niche and unique, characterized by a low duplication rate across the entire online retail market. This is what makes my store more attractive to customers*), following the latest trend (S5: *Some products become popular for a few years and then lose popularity. The design of our products also needs to be updated constantly to align with market trends*) and suiting the target consumers' preferences (C5: *If the style of clothes in this online store suits me, I will follow it*). Moreover, other factors will become secondary considerations if customers appreciate a product's design (C2: *I prioritize product design first, looking for styles that I personally like, and then I consider the price;*

S10*: If they like your product design, the price may not be the primary factor*). Therefore, product design is the primary factor in achieving product differentiation for online stores and they must keep updating their products to stay competitive.

Product Detail page

Product detail pages refer to the individual webpages dedicated to displaying comprehensive information about a specific product available for sale in an online store. Generally, they are the main sources of information that customers rely on to understand the attributes and benefits of a product (Lee *et al.*, 2017). This thesis found that the information on the product detail page should be comprehensive (C12: *I should be able to get all the information I need when I look at the your product detail page*; S5: *The detail pages of products also need to be comprehensive, highlighting questions that customers frequently inquire about*) and thorough (C3: *If the detail page is very thorough, and I'm sure it's what I'm looking for, I will choose that store; If the product description is vague, I'll skip it because I'm afraid of accidentally buying the wrong product*). Comprehensive and thorough information can serve three purposes, namely, enhancing customers' product knowledge (C3: *Through the product information on the product detail page, I can see if this is what I need*), enhancing the professionalism of the store (C4: *If the product detail page is very thorough, I feel that the store is more professional*), and facilitating self-service for customers during the shopping process (C12: *Don't make me ask for more information, because I usually don't communicate with service employees much; S5: The product detail page should be comprehensive, incorporating frequently asked questions*). In addition, interesting product descriptions could also contribute to customers' perceived shopping enjoyment (C14: *If a store has interesting product descriptions, not so mechanical, I might develop a positive impression and make a purchase*).

Main picture

The main pictures refer to the product pictures displayed on the homepage of an online store and the product search results page of a retail platform. Visually appealing main pictures are what attract customers' attention and motivate them to click (C9: *When I'm browsing on Taobao, I might click on a*

product if I find its main image appealing; S3: *Whether they choose to click on your product or others depends on whose main pictures are more appealing to them*). In addition, the exquisite main pictures will also make customers feel that the online store is more professional in operating the store (S10: *If the main pictures are poorly taken, customers may perceive that your store's operation capability is not very good*) and is more trustworthy (C33: *I feel that an online store that presents its products with attractive main pictures is more trustworthy, as it involves spending a considerable amount of money*).

Product video

Product videos play the same role as the product detail pages by introducing products to help customers better understand the products (C24: *Occasionally, while browsing on Taobao, I come across a video where the product seems quite good based on its introduction, so I save it to my favorites*). Typically, there are two types of product videos, i.e., product appearance video and product usage video, with the latter having stronger impact on customers' purchase intention (Cheng *et al.*, 2022).

(2) Product assortment attributes

Overall product image

The overall product image of a store, reflected in the consistent performance of its products in various attributes such as sales, customer reviews and product detail pages, will influence customers' perception of the product quality (C7: *I usually browse through other products in the store, such as sales volume, customer reviews and main pictures of them. If the overall product image looks good, I assume the products I want to buy are also good and I proceed to place an order*) and the store's service quality (C7: *If a store has one product that sells well but the other items seem to have no sales or reviews, I assume their after-sales service might not be very good*). As a result, if a store's products vary significantly in the performance of different attributes, customers will perceive the store as less trustworthy (C27: *If a store has only one product that sells well and the rest have zero sales, I would be suspicious of this store)*. This is due to the inconsistent product image that causes customers to experience pre-purchase cognitive dissonance, which further reduces their purchase intention (Barta *et al.*, 2023).

Product variety

A rich product variety can satisfy customers' need for product selection, which further enhances their enjoyment in online shopping (C33: *A rich variety of products in an online store makes browsing and selecting products more enjoyable for me*), as well as fulfills the need for one-stop shopping across different categories (C7: *Compared with peers having a better store image, we may not have enough complementary products. They operate like a one-stop shop where you can purchase everything you need*), thereby improving the image of an online store. These findings align with Irani and Hanzaee (2011), who suggest that customers' variety-seeking has a positive and significant impact on their utilitarian and hedonic shopping experiences. However, a rich variety of products does not mean the more the better. A too wide range of products within a store will make customers concerned about the store's specialty. (C10: I *prefer stores that specialize in a relatively narrow range of products, focusing on a specific category*).

Product catalogue

For a standalone online store, website layout and product catalogue help customers locate products quickly (Chen *et al.*, 2024). However, for platform-based online stores, the website layout mode is uniformly set by the retail platform, so the product catalogue is the primary factor influencing the convenience of finding specific products, thereby providing a comfortable shopping experience (C12: *For those large stores, their product catalogues are categorized very clearly, making it very convenient to find things. This makes me feel very comfortable*).

(3) Service attributes

Product introductions and recommendations

The primary benefit of product introductions and recommendations is to help customers better understand the product, i.e., enhancing their product knowledge. When customers need more information that is not on product detail page (C12: *If I need more product information, I will ask them, but if I don't, I will place the order directly*), are not sure about which products suit them (C12: *If I'm buying a product that I'm not familiar with, such as a fishing rod for my dad, I might need to ask the service employee*), don't know how to use a product (S2: *Some customers may not know how to use these items or where to use them, so they will ask about the instructions for use*), or need information

on complementary items (S1: *We sell DIY products, and customers need to know what additional products they need to use together with what they want to buy. In this case, we will recommend some other products to them*), they tend to ask the online store's service employees for advice. Therefore, product introductions and recommendations serve as "service products" (outcome of service), i.e., what customers receive from the service delivery (Rust and Oliver, 1994).

Service attitude

Service attitude refers to the behavior tendency that service personnel more frequently demonstrates when they interact with customers (Chien-Wen *et al.*, 2013), encompassing factors such as friendliness, helpfulness and willingness to assist customers with their needs or inquiries. A good service attitude during communication with customers can enhance their purchase intention (C9: *If two stores have the same product, and one of them is more enthusiastic and provides more information when I inquire, I will likely buy from that store; A13: When we communicate with customers, we use a very polite and friendly tone, so our consultation conversion rate is very high*). This could be attributed to the fact that a positive service attitude leads to a satisfying service experience for customers (Wampande and Osunsan, 2020), which further enhances their enjoyment in online shopping and purchase intention.

Response speed

Referring to Liu and Shrum (2002), response speed is defined as the waiting period from when a customer sends an inquiry to when they receive a reply. If a store responds to customer inquiries at a slow pace, it will be perceived as having a bad attitude (C13: *During the pre-purchase stage, if the service employees respond slowly, I feel that their attitude is not very good*), which makes customers feel uncomfortable (C12: *When I ask a question and see it marked as read but don't get a reply for a long time, it makes me feel very uncomfortable because I don't want to wait*). As a result, customers will shift to other stores (C9: *The speed of response is also crucial. For example, if I inquire about the same product from two stores, and one responds more quickly, I might choose this store;* S7: *When buyers inquire, our responses may be slower compared to other stores because we are understaffed, and this has a negative impact on us*). On the contrary, if the store provides a quick reply, customers will feel very happy (S7*: As long as you respond to their inquiries promptly, they will feel*

very happy). This finding aligns with Novak *et al*., (2000), who argue that customers will negatively evaluate online stores when they experience long waiting times. Notably, it is reported that about 53% of customers found waiting too long for replies to be the most frustrating part of interacting with businesses (Fokina, 2024), and this applies to online shopping.

Customized response

Referring to Ding and Keh (2016), customized response in online shopping is defined as tailoring responses to address the specific inquiries of individual customers rather than providing standardized responses. From our interviews, this thesis found that customers strongly reject standardized responses (C15: *There are also some stores that reply to you by copying pre-edited standardized content, and this leaves a negative impression on me*; C7: *Don't use a chatbot. When I see a chatbot, I'll immediately switch to another store*). This may be because customized service gives customers greater control over the service outcome, leading to higher satisfaction and enjoyment (Ding and Keh, 2016).

Professional of services

The professionalism of services is reflected in the ability of service employees to answer customers' inquiries or resolve their problems, meaning the responses must be relevant and accurate. Professional service enhances customers' product knowledge (C12: *Answer exactly what I ask, right? Don't go off-topic. I want to see the answers I'm looking for in your responses*) and makes them feel more comfortable during communication (C12: *If the service employees are well-trained and professional, it's very pleasant to communicate with them*). If the service employee is unprofessional, it is unlikely that customers will shop at this online store (C3: *If the service employees' response is not professional, and there is a mismatch between what I ask and their answers, making communication difficult, I won't consider that store*; S3: *When customers inquire about certain questions, can you perfectly address their concerns? If so, customers are likely to acknowledge your service and proceed to place an order*). This could be attributed to the fact that successful service outcomes are characterized by efficiently and effectively resolving customers' problems or requests (Haugeland *et al.*, 2022), which requires the professionalism of services. In addition, the professionalism of services facilitates the two-way communication between customers and service employees, which significantly affects customers'

perception of shopping enjoyment (Yoo *et al.*, 2010).

(4) Environment attributes

Store decoration

Store decoration, also known as ambient elements, refers to how the homepage of a store is visually presented and organized to attract and engage customers, including the layout, design style, color, font, music, logo design and so on (Chen *et al.*, 2024). A well-decorated store not only creates a visually appealing impression for customers, making them enjoy browsing its products (C26: *If a store lacks any decoration and looks plain, I don't even want to browse it*), but also gives them the perception that the store is large-scale (C12: *For larger online stores, when you click into them, they usually enhance the decoration, while smaller online stores are generally very simply decorated*) and professional (S13: *The stores with better image always decorate cute and sophisticated, creating a sense of professionalism*). Therefore, store decoration not only triggers positive emotional responses, such as comfort, pleasure and relaxation (Chen *et al.*, 2024), but also assists customers in evaluating the store's trustworthiness.

3.4.2 Benefits

In line with categorizing the 21 pre-purchase attributes of platform-based online stores into intrinsic and extrinsic categories, the associated benefits include both perceptual and experiential aspects, which are summarized from our thematic analysis results and elaborated below.

3.4.2.1 Benefit indicator: signals to assist customers in their purchase decisions

Extrinsic product and store attributes do not directly influence customers' shopping experience, but they serve as indicators of the benefits provided by the store and its products. (1) *Store benefit indicators*. Tmall stores and those with higher credit levels, a greater number of fans and longer store age are perceived as offering superior service quality and being more trustworthy and professional (2) *Product benefit indicators*. Positive customer reviews, high dynamic scores associated with product quality and large sales volumes of products are perceived as indicators of higher quality and more accurate descriptions, while the low price serves as an indicator of offering better value for money. In addition to these extrinsic attributes, the excellent performance of intrinsic product attributes (i.e.,

product design, product details page, main picture, and product video) and product assortment attributes (product variety and overall product image), as well as store decoration, also indicates that the store is more likely to be trustworthy and professional and offer high-quality services.

3.4.2.2 Experiential benefits: enhancing customers' shopping experience

Online store attributes provide customers with utilitarian and hedonic experiential benefits (Babin *et al.*, 1994). (1) *Utilitarian benefits.* Firstly, in addition to product introductions and recommendations, professionalism of services, intrinsic product attributes (i.e., product design, product details page, main picture and product video) and customer reviews help customers enhance their product knowledge and evaluate the product's suitability for themselves, without being disturbed or influenced by the store's service staff. This could facilitate a convenient self-service purchase journey. Secondly, product assortment attributes (product variety, product catalog and overall product image) offer customers the benefits of convenience, product selection and one-stop shopping. That is, customers can choose their favorite from a wide range of products and conveniently purchase related items as well. (2) *Hedonic benefits*. All positive intrinsic attributes, whether associated with the store (e.g., product assortment, customer service, store decoration) or the product (e.g., product design, product detail page, main picture, product video), contribute to a pleasant, comfortable, and enjoyable experience.

3.4.3 Attitudes

Once customers evaluate or experience these pre-purchase attributes and the associated benefits, they ultimately express their attitudes by their behavior: whether to buy from this store and whether to purchase this product.

3.4.3.1 Purchase intention

Customers' purchase intentions are primarily driven by product-level attributes, whether intrinsic or extrinsic, which provide them with product knowledge and help them evaluate the quality and suitability of the products. For example, as C5 stated, "*If I want to buy something, I definitely check the customer reviews, the sales volumes, and see if the product style suits me. If everything seems good, I'll place an order"*. Additionally, when they are not ready to buy yet, they will add it to their favorites (C20*: I usually come across unique items, but if I don't know when I'll want to buy them, I just add them*

to my favorites first), or add it to their carts first (*If I want to compare prices or see if there are better options, I'll add it to my shopping cart first. -C17*).

3.4.3.2 Store choice

The choice of an online store is primarily influenced by store-level attributes, whether intrinsic or extrinsic. This is possibly because customers use the brand image of an online store as an extrinsic cue to evaluate the quality of its products (Chen *et al*., 2024), as C11 stated: "*If the overall impression of the store is not good, I may not trust its individual products either*". However, some respondents say that the store brand image does not affect their purchasing decisions (C13: *If I like the product, I don't really care whether the store has a credit level of a crown or just a few red hearts; I'll just buy it directly*). This is primarily because the seven-day free return and exchange policy reduces customers' shopping risks (C1: *If the store doesn't look great, I'll still buy the product to check it out. After all, there's a 7-day free return and exchange policy, so at most, I just waste a few yuan on shipping*). Another group of respondents stated that whether to consider the store's brand image depends on the price level (C28: *If I'm buying something more expensive, I'll just choose Tmall stores directly. But for cheaper items, I don't care whether it's a Tmall store or a Taobao store*) and category of the product they are purchasing (C33: *Whether to choose a Taobao store or a Tmall store depends on what I am buying. It doesn't matter much for clothing, but if I'm buying cosmetics, I would consider Tmall stores first as it's usually safer*).

3.5 Findings regarding post-purchase attributes

The results of thematic analysis of interviews regarding post-purchase platform-based online store attributes are presented in Table 3-4 and Figure 3-4, encompassing three overarching themes, eight themes and 22 sub-themes.

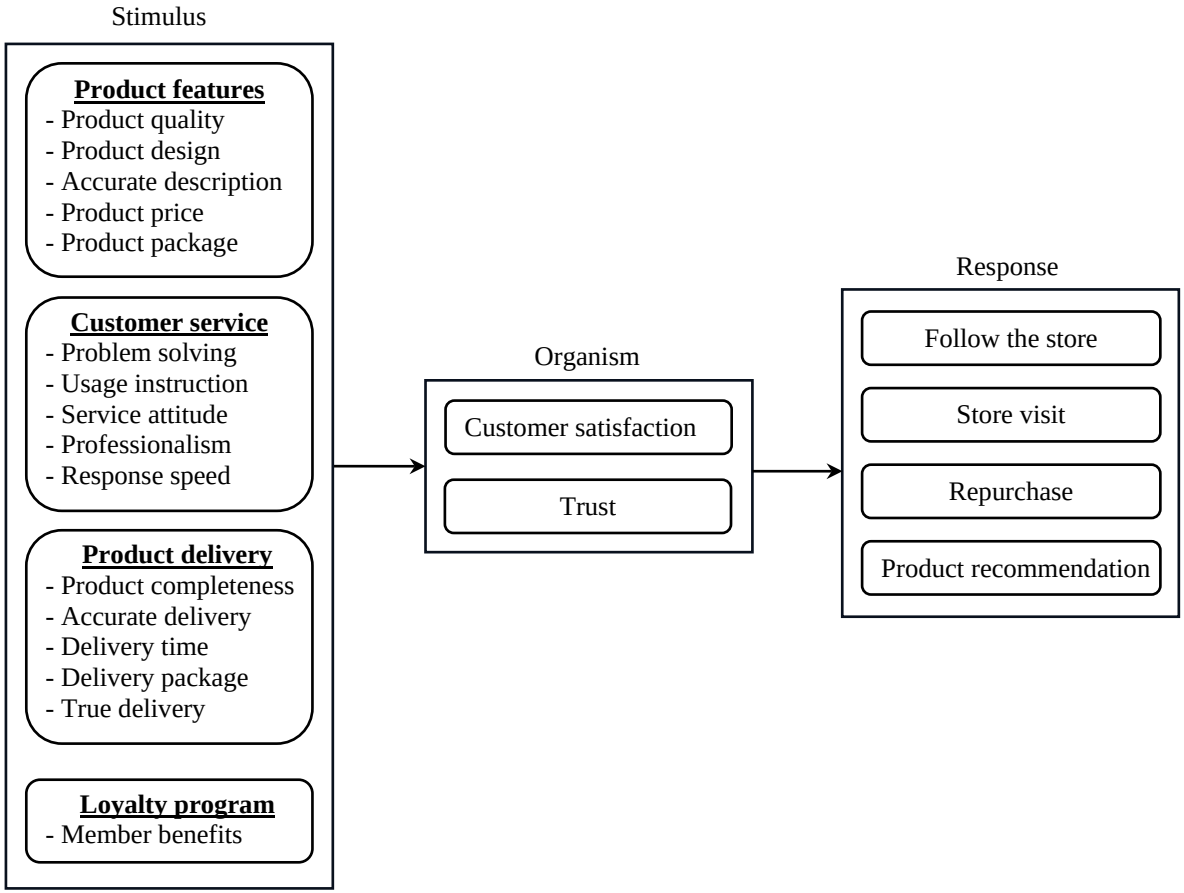
Table 3-4. Results of thematic analysis of interviews regarding post-purchase attributes

Overarching theme	Theme	Sub-theme	Supportive customers		Supportive owners	
			Number	Code	Number	Code
Stimulus	Product	Design	13	32	9	65
		Price	8	16	13	59
		Quality	30	127	10	44
		Product matching description	7	9	5	10
		Product packaging	4	14	1	5

	Product delivery	Product condition	9	15	4	6
		Delivery time	21	54	11	39
		Delivery packaging	6	13	-	-
		Accurate delivery	5	9	-	-
		True delivery	5	18	-	-
	Customer service	Usage instruction	2	4	4	5
		Service attitude	19	41	4	11
		Response speed	7	16	-	-
		Professionalism of service	6	10	2	6
		Problem-solving	23	85	13	47
	Membership benefits	Membership benefits	-	-	3	10
Organism	Satisfaction	Satisfaction	6	11	2	3
	Trust	Trust	8	12	1	1
Response	Response to the store	Follow the store	22	40	-	-
		Revisit the store	10	11	-	-
	Response to the product	Repurchase intention	22	47	3	5
		Product recommendation	20	34	2	10

Note: Number refers to the number of supportive customers/store owners, and code refers to the number of codes used in the thematic analysis of interviews with customers/store owners.

Figure 3-4. The influence of post-purchase online store attributes on customers' responses



3.5.1 Stimulus

3.5.1.1 Product attributes

Product design.

The product design matching personal preferences is a key reason why customers follow specific stores (*If the clothes I buy at this store fit well and I really like their style, I will follow this store*. -C12). This may be because product design not only creates functional value through added features and superior performance, but also provides deeper emotional value, including social value, altruistic value, and affective value (Noble & Kumar, 2008), thereby enhancing customers' repurchase intention.

Product price

If the price of a product is comparable to similar products and its quality matches the price paid by the customer, it is considered reasonable (Asmoro and Tuti, 2023). Therefore, value for money could create a good store image in customers' minds (C19: *A good impression of an online store, in my opinion, ultimately depends on the value for money of its products*). This aligns with Suhaily and Soelasih (2018), who found that price perception significantly affects customers' loyalty tendency and repurchase intention.

Product quality

Product quality refers to the totality of features and characteristics of a product, determining whether it can satisfy customers' specific needs (Gupta *et al.*, 2016). After customers receive the product, the quality determines whether they will make another purchase (*If a customer buys your product and finds quality issues, they won't come back.* -S10; *I would likely become a repeat customer and follow it if I received a product of good quality from this store on my first purchase.* -C29).

Matching product description

Matching product description means that the actual product received is consistent with the product described by the online store through pictures, text, videos, etc. When customers browse a product online, they form an expectation about the product based on its description. Whether the actual product they receive exceeds or falls short of expectations has a great impact on the brand image of the store in the mind of customers (*Another factor is whether the item I receive matches my expectations. If there*

is a significant difference from what I expected after browsing pictures, it will also negatively impact my perception of its store image. -C15). This aligns with Roy Dholakia and Zhao (2010), who found that matching product descriptions could significantly enhance customer satisfaction and their repurchase intention. Expectation confirmation theory, which explains that the actual product meeting customers' initial expectations will enhance their satisfaction and repurchase intention (Pradana, 2022), could provide insights into why customers value this attribute.

Product packaging

Packaging is the container for a product – encompassing the physical appearance of the container and including the design, color, shape, labeling and materials used, playing a vital role in brand communication (Agariya *et al.*, 2012). A well-designed packaging conveys to customers that the seller is committed to delivering good products (*Upon receiving an item, I first examine its packaging. If the packaging is refined, it suggests that the store is committed to its products.* -C5). As a result, the packaging of products significantly influences the store image (*If your product packaging is of poor quality, it will undoubtedly damage the brand image of the store*-S8). This contradicts Asmoro and Tuti (2023), who found that product packaging only influences the initial purchase decision but does not influence repurchase decisions.

3.5.1.2 Delivery attributes

Product condition

Product condition refers to whether the products customers purchased are intact upon reaching them (Akıl and Ungan, 2022). If customers receive the product intact, they will be satisfied (C8: *The books from this store consistently arrive intact, which pleases me greatly, while those from other stores always arrive in terrible condition*). Since damaged products are unusable, customers need to return or exchange them (Akıl and Ungan, 2022), which increases the time cost of online shopping. Therefore, they might not purchase from this store again next time.

Delivery time

Delivery time is the period of time a customer orders a product until the product arrives at the customer (Kaligis *et al.*, 2024). In the context of online shopping, customers cannot physically see the

actual product when placing the order, so they will look forward to seeing it. In line with Roy Dholakia and Zhao (2010), this thesis found that promptly delivering the product to customers could enhance their satisfaction with online shopping (*The most pleasant surprise is when I expected the item I bought to arrive in two or three days, but it arrived the next day*. -C25).

Delivery packaging

Delivery packaging refers to the materials and containers used to package and protect products during delivery to customers. The majority of online customers felt that higher level of packaging was required to deliver the products safely without any damage (Chueamuangphan et al., 2020). Moreover, it also affects customers' perception of the sellers' dedication to their online stores (*If the parcel is packaged carefully, I feel satisfied upon receiving it because I perceive that the sellers have put a lot of effort into their stores.* -C8). This explains why only about 14% of online customers felt that the product arrived with "excessive" packaging, even though they simply discarded those packaging materials (Chueamuangphan *et al.*, 2020).

Accurate delivery

Accurate delivery refers to delivering the correct products in the correct quantities, which directly affects the likelihood of returns and exchanges (Akıl and Ungan, 2022). As a result, it significantly increases the time cost of online shopping and resulting in an unpleasant shopping experience (*I once bought a piece of clothing in size M, but they sent me size L instead. When I wanted to exchange it, they told me they were out of size M, which made me very angry*. -*C32*). Moreover, it can lead them to question the store's professionalism and attitude, ultimately harming the store's brand image (*My most unpleasant shopping experience was when I ordered something, and they sent me the wrong item. I felt very upset about this store. I thought they were unprofessional, careless, and had a bad attitude*. -C3)

True delivery

True delivery is the opposite of fake delivery, which refers to the situation where a delivery tracking number has been provided, indicating that the item has been delivered, but in reality, it has not been. Customers will feel disappointed about the online store because of its fake delivery behavior (*Actually, the seller didn't deliver the item; they just filled in a tracking number. In that case, I will never*

buy from them again. -C8), as they prefer online stores operating with integrity (*I am satisfied with honest online stores. The ones I dislike the most are those that engage in deceptive practices.* -C3).

3.5.1.3 Service attributes

Usage instruction

For products that are not clearly understood in terms of how to use them, or where customers easily encounter issues during use, providing usage instructions is necessary. (*The printer often suddenly stops working, so I frequently have to ask service employees for help. This store always provides very detailed answers and never shows impatience. That's why I always buy printers from this store, as I feel I need their guidance on how to use the printer* – S10). Since online customers rely on text, pictures or videos instead of face-to-face demonstrations in an offline store, understanding how to use a product can be more challenging. Therefore, service employees should be more patient and meticulous in their usage instructions.

Service attitude

A good service attitude during communication with customers can enhance their satisfaction and intention to follow the store (*I also have followed some stores, mainly because their clothing quality is good and I find their service attitude satisfactory.* -C14). Especially after customers have been using the products for a long time, the store's service attitude towards them remains excellent (*Whenever my printer malfunctions, I reach out to the online store. Even after three years of purchase, they still respond enthusiastically, leaving me with a very positive impression of this store*. -C9). This may be because a good service attitude makes customers feel that the store is willing to take responsibility for its products, which enhances customers' trust in this store and thereby reduces the perceived risk of re-purchasing.

Response speed

In line with Pham and Ahammad (2017), the response speed significantly affects customer satisfaction due to the following three reasons. First, customers do not like to spend time waiting (*If you ask a question and it shows as read but they don't respond for a long time, it makes me feel very uncomfortable because I don't want to wait.* -C12). Second, the speed of response is also considered a

signal of service attitude (*Whether it's before or after the sale, as long as they respond promptly, it's fine. If they don't respond in a timely manner, I feel that their service attitude is not very good.* -C15). Third, slow response to customer messages will make customers feel that the store is not serious about their business (*If they don't respond in a timely manner, I will feel that this store isn't serious about their business. -C15*), thereby leaving a bad impression (*At some stores, when I send a message, their customer service takes a long time to respond, which gives me a very poor impression of the store. -C15).* As a result, response speed is one of the most common types of customer reviews for online stores (Pham and Ahammad, 2017).

Professional

The professionalism of services is reflected in their ability to accurately answer customers' inquiries or effectively address their problems. Professional services make customers feel the service employee is very reliable (*Do not make mistakes during the communication process, so that the customer will feel that the service employee is quite reliable. -R15*), while unprofessional customer service leaves customers a dissatisfied shopping experience (*Once the store did not send out my order for a long time, so I contacted customer service, but they were clueless. I was very dissatisfied.* -C4). This is mainly because professional service can make the use of the product and the handling of any product issues smoother for the customer.

Problem solving

There are two reasons for returns, refunds, resends and exchanges. One is due to the online store's fault, such as quality issues with the product or damage during delivery. In this case, quick handling of these issues can satisfy their customers (*If the product arrives damaged and the service employee can promptly resolve this issue through communication, I am still satisfied with this store.* -C5). The other is due to the customer's own reasons, such as not liking it after receiving it or improper use causing a quality issue. In this case, customers will be pleasantly surprised if the store agrees to accept their request for returns or exchanges (*I bought a pot and only started using it after three months, but then I found that I didn't like it. However, it was already past the free return period and I had thrown away the product packaging. Surprisingly, the seller agreed to accept the return, which made me feel very*

comfortable and satisfied. -C7). This is because in online shopping, customers primarily rely on pictures and text to evaluate the product, making it difficult to make accurate purchasing decisions; therefore, the ability to return or exchange unsatisfactory products is very important to them (Javed *et al.*, 2020).

3.5.1.4 Benefit attributes

Membership benefits

Membership benefits refer to the advantages or privileges that customers receive as a result of being a member of an online store, which primarily includes the following two types. First, economic benefits. For example, establishing a membership system that offers discounts to customers (*We have a membership system and customers will receive benefits for long-term purchases, such as member discounts.* -S6). Second, emotional benefits. For example, strengthening connections with customers through a private brand community (*If you want to enhance the customer's impression of your store, you can communicate with them and encourage them to join your private brand community, such as a WeChat group.* -S15). Since online customers will feel that they are special when they receive additional offers from retailers (Ma *et al.*, 2022), membership benefits could enhance customer satisfaction and their repurchase intention.

3.5.2 Organism

In line with previous studies, the individuals' internal assessment states (Organism), triggered by various post-purchase store attributes (Stimulus), are customer satisfaction (e.g., Bansal and Sharma, 2024; Soesanto, 2023) and trust (e.g., Javed *et al.*, 2020).

Satisfaction. Satisfaction refers to consumers' overall evaluation of the total buying and consumption experience with services or products over a period of time (Javed *et al.*, 2020). When the store's products or services meet the customer's expectations, the customer will be satisfied (Ma *et al.*, 2022). For example, C2 stated that "*If I feel that this product is worth its price and offers good value for money, I will be quite satisfied with the store*".

Trust. Trust refers to a willingness to rely on an exchange partner in whom one has confidence (Lymperopoulos *et al.*, 2010). To mitigate the effects of perceived risks in online shopping, consumers

rely on their trust in the retailer (Javed *et al.*, 2020). For example, C3 stated that "*If I have bought from this store and found the quality to be very good, I will save it to my favorites. Next time I buy their products, I will feel more confident*".

3.5.3 Response

In line with previous studies (e.g., Bansal and Sharma, 2024; Ma *et al.*, 2022; Naafiarsha *et al.*, 2020), in addition to following the store (*After I have bought a product and received it, if I feel the quality is good, I will save the store to my favorites.*-C2), the final decisions of customers (response) include repurchasing intention (*There are some stores where I repeatedly purchase certain items for convenience because I find searching for a product to be troublesome.*-C27), revisiting the store (*Because I often buy from them, I also check out their new arrivals when I have free time.* -C10), and recommendations (*If I find this product works well and my friends happen to need it, I will recommend it to them.* -C27).

3.6 Discussion

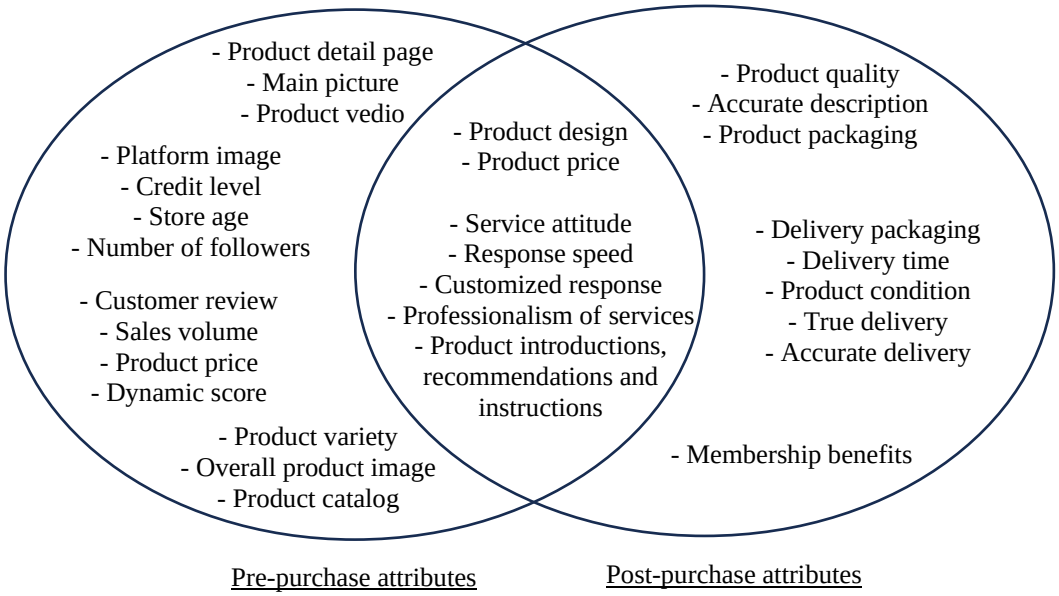
3.6.1 Interpretation of findings

3.6.1.1 The differences between pre-purchase and post-purchase attributes of platform-based online stores

As this thesis predicted, there are significant differences between pre-purchase and post-purchase attributes of platform based online stores, as shown in Figure 3-5. Specifically, among the 21 pre-purchase attributes, 16 are exclusively associated with the pre-purchase stage. These attributes primarily include extrinsic store attributes and extrinsic product attributes that help customers assess the online store and its products, as well as the product information attributes that help customers understand the product. These attributes are not important during the post-purchase stage because the customer has already placed the order or received the product. In contrast, among the 16 post-purchase attributes, nine are exclusively associated with the post-purchase stage. These attributes primarily include product attributes, delivery attributes and benefit attributes, as these can only be experienced and touched after placing an order or receiving the product they purchased. In addition, there are seven attributes present in both the pre-purchase and post-purchase stages, namely, product design, product price and four

service attributes.

Figure 3-5. Differences between pre-purchase and post-purchase attributes of platform based online stores



3.6.1.2 The differences in pre-purchase attributes between standalone and platform-based stores

Comparing the 21 pre-purchase attributes of platform-based online stores identified in this chapter with those of standalone online stores identified in previous studies (Table 2-6 and Table 3-1) reveals significant differences between them (Table 3-5). Firstly, standalone online stores emphasize technical attributes such as security and privacy (e.g., Jiao *et al.*, 2021), ease of use and functionality (Ghatak *et al.*, 2016). However, these attributes do not apply to platform-based online stores, as they solely rely on the system developed by the online retail platform. Secondly, for standalone online stores, store environment attributes, such as website design and layout, are very important attributes that create a unique visual store brand image (Yun *et al.*, 2007). However, platform-based online stores are constrained by the fixed templates provided by the online retail platform, limiting their flexibility in store decoration (Omikron, 2021). In contrast, standalone online stores have more freedom in this regard. Therefore, the store environment, represented by store decoration, may be less critical for platform-based online stores. Thirdly, extrinsic attributes provided by the online retail platform as a third party, especially extrinsic product attributes, such as customer reviews and sales volume, are crucial for platform-based online stores. This is because there are a vast number of stores on online retail platforms,

and these extrinsic attributes help customers quickly assess and compare different stores and products. However, these extrinsic attributes are not applicable to standalone online stores. Instead, standalone online stores typically display their brand name, logo, corporate image, offline store image and corporate information on the homepage of their websites. This is mainly because standalone online stores usually have higher brand awareness.

Table 3-5. The differences in pre-purchase attributes between standalone and platform-based stores

Attribute category	Standalone online store (Previous literature)	Platform-based online store (Results of this study)
Technical attributes	Privacy, security, navigation, ease of use, search function, etc.	N.A.
Environment attributes	Unique website design, layout, etc.	Unified template provided by the retail platform
Extrinsic attributes	Brand name, Logo, advertising, retail corporate image, offline store image, retail corporate information	Store level: Platform image, credit level, store age, number of followers Product level: Customer review, dynamic score, sales volume

3.6.1.3 The differences in pre-purchase attribute emphasis between online store owners and customers

According to our thematic analysis, the six attributes most frequently mentioned by store owners are price (n=13, 86.7%), product detail page (n=13, 86.67%), product introductions and recommendations (n=10, 66.67%), product design (n=9, 60.0%), main picture (n=9, 60.0%) and product variety (n=9, 60.0%). This indicates that they focus more on the intrinsic attributes associated with products to highlight their advantages, primarily because online store owners have a high degree of control over their products, whether individual items or the overall product assortment, allowing them to differentiate their stores from competitors.

In contrast, the attributes most frequently mentioned by customers are customer reviews (n=28, 80.0%), sales volume (n=24, 68.57%), platform image (n=18, 51.43%), price (n=15, 42.86%) and service attitude (n=14, 40.0%). This indicates that they rely more on extrinsic attributes to evaluate the products. This is because customers cannot see or touch the actual products in online stores (Yun et al., 2007), so these extrinsic attributes serve as social proof for customers when assessing online stores and their products.

3.6.2 Theoretical contributions

Firstly, this chapter is the first study focusing on revealing the attributes shaping the brand image

of platform-based online stores. It found significant differences in the pre-purchase attributes between standalone and platform-based online stores, suggesting the necessity of examining the applicability of existing findings on the brand image or attributes of standalone online stores to platform-based online stores.

Secondly, unlike previous research on online store brands, which does not distinguish between the pre-purchase and post-purchase stages, this chapter identifies and categorizes pre-purchase and post-purchase attributes, respectively. It found that there are significant differences in the attributes of platform-based online stores between these two stages. This suggests that the existing findings on the store image need to be re-evaluated.

Thirdly, unlike previous studies that primarily identify online store attributes from existing literature, as shown in Table 3-1, the attributes identified in this chapter come from a thematic analysis of interviews with online customers and store owners, reflecting current customers' online shopping experience. This is because, with the development of the retail e-commerce industry, new store attributes continuously emerge due to the changing nature of technology (Roy Dholakia and Zhao, 2010).

Finally, through thematic analysis, this chapter found that these 21 pre-purchase attributes fall into six categories: extrinsic product attributes, extrinsic store attributes, intrinsic product attributes, product assortment attributes, service attributes and store environment attributes. In addition, the 16 post-purchase attributes are classified into four categories: product attributes, delivery attributes, service attributes and benefit attributes. This finding could be used to develop specific scales for measuring the pre-purchase and post-purchase brand image of platform-based online stores, thereby contributing to the research field of online store branding.

3.6.3 Practical contributions

Firstly, given the richness and diversity of platform-based online store attributes, retailers need to assess their strengths and weaknesses to determine the attributes where they can establish their advantages. For example, during the pre-purchase stage, a new online store with a low credit level and

sales volume can attract customers and boost their confidence in purchase by improving the main pictures of its products and the associated product detail pages.

Second, since online store owners tend to prioritize intrinsic attributes associated with products, while online customers focus more on extrinsic attributes, online store owners are suggested to pay more attention to extrinsic attributes. For example, given that customers rely heavily on reviews to choose a product, online store owners could provide incentives to encourage more detailed feedback, such as offering discounts to customers who write detailed reviews with pictures for their next purchase.

3.6.4 Future research avenues

While this chapter offers significant contributions, there are some limitations. First, this chapter is limited to identifying and categorizing various pre-purchase and post-purchase attributes of platform-based online stores through a thematic analysis of interviews. Future research could focus on specific attributes to explore in depth how they influence customers' purchasing decisions and shopping experiences by utilizing a quantitative approach. Second, this chapter focuses on Taobao as the research object and does not cover other types of online retail platforms. Future research could explore the attributes of online stores operating on other online retail platforms, such as the live-streaming e-commerce platforms TikTok.

Chapter 4: Customers' prioritization of platform-based online store attributes

Chapter overview. This chapter uses the Best-Worst Scaling approach to uncover customers' prioritization of different online store attributes and employs K-means clustering to identify distinct customer segments that prioritize different categories of store attributes. First, it reviews the research on the relative importance of various store attributes and post-purchase experiences. Then it introduces the Best-Worst Scaling questionnaire design, data collection process and K-means clustering method used in this chapter. Next, it reports on the importance rankings of different attributes in the pre-purchase and post-purchase stages and identifies the various customer segments during these two stages. Finally, it concludes with a discussion of findings.

4.1 Introduction

Existing studies on online store attributes primarily examine the impact of various store attributes on customers' purchase intention (e.g., Badrinarayanan *et al.*, 2014; Anwar *et al.*, 2020) and store loyalty (e.g., Jin and Kim, 2010; Johnson *et al.*, 2015). It is worth noting that research on the relative importance of a variety of online store attributes is scarce, with only a few scholars studying standalone online stores in this regard (e.g., Ganesh *et al.*, 2010; Ghatak *et al.*, 2016; Pascoe *et al.*, 2017).

However, researching the relative importance of various platform-based online store attributes is crucial for the following three reasons. Firstly, from the retailers' perspective, platform-based online stores possess a variety of attributes, such as product attributes, service attributes and environmental attributes (Chen *et al.*, 2024), as they interact with customers across multiple touchpoints. Therefore, they must invest in specific attributes where they excel (Roy Dholakia and Zhao, 2010), as most of them are SMEs with limited resources (Sheng, 2023). Second, from the customers' perspective, according to the multi-attribute utility theory, customers evaluate products based on multiple attributes and assign different weights or importance to each attribute when making purchasing decisions (Butler et al., 2008), which also applies to customers' choices of platform-based online stores. Therefore, retailers must focus on the attributes that customers are most concerned with. Third, from the contextual perspective, due to

the advancements in the functionality of online retail platform systems and the enriched shopping experiences of customers, the importance of various attributes would be dynamic and change over time. For example, in the early stage, Lin *et al.* (2008) found that the most important factor affecting customers' purchase intention on Taobao was a lack of trust due to internet security and privacy concerns. However, later research by Han and Kim (2017) found that these two attributes no longer significantly impact customers' purchase intentions. Therefore, identifying which store attributes are important in the current online retail environment is highly valuable.

Based on the above analysis, this chapter aims to address the gap in research on the relative importance of various attributes of platform-based online stores. Moreover, considering that the attributes valued by customers during pre-purchase and post-purchase are different, this chapter distinguishes between these two stages. Specifically, this chapter addresses the following questions:

RQ1: What are the most and least important pre-purchase and post-purchase attributes of platform-based online stores to customers?

RQ2: Are there distinct customer segments that prioritize different pre-purchase and post-purchase attributes?

4.2 Literature review

4.2.1 Studies on the relative importance of online store attributes

Research on the attributes of online stores is limited (Chen *et al.*, 2024), with studies comparing the importance of different attributes being even rarer, with only a few scholars focusing on standalone online stores. For example, Ganesh *et al.* (2010) utilized the Likert scale to gauge the importance of six distinct online store attributes, namely e-store essentials, offline presence, price orientation, website attractiveness, merchandise variety and web security/certification, to establish typologies of online customers. Ghatak *et al.* (2016) employed a pairwise comparison approach to evaluate customer prioritization across and within five categories of online store attributes, including website design, e-tail store attributes, outcome quality, service recovery and e-store reputation. Furthermore, Pascoe *et al.* (2017) utilized a best-worst scaling approach to assess the relative importance of website attributes pertaining to communication and aesthetic dimensions and use this as a basis to further identify different

customer segments. Although research in this area is scarce and limited to standalone online stores, it still validates the significance of studying the relative importance of attributes for platform-based stores and provides valuable reference for this thesis as well.

4.2.2 Studies on post-purchase customer experience

Although most studies do not distinguish between pre-purchase and post-purchase stages, there are also a few studies that focus specifically on the post-purchase stage. Post-purchase experience initiates after purchase of the product and ends up with either consuming or returning the same (Goyal and Deshwal, 2023). As shown in Table 4-1, the existing limited research on post-purchase customer experiences primarily focuses on the following four categories of attributes. (1) The product itself, including product-related (Goyal and Deshwal, 2023), product in hand (e.g., Kumar and Anjaly, 2017) and packaging (Ma *et a*l., 2022). (2) Product delivery, including delivery (e.g., Kumar and Anjaly, 2017) or shipping (e.g., Pink & Djohan, 2021), tracking (e.g., Naafiarsha *et al.*, 2020) and order fulfilment (Pink and Djohan, 2021). (3) Customer service, including customer support (e.g., Kumar and Anjaly, 2017) or customer service (e.g., Naafiarsha *et al.*, 2020), post-purchase communication and personalized factors (e.g., Goyal and Deshwal, 2023), return, exchange and maintenance (e.g., Javed *et al*., 2020). (4) Benefits (e.g., Kumar and Anjaly, 2017).

Table 4-1. Post-purchase online store attributes examined in existing studies

	Title	Independent variables	Mediating variables	Moderate variables	Dependent variables
Kumar and Anjaly, 2017	How to measure post-purchase customer experience in online retailing? A scale development study	Delivery, product in hand, benefits, customer support, return and exchange, feel-good factors		-	Online post-purchase customer experience
Naafiarsha *et al.*, 2020	E-Trust and Post-Purchase Experience on Repurchase Intention through Customer Satisfaction: Study on Instagram Account@ Jastipmlg	Customer Service, shipping, tracking, return	Customer satisfaction	-	Repurchase intention
Javed *et al.*, 2020	Role of online retailers' post-sale services in building relationships and developing repurchases: a comparison-based analysis among male and female customers	Product return, product exchange, product maintenance	customer satisfaction, trust	-	Repurchase intention
Pink and Djohan, 2021	Effect of ecommerce post-purchase activities on customer retention in Shopee Indonesia	Customer service, shipping, tracking, return and order fulfilment	Customer satisfaction	-	Customer retention
Ma *et al.*, 2022	Fresh food online shopping repurchase intention: the role of post-purchase customer experience and corporate image	Delivery, product in hand, benefits, customer support, return and exchange, packaging	Customer satisfaction	Corporate image	Repurchase intention
Bansal and Sharma, 2024	Post-purchase online customer experience with apparel retailing: a structural equation modelling approach	Delivery, product in hand, benefits, customer support, return and exchange	Customer satisfaction	-	Repurchase intention
Goyal and Deshwal, 2023	Online post-purchase customer experience: a qualitative study using NVivo software	Delivery, product related, benefits, customer support, return & refund, post-purchase communication, personalized factors	Online post-purchase customer experience	-	E-WOM (customer reviews)
Soesanto, 2023	Post-Purchase Experience in Online Shopping and Their Impact on Customer Satisfaction at Blibli	Shipping service, return service, tracking service, customer service	Customer satisfaction	-	future purchase intention

In some studies, scholars use one variable to represent a specific category of attributes, such as delivery and product in hand (Kumar and Anjaly, 2017). In this case, the depth of the study of each attribute category is limited because it does not delve into the various specific attributes within this category. While some studies have used more variables, each representing a specific attribute, they have always been limited to two or three variables. For example, Soesanto (2023) adopts shipping services and tracking services to represent product delivery. However, other attributes associated with product delivery, such as delivery speed and time slot (Nguyen et al., 2019), are not included. Moreover, some attributes may no longer be valued by customers nowadays. For example, since Taobao offers real-time logistics information now, customers may no longer value order tracking. Therefore, it is necessary to comprehensively identify the attributes that are important to customers in the current online retail environment.

4.3 Methodology

4.3.1 Best-worst scaling

The Best-worst scaling, also known as maximum difference scaling, is a theory-based scaling method that applies a discrete choice experiment based on a random utility theory (Flynn and Marley, 2014). Specifically, it assumes that respondents may make errors, but their repeated choices reveal that they prioritize some items (or attributes) over others within the same attribute list (Pascoe *et al.*, 2017). Best-Worst Scaling has the desirable property of maximizing the differences between a variety of attributes, unlike rating scales where two fairly important items might be rated equally or given scores like 4 and 5 (Pascoe *et al.*, 2017), respectively. Therefore, it is more effective in discriminating among attributes (Heo *et al.*, 2022).

Several studies have shown that the Best-worst scaling is superior to Likert scaling in comparing the relative importance of various attributes (Heo *et al.*, 2022; Lee *et al.*,2007). First, Best-worst scaling is a direct approach that measures the relative importance of a list of attributes by making trade-offs between different attributes (Louviere and Islam, 2008). Second, individuals' ratings in the Best-worst scaling condition are more consistent than those in the Likert scale condition, demonstrating a higher level of reliability (Burton *et al.*, 2021). Third, it is not vulnerable to problems such as different response

styles of respondents (Baumgartner and Steenkamp, 2001) and bias resulting from cultural differences (Lusk and Briggeman, 2009).

4.3.2 Questionnaire design

In practice, the Best-worst scaling includes a series of choice tasks, each of which contains a subgroup of items derived from a list. This chapter utilized a balanced incomplete block design (BIBD) to design choice tasks as in Pascoe *et al.* (2017). This instrument pairs every attribute with every other attribute, ensuring that respondents select those attributes they consider most or least important. The key features and definitions associated with a BIBD include treatment, block, incomplete and balanced, as elaborated below.

Treatment: The different conditions or items being compared in the experiment.

Block: A group or set in which the treatments are tested.

Incomplete: Not all treatments are tested in each block.

Balanced: Each pair of treatments appears together in the same number of blocks.

A BIBD is defined by the parameters (v, b, r, k, λ), where: v = the number of treatments, b = the number of blocks, r = the number of times each treatment appears in the design, k = the number of treatments in each block, λ = the number of times each pair of treatments appears together in a block. The design is called “balanced” because each pair of treatments appears together in exactly λ blocks, ensuring that the design is uniform and comparisons between treatments are unbiased.

This chapter conducted two separate online surveys: (1) for the first survey associated with 21 pre-purchase attributes (Online survey 1), there are 21 choice tasks in total, with each of them consisting of five attributes, as shown in Table 4-2. Each attribute appears in five choice tasks and is compared with four different attributes each time. (2) For the second survey associated with 31 pre-purchase and post-purchase attributes (Online survey 2), there are 31 choice tasks in total, with each of them consisting of six attributes, as shown in Table 4-3. Each attribute appears in six choice tasks and is compared with five different attributes each time.

Table 4-2. BIBD for online survey 1 (21 tasks, 21 attributes, 5 evaluations each)

	Online store attributes				
Choice tasks	Attribute 1	Attribute 2	Attribute 3	Attribute 4	Attribute 5
Task 1	15	2	13	6	19
Task 2	17	19	8	18	3
Task 3	9	3	6	21	20
Task 4	9	8	10	15	12
Task 5	11	9	17	13	1
Task 6	18	12	7	13	21
Task 7	12	3	14	2	11
Task 8	7	20	17	10	2
Task 9	6	1	10	18	14
Task 10	14	5	8	20	13
Task 11	6	7	11	16	8
Task 12	16	10	4	13	3
Task 13	12	19	20	16	1
Task 14	10	21	5	11	19
Task 15	6	12	5	17	4
Task 16	4	7	9	19	14
Task 17	11	15	20	18	4
Task 18	15	7	3	5	1
Task 19	16	9	5	18	2
Task 20	21	14	16	17	15
Task 21	2	1	8	4	21

Note: The numbers in the BIBD represent 21 different online store attributes.

Table 4-3. BIBD for online survey 2 (31 tasks, 31 attributes, 6 evaluations each)

Choice tasks	Online store attributes					
	Attribute 1	Attribute 2	Attribute 3	Attribute 4	Attribute 5	Attribute 6
Task 1	5	6	11	24	25	12
Task 2	28	2	31	20	11	1
Task 3	8	7	24	20	27	9
Task 4	5	22	30	20	10	29
Task 5	3	31	24	26	29	28
Task 6	27	12	14	29	11	16
Task 7	10	1	9	12	23	3
Task 8	24	30	14	17	28	23
Task 9	18	29	8	23	2	6
Task 10	18	30	7	15	31	12
Task 11	17	31	22	10	25	27
Task 12	9	5	18	28	27	4
Task 13	25	18	14	3	13	20
Task 14	20	21	6	9	17	15
Task 15	19	6	27	30	21	3
Task 16	6	22	7	1	26	14
Task 17	30	13	8	4	17	1
Task 18	23	11	29	13	21	7
Task 19	10	11	19	18	17	26
Task 20	27	23	5	13	26	15

Task 21	12	21	4	7	25	26
Task 22	3	7	17	16	2	5
Task 23	15	14	10	2	4	24
Task 24	20	16	23	31	4	19
Task 25	11	3	15	22	4	8
Task 26	1	28	15	25	29	19
Task 27	14	21	31	19	5	8
Task 28	6	10	16	8	28	13
Task 29	2	9	13	12	22	19
Task 30	21	22	1	18	24	16
Task 31	9	2	26	30	25	16

Moreover, in each choice task, respondents are asked to choose the “best” (e.g., “most important” or “most useful”) and the “worst” items (e.g., “least important” or “least useful”). Table 4-4 shows an example of the choice tasks, where respondents are asked to answer, “Of the following five attributes, which is the most important and the least important to you when choosing an unfamiliar store to purchase products on Taobao?” The questionnaires are presented in Appendix C1 and Appendix C2.

Table 4-4. An example of the Best-Worst scaling choice tasks

Store attributes and attribute statements	Most important	Least important
Store decoration (Webpage layout, store style, brand image display, etc.)		
Customer reviews (Various comments about the product or store by customers who have made purchases.)		
Sales volume (Cumulative sales within the last 30 days.)		
Number of fans (The number of people who have bookmarked or favorited this store.)		
Professionalism of customer service (Able to provide correct answers to customer inquiries.)		

The Best-worst score for each attribute is simply calculated by the frequency of “most important” minus the frequency of “least important”. As each online store attribute appears in five choice tasks in online survey 1, there are five opportunities to be selected as “most important” and five opportunities to be selected as “least important” 1. As a result, the best-worst scores of 21 pre-purchase attributes range from +5 to −5. In contrast, as each online store attribute appears in six choice tasks in online survey 2, there are six opportunities to be selected as “most important” and six opportunities to be selected as “least important”. As a result, the best-worst scores of 31 pre-purchase and post purchase

attributes range from +6 to −6.

4.3.3 Pilot testing and data collection

A pilot test with an online convenience sample of 10 participants was conducted to check the clarity and accuracy of the wording of the preliminary questionnaire. After receiving feedback from the pilot test, the questionnaire was revised for the final data collection. The respondents participating in the pilot test were not included in the final sample.

Human Research Ethics Approval (H8827) was obtained from the authors' university for the online survey. This chapter employed a non-probabilistic purposive sampling strategy by targeting Chinese adults who have online shopping experiences on Taobao. Adult participants were recruited through Credamo (www.credamo.com) for a nominal fee. Credamo has over 1.5 million registered panel members with a diverse sociodemographic range and provides researchers with multiple data-filtering measures to recruit eligible respondents (Tong *et al.*, 2022). To ensure data quality, this thesis requires respondents to have answered at least 30 questionnaires on Credamo and have an acceptance rate of at least 80%. Questionnaires with incomplete information cannot be submitted on Credamo. Moreover, to avoid the problems associated with mischievous responders, which refers to responders who deliberately falsify information (Ward and Pond III, 2015), surveys were checked for random reporting and fake responses by analyzing average duration time.

The online survey 1 was conducted from March 30th to April 2nd, 2024, totalling 500 responses. After removing the invalid responses, 432 (86.4%) usable responses were obtained. Appendix B1 reports the demographic and behavioral information of the first online survey participants. The online survey 2 was conducted from April 20 to 22, 2024, totalling 483 responses. After removing the invalid responses, 406 (80.0%) usable responses were obtained. Appendix B2 reports the demographic and behavioral information of the second online survey participants.

4.3.4 Data analysis

K-means clustering is a simple and widely used algorithm which divides a set of data into K groups represented by their mean values (Yadav and Sharma, 2013). After K cluster centers (centroids) are randomly initialized, each example is assigned to the nearest cluster. It iterates until it converges to a

locally optimal partition of the data. For each iteration, each example is assigned to the closest cluster center, which will be recalculated based on the mean value of all examples of that particular cluster.

K-means clustering is widely used in research on customer segmentation in retail contexts (e.g., Kumar, 2023; Tabianan *et al.*, 2022). This methodology is considered suitable for this chapter due to the following two reasons. First, the clusters produced by K-means clustering are often easily interpretable and provide clear insights into the data structure. This is because K-means clustering typically uses the Euclidean metric for computing the distance between points and cluster centers, so it finds spherical or ball-shaped clusters in data (Jain, 2010). Second, K-means clustering allows users to predefine the number of clusters (Slamet *et al.*, 2016), enabling the algorithm to accommodate different customer segmentation needs. Since this chapter aims to explore whether there are customer segments that prioritize different categories of attributes and the customer characteristics of these segments, it is appropriate to predefine the number of clusters based on the number of attribute categories identified from the thematic analysis.

4.4 Findings

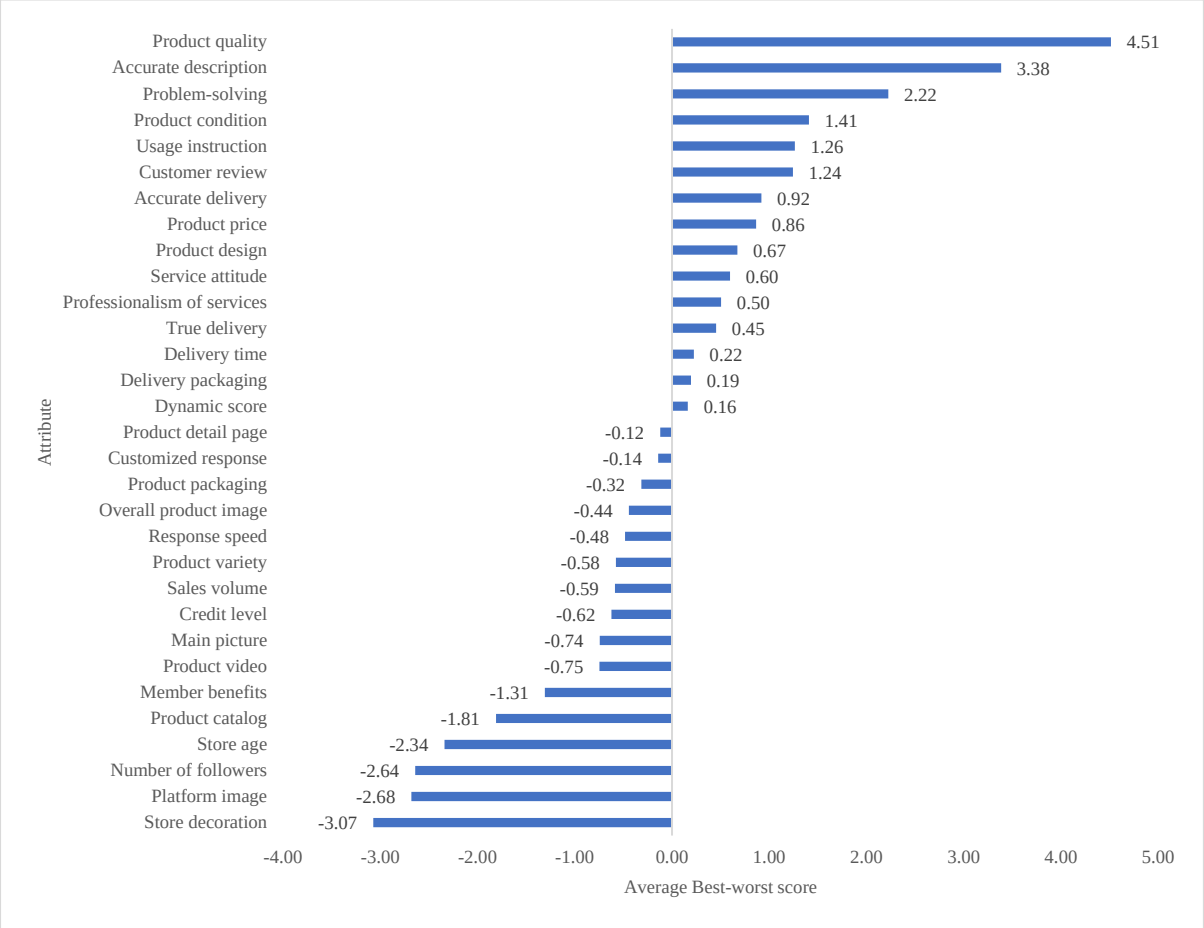
4.4.1 Customers' prioritization of various attributes

4.4.1.1 Comparing customers' prioritization of 31 attributes across pre-purchase and post-purchase stages

Firstly, this chapter compares all 31 attributes valued by customers throughout the entire online purchase journey, including both pre-purchase and post-purchase attributes. The results are shown in Figure 4-1. Among the 15 attributes rated as relatively important (positive average Best-worst score), 8 are exclusive to the post-purchase stage, 5 are present in both the pre-purchase and post-purchase stages, and only 2 are exclusive to the pre-purchase stage. In contrast, among the 16 attributes rated as relatively unimportant (negative average Best-worst score), 12 are exclusive to the pre-purchase stage, 2 are present in both the pre-purchase and post-purchase stages, and 2 are exclusive to the post-purchase stage. This indicates that post-purchase attributes are significantly more important than pre-purchase attributes once customers have completed their online shopping, demonstrating the necessity of distinguishing between the pre-purchase and post-purchase stages when researching customers'

prioritization of online store attributes.

Figure 4-1. The relative importance ranking of 31 online store attributes across pre-purchase and post-purchase stages



4.4.1.2 Comparing customers' prioritization of 21 pre-purchase attributes

As shown in Figure 4-2 and 4-3, the two most important categories of pre-purchase attributes are extrinsic and intrinsic product attributes, indicating that customers are more concerned with products than with stores. In contrast, at the store level, only the service attribute category is considered relatively important.

Figure 4-2. The relative importance ranking of 21 pre-purchase online store attributes

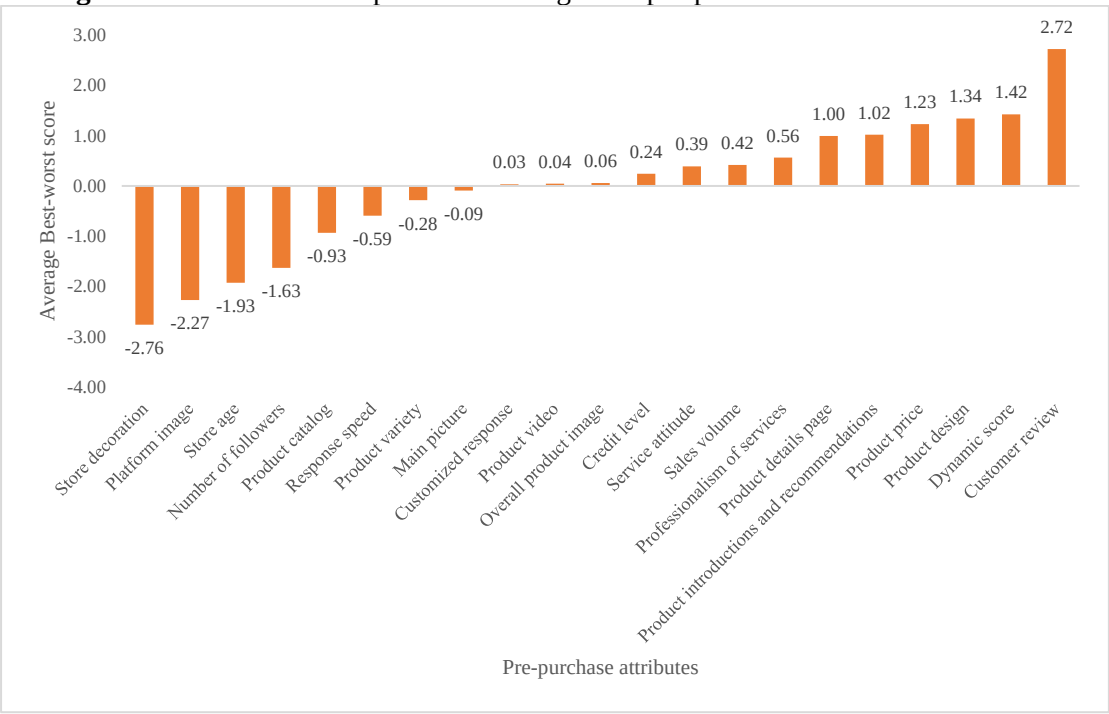
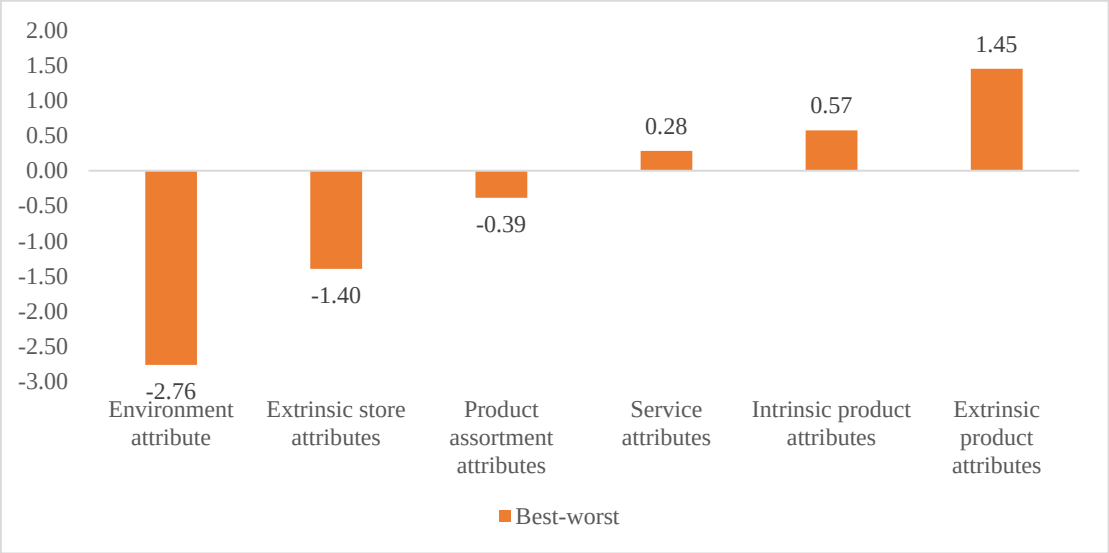


Figure 4-3. The relative importance ranking of six pre-purchase attribute categories



Product level

Extrinsic product attributes. Customers prioritize extrinsic product attributes the most. Specifically, as shown in Figure 4-2, customer review (2.72), dynamic score (1.42), price (1.23) and sales volume (0.42) are respectively ranked first, second, fourth and eighth among 21 pre-purchase attributes, with customer review being significantly more important than others. This may be due to the limitations of online shopping, where customers cannot physically touch the actual products and must rely solely on product information such as images, text, videos, etc. (Chen *et al.*, 2024), which is not sufficient for

making an evaluation on product quality. Therefore, they rely more on extrinsic product attributes. In particular, customer reviews, as user-generated content, significantly reduce customers' perception of risk and thus affect their purchase decisions (Li *et al.*, 2021).

Intrinsic product attributes. Customers place great emphasis on intrinsic product attributes, second to extrinsic product attributes, with product design (1.34) and product detail page (1.00) ranking 3rd and 6th, respectively.

Store level

Environment attributes. The least important attribute is store decoration. This is because platform-based online stores are constrained by the fixed templates provided by the online retail platform, so they have limited flexibility in store decoration. In contrast, standalone online stores have freedom in this regard (Omikron, 2021).

Extrinsic store attributes. While customers place the greatest importance on extrinsic product attributes, they perceive extrinsic store attributes as relatively unimportant, as shown in Figure 4-3. Specifically, three of the five least important attributes fall under this attribute category, with platform image (-2.27), store age (-1.93) and number of followers (-1.63) respectively ranking 20^{h}, 19th and 18th. The only extrinsic store attribute with positive score is credit level (0.24), ranking 10th. This could be attributed to the improved guarantee system of Taobao, such as a seven-day free return and exchange policy, which reduces the risks in online shopping (Ma *et al.*, 2023). As S11 stated "*If the expected product is significantly different from the actual product received, the customer can always request a return and refund*". Consequently, customers pay minimal attention to extrinsic attributes of an online store that represent its credibility and reliability.

Product assortment attributes. As one dimension of intrinsic store attributes, product assortment attributes are considered relatively unimportant, with only "overall product image" (0.06) showing a positive score. This is mainly because customers compare and select products across a variety of stores on the entire online retail platform rather than being limited to a specific store. Typically, they enter a store only after being interested in a specific product presented on the online retail platform's search results page.

Service attributes. Service attributes are the only store-level attribute category considered relatively important. Specifically, usage instruction (1.02), professionalism of services (0.56), service attitude (0.39) and customized service (0.03) demonstrate positive scores, while response speed (-0.59) is considered relatively unimportant. This may be because the information on the product detail page is insufficient or customers do not have enough knowledge of the product, so they need service employees to introduce or recommend it.

4.4.1.3 Comparing customers' prioritization of 16 post-purchase attributes

Different from the findings by Roy Dholakia and Zhao (2010), who revealed that product delivery (on-time delivery) is the most important attribute affecting customer satisfaction during the post-purchase stage, followed sequentially by customer service (customer support) and product attribute (product meets expectations), this thesis found that customers value the product itself the most, followed sequentially by customer service and product delivery, as shown in Figure 4-4 and 4-5.

Figure 4-4. The relative importance ranking of 16 post-purchase online store attributes

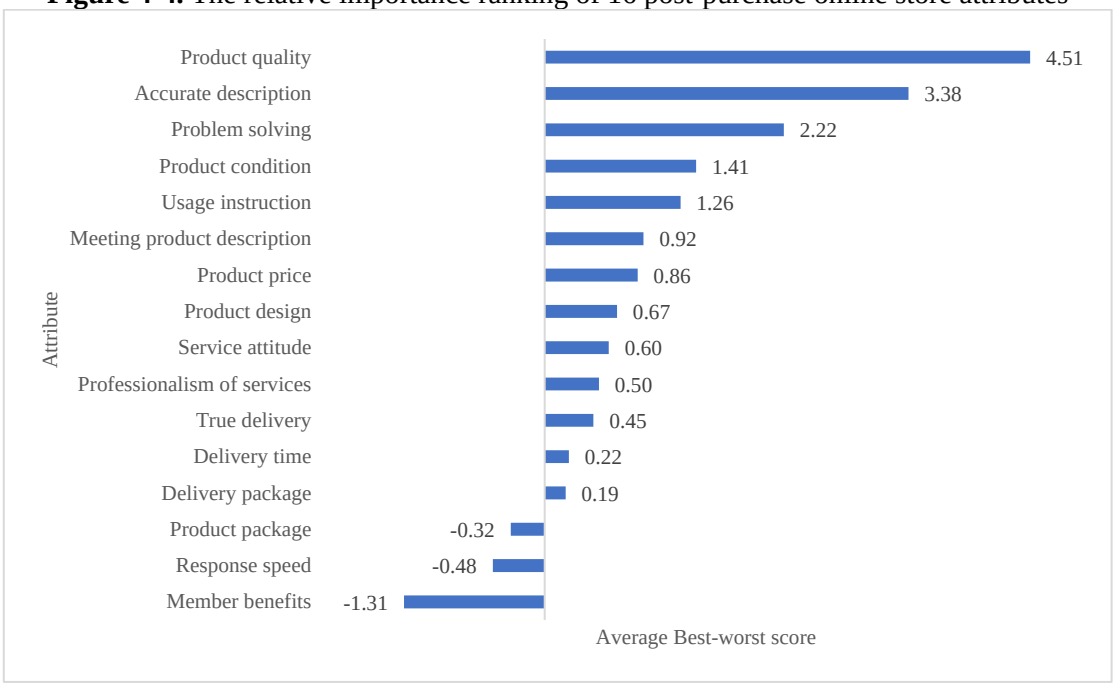
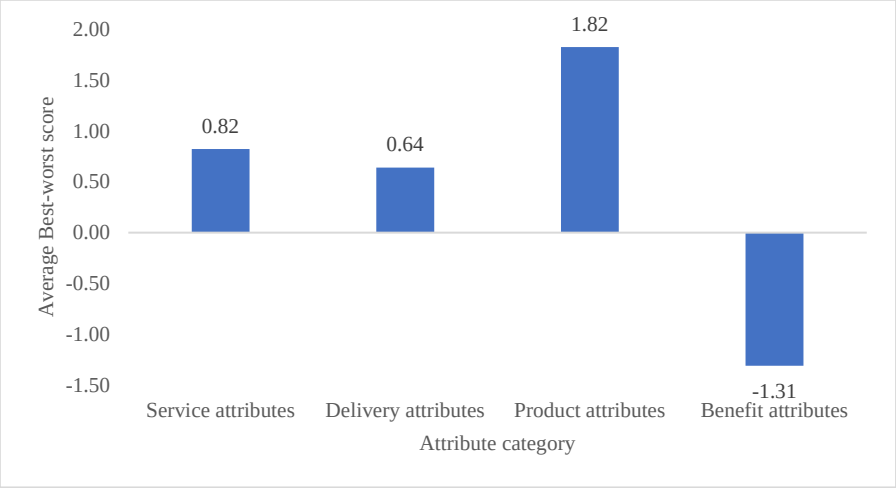


Figure 4-5. The relative importance ranking of four post-purchase attribute categories



Product attributes. Product quality (4.51) and meeting product description (3.38) rank as the top two most important, as shown in Figure 4-4. This finding aligns with Yin & Xu (2021), who unveil that product quality had the strongest effect on customers' product experience. This is primarily because the purpose of online shopping is to buy products, while services and logistics assist in their purchase, as C11 stated "*A good product will definitely leave a positive impression of the store; Everything else is superficial, while having a good product is what truly matters*".

Customer *service*. Problem solving (2.22) and usage instruction (1.26) rank 3rd and 5th, as shown in Figure 4-4. This finding aligns with Yin & Xu (2021), who reveal that product return and exchange processes had the strongest effect on customers' service experience. This is because customers require service support when they are unfamiliar with product usage, dissatisfied with the product or encounter quality issues, as C1 stated "*If the item arrives and disappoints me, then I will contact service employees for a return*".

Product delivery. The top two most important delivery attributes are product condition (ranked 4th at 1.41) and accurate delivery (ranked 6th at 0.92), as shown in Figure 4-4. This differs from the findings by Rita et al. (2019), who found that the most significant contributor to customers' experience of product delivery is accurate delivery, followed by delivery time, and then product condition. This may be because, in most cases, logistics are not currently problematic. On the one hand, because online shopping has been developed in China for many years, retailers have a lot of experience in ensuring accurate delivery. On the other hand, due to the high development level of China's courier industry,

products are generally delivered within the expected timeframe. However, the damage to the product during delivery is out of the control of the online store, because the logistics company is a third party. Moreover, although the damaged products can be returned or exchanged, it also increases the time cost of online shopping, so product condition becomes the most important concern of customers in terms of product delivery.

It is noteworthy that the two most important attributes in the categories of customer service and product delivery are all related to the product itself. Specifically, problem solving involves addressing unsatisfactory products, usage instruction pertains to how the product is used, accurate delivery ensures the purchased product is correctly received and product condition concerns whether the received product is damaged. This further proves that during the post-purchase stage, what they care most about is whether they received the product they wanted.

4.4.2 Customer segments

4.4.2.1 Pre-purchase customer segments

(1) Three distinct pre-purchase customer segments

Our thematic analysis identified 21 pre-purchase attributes, which fall into 6 categories, so this thesis attempted to cluster these respondents into 3-6 groups using K-means clustering. Comparing the results, clustering into three groups was the most ideal because each of these three groups clearly emphasized a specific attribute category, as shown in Table 4-5 and elaborated below.

Table 4-5. Average Best-worst scores of 21 online store attributes across three pre-purchase customer segments

Attribute ranking		Service-prioritized segment (n=133)		Intrinsic product attributes-prioritized segment (n=153)		Cluster 3: Extrinsic product attributes-prioritized segment (n=146)	
1		Customer review	3.11	Product design	2.59	Customer review	2.74
2		Professionalism of services	1.86	Customer review	2.37	Dynamic score	2.14
3		Customized response	1.71	Product detail page	2.20	Credit level	1.80
4		Dynamic score	1.68	Product introductions and recommendations	1.86	Sales volume	1.77
5		Product introductions and recommendations	1.42	Product price	1.70	Product price	1.66
6		Service attitude	1.38	Product video	1.13	Product design	0.66
7		Product design	0.65	Main picture	1.13	Service attitude	0.12
8		Product detail page	0.58	Overall product image	0.58	Product detail page	0.11
9		Product price	0.22	Dynamic score	0.52	Professionalism of services	-0.01
10		Response speed	0.14	Product variety	0.35	Overall product image	-0.20
11		Credit level	0.09	Professionalism of services	-0.01	Product introductions and recommendations	-0.23
12		Sales volume	-0.24	Service attitude	-0.21	Number of followers	-0.42
13		Overall product image	-0.26	Sales volume	-0.30	Customized response	-0.57
14		Product video	-0.27	Product catalog	-0.75	Main picture	-0.71
15		Product variety	-0.33	Customized response	-0.86	Product video	-0.81
16		Product catalog	-0.62	Response speed	-0.99	Response speed	-0.84
17		Main picture	-0.83	Credit level	-1.11	Product variety	-0.90
18		Store age	-2.09	Number of followers	-2.09	Store age	-1.08
19		Number of followers	-2.42	Store age	-2.59	Platform image	-1.16
20		Platform image	-2.86	Store decoration	-2.71	Product catalog	-1.40
21		Store decoration	-2.91	Platform image	-2.81	Store decoration	-2.67
Sum of Best-worst scores	All positive attributes		12.83		14.43		11.01
	Prioritized attributes		6.50		7.06		8.32
Degree of priority			50.70		48.91		75.54

Extrinsic-product-attributes-prioritized segment. This segment places the majority of its priority on extrinsic product attributes, with customer review, dynamic score, sales volume and price having average Best-worst scores of 2.74, 2.14, 1.77 and 1.66. These attributes rank 1st, 2nd, 4th, and 5th and collectively account for 75.5% of the accumulative positive average Best-Worst score of this segment (11.01).

Intrinsic-product-attributes-prioritized cluster. This segment prioritizes intrinsic product attributes, with the average Best-worst scores of product design (2.59), product detail page (2.20), product video (1.13) and main picture (1.13) accounting for 48.9% of the accumulative positive average Best-worst score of this segment (14.43). It is worth noting that this segment stands out as the only one placing an emphasis on product assortment attributes, with overall product image and product variety having positive average Best-Worst scores of 0.58 and 0.35 respectively. Additionally, product introductions and recommendations has a significantly higher positive average Best-Worst score in this segment, which may be attributed to its ability to provide information that is unavailable or unclear from product detail pages and videos.

Service-attributes-prioritized cluster. This segment prioritizes service-related attributes, with professionalism of services (1.86), customized services (1.71), product introduction and recommendation (1.42), service attitude (1.38) and response speed (1.41) accounting for 50.7% of the sum of the positive average Best-worst scores of this cluster (12.83). Notably, the average Best-Worst scores of four service-related attributes in the other two clusters are negative.

(2) Demographic differences across three pre-purchase customer segments

ANOVA tests were conducted on the demographic characteristics of these three pre-purchase customer segments, revealing significant differences in terms of age, gender, education level and income, as shown in Table 4-6. The demographic characteristics across three pre-purchase customer segments are presented in Table 4-7.

Table 4-6. One-way ANOVA on demographic characteristics of three pre-purchase segments

		Sum of squares	df	Mean Square	F	Sig.
Gender	Between group	3.007	2	1.504	6.304	0.002
	Within group	102.317	429	0.239		
	Total	105.324	431			
Age	Between group	13.876	2	6.938	5.241	0.006
	Within group	567.865	429	1.324		
	Total	581.741	431			
Education level	Between group	9.500	2	4.750	7.355	0.001
	Within group	277.054	429	0.646		
	Total	286.553	431			
Income	Between group	13.770	2	6.885	7.675	0.001
	Within group	384.859	429	0.897		
	Total	398.630	431			

Table 4-7. Demographic characteristics of three pre-purchase segments

Demographics	Group	Customer segments under BWS					
		Service attributes prioritized	Intrinsic Product attributes prioritized	Extrinsic Product attributes prioritized	Service attributes prioritized	Intrinsic product attributes prioritized	Extrinsic product attributes prioritized
		Number			Percentage (%)		
Age	18-25	18	35	23	13.5	22.9	15.8
	26-35	50	50	42	37.6	32.7	28.8
	36-45	45	38	35	33.8	24.8	24.0
	46-55	13	25	24	9.8	16.3	16.4
	56 -65	7	5	22	5.3	3.3	15.1
	66 and above	0	0	0	0.0	0.0	0.0
Gender	Male	57	49	76	42.9	32.0	52.1
	Female	76	104	70	57.1	68.0	47.9
Income	0-1,999	4	11	13	3.0	7.2	8.9
	2,000-4,999	14	28	13	10.5	18.3	8.9
	5,000-9,999	52	60	78	39.1	39.2	53.4
	10,000-19,999	46	49	37	34.6	32.0	25.3
	20,000-49,999	16	5	5	12.0	3.3	3.4
	50,000 and above	1	0	0	0.8	0.0	0.0
Education level	Junior high school and below	0	2	0	0.0	1.3	0.0
	Senior high school and vocational high school	8	6	27	6.0	3.9	18.5
	Associate degree	16	21	18	12.0	13.7	12.3
	Undergraduate degree	87	97	86	65.4	63.4	58.9
	Graduate degree	22	27	15	16.5	17.6	10.3

Extrinsic-product-attributes-prioritized vs intrinsic-product-attributes-prioritized segments. Firstly, the extrinsic-product-attributes-prioritized segment has more individuals over the age of 55 (n=22, 3.3%) than intrinsic-product-attributes-prioritized segment (n=5, 15.1%). This is primarily because older individuals tend to invest less cognitive effort in searching for product information compared to younger individuals due to age-related changes in information processing ability (Cole & Balasubramanian, 1993), so they are more likely to utilize extrinsic product attributes, which are usually easier to evaluate and compare products. Second, extrinsic-product-attributes-prioritized segment has more male individuals (n=76, 52.1%) than intrinsic-product-attributes-prioritized segment (n=49, 32.0%). This is because men are more task-oriented in online shopping compared to women (Hansen and Møller Jensen, 2009), so they are more likely to utilize extrinsic product attributes to facilitate their purchase decision. Third, the extrinsic-product-attributes-prioritized segment has more individuals with moderate monthly income between 5,000-9,999 Yuan (n=78, 53.4%) than intrinsic-product-attributes-prioritized segment (n=60, 39.2%). Individuals with moderate incomes can afford to purchase products but still seek value for money. Therefore, they evaluate product quality through extrinsic product attributes while considering the monetary sacrifice to balance performance and financial risks (Agarwal and Teas, 2001). Finally, the extrinsic-product-attributes-prioritized segment has more individuals with below associate degree (n=27, vs 5.2%) than intrinsic-product-attributes-prioritized segment (n=8, 18.5%). This is because individuals with lower education levels may have less knowledge about products, which further leads them to process less product information when choosing between different products (Chocarro *et al.*, 2009), thereby relying more on extrinsic product attributes.

Service-attributes-prioritized vs product-attributes-prioritized segments. First, this segment has more individuals within the age range of 26 to 45 than the other two segments. This is because middle-aged individuals (26-45) often have greater responsibilities at work and in their personal or family lives, so they prioritize high-quality services to minimize potential problems during shopping and to enhance the effectiveness and efficiency of post-purchase problem resolution. Second, this segment has more individuals with high monthly income over 10, 000 Yuan than other two segments. This may be because they are more affordable and willing to pay for premium services to enhance their overall shopping

experiences.

4.4.2.2 Post-purchase customer segments

Our thematic analysis identified 16 post-purchase attributes, which fall into 4 attribute categories, so this thesis attempted to cluster these respondents into 2, 3, and 4 groups using K-means clustering. Comparing the results, clustering into three groups was the most ideal because each of these three groups clearly emphasized a specific attribute category, as shown in Figure 4-6 and Figure 4-7. Additionally, this thesis conducted one-way ANOVA to compare demographic and behavioral customer characteristics across the three segments. The results are presented in Table 4-8, showing significant differences only in income, online shopping expenditure and online shopping frequency. Therefore, this thesis further summarized the customer characteristics of these three segments in Table 4-9 for comparison.

Figure 4-6. The relative importance ranking of 16 post-purchase attributes across three post-purchase segments

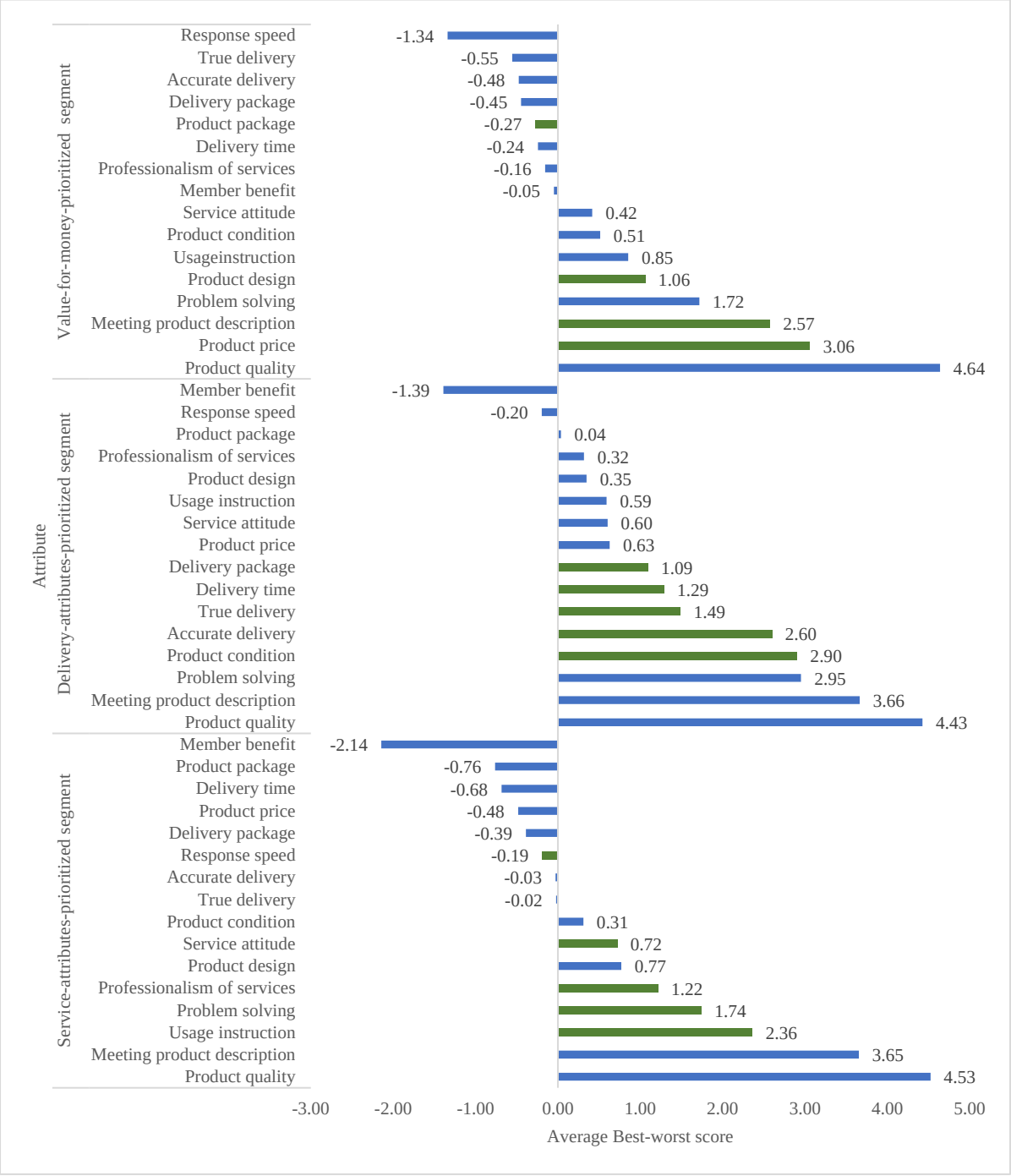


Figure 4-7. The relative importance ranking of four post-purchase attribute categories across three post-purchase segments

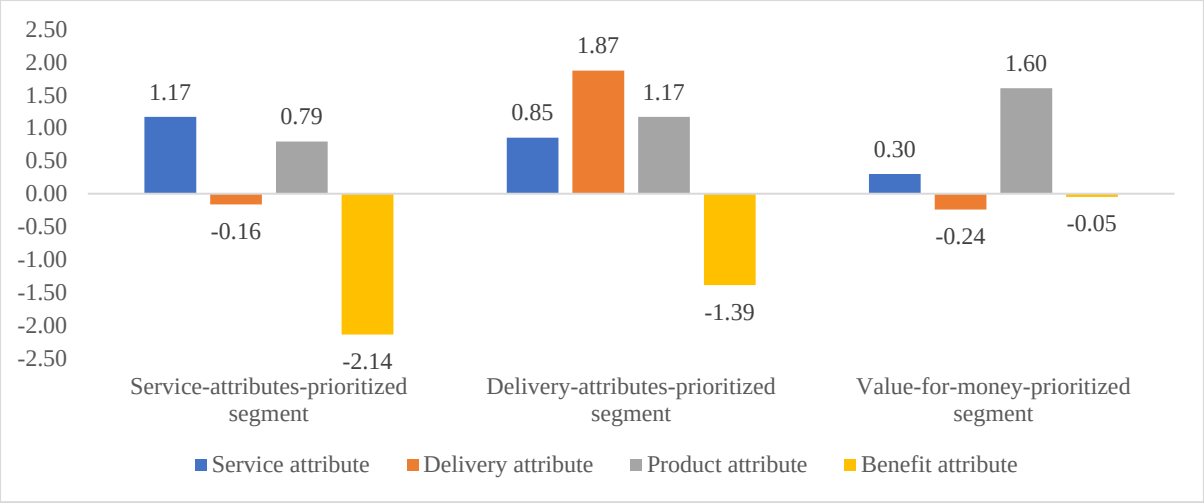


Table 4-8. One-way ANOVA on demographic characteristics of three post-purchase segments

		Sum of squares	df	Mean Square	F	Sig.
Frequency	Within group	10.219	2	5.109	8.283	0.000
	Between group	248.589	403	0.617		
	Total	258.808	405			
Expenditure	Within group	16.034	2	8.017	5.523	0.004
	Between group	584.980	403	1.452		
	Total	601.015	405			
Gender	Within group	0.676	2	0.338	1.351	0.260
	Between group	100.814	403	0.250		
	Total	101.490	405			
Age	Within group	0.871	2	0.436	0.301	0.740
	Between group	583.178	403	1.447		
	Total	584.049	405			
Diploma	Within group	2.969	2	1.485	2.270	0.105
	Between group	263.624	403	0.654		
	Total	266.594	405			
Income	Within group	11.214	2	5.607	5.378	0.005
	Between group	420.126	403	1.042		

	Total	431.340	405

Table 4-9. Demographic characteristics of different customer segments

Customer characteristics	Group	Service -prioritized segment		Product-delivery -prioritized segment		Value-for-money -prioritized segment	
		Number	Percentage	Number	Percentage	Number	Percentage
Frequency	Less than 1 time per month	1	0.7	3	1.8	5	4.9
	1-3 times per month	30	21.6	60	36.6	32	31.1
	1-2 times per week	58	41.7	65	39.6	48	46.6
	More than 2 times per week	50	36.0	36	22.0	18	17.5
Expenditure	1-199	8	5.8	20	12.2	8	7.8
	200-499	35	25.2	45	27.4	36	35.0
	500-999	29	20.9	46	28.0	30	29.1
	1,000-1,999	41	29.5	39	23.8	16	15.5
	2,000-4,999	24	17.3	14	8.5	11	10.7
	5,000-9,999	1	0.7	0	0.0	1	1.0
	Above 10,000	1	0.7	0	0.0	1	1.0
Income	1-1,999	7	5.0	13	7.9	6	5.8
	2,000-4,999	18	12.9	35	21.3	22	21.4
	5,000-9,999	53	38.1	57	34.8	51	49.5
	10,000-19,999	44	31.7	47	28.7	23	22.3
	20,000-49,999	16	11.5	8	4.9	1	1.0
	50,000 and above	1	0.7	4	2.4	0	0.0

(1) Value-for-money-prioritized segment

Apart from product quality, which is the most valued attribute for each segment and shows similar scores across the three segments, ranging from 4.43 to 4.64, this segment prioritizes product price (3.06) most. Moreover, unlike the other two segments, which place the least emphasis on member benefit (-1.39 and -2.14), this segment places much more emphasis on member benefit, with an average Best-Worst score of -0.05, ranking 9th. This also indicates that this segment is very price sensitive. Additionally, this segment places significantly less importance on meeting product description, with an average Best-Worst score of 2.57, which is much lower than the scores of 3.65 and 3.66 for the other

two segments. This may be because this segment prioritizes value for money, so they can accept a certain degree of discrepancy between the actual product received and its description on the product detail page.

In terms of customer characteristics, this segment has more individuals with moderate income levels (5000-9999 Yuan), monthly expenditures on online shopping (200-999 Yuan) and online shopping frequency (1-2 times per week) compared to the other two segments, as shown in Table 3. This may be because these customers can afford online shopping, but they still need to keep it within their budget, so they highly prioritize value for money.

(2) Delivery-attributes-prioritized segment

For this segment, five delivery attributes rank from 4th to 8th, with the average Best-Worst scores ranging from 1.09 (delivery package) to 2.90 (product condition). It is worth noting that for the other two segments, the average Best-Worst scores for the delivery attributes are negative. This differs from the findings by Ma *et al.* (2022), who concluded that product delivery has no impact on customer satisfaction with online shopping. Instead, this thesis confirms that a portion of customers prioritize product delivery service the most.

In terms of customer characteristics, this segment has more individuals with relatively lower income levels (0-1,999 Yuan), monthly expenditures on online shopping (1-199 Yuan) and online shopping frequency (1-3 times per month) compared to the other two segments, as shown in Table 3. In our survey, 92.3% of respondents with this income level are college students. They prioritize product delivery maybe because they shop online less frequently, so they tend to have high expectations for the products they purchase and hope to receive them without damage as soon as possible.

(3) Service-attributes-prioritized segment

The five service attributes rank 3rd, 4th, 5th, 7th, and 11th for this segment, with only the average Best-Worst score for response speed being negative (-0.19). Moreover, unlike the other two segments, which prioritize problem-solving more than the other four service attributes, this segment prioritizes usage instruction the most. This may indicate that this segment prefers to acquire product knowledge not through deep research of product detail pages or videos themselves, but rather by consulting service

employees, thus prioritizing service attributes far more than other attributes.

In terms of customer characteristics, this segment has more individuals with higher income levels (above 10,000 Yuan), monthly expenditures on online shopping (1000-4,999 Yuan) and online shopping frequency (more than 2 times per week) compared to the other two segments. This indicates that this customer segment has relatively high income and monthly online shopping expenditure, so they seek better service quality to enhance their shopping experience.

4.5 Discussion

4.5.1 Interpretation of findings

Firstly, this chapter found that post-purchase attributes are significantly more important than pre-purchase attributes once customers have completed their online shopping. This aligns with the findings from previous studies, which show that pre-purchase online store attributes, such as product variety, product information, website aesthetics and ease of use, have limited effect on customer loyalty (Otim and Grover, 2006; Roy Dholakia and Zhao, 2010). However, this does not mean that pre-purchase attributes are unimportant, as they determine whether customers will place an order. Notably, due to the very low loyalty of customers to online stores, even if they are largely satisfied (Balabanis *et al.*, 2006), the majority of customers that online stores receive each day are new. Therefore, retailers must double down on retaining their existing customers while attracting new ones from their less customer-conscious competitors (Peshev, 2023).

Second, this chapter found that customers prioritize attributes at the product level far more than those at the store level during the pre-purchase stage, regardless of whether the product attributes are intrinsic or extrinsic. This is very different from the findings from stand-alone online stores, which show that the online store image is primarily shaped by store-level attributes such as product assortment, store environment and customer service (Chen *et al.*, 2024), and less influenced by individual product attributes, especially extrinsic ones. Such contrasting results may be attributed to consumers perceiving the online retail platform as a large store, with each individual platform-based store functioning as a subsection that contributes to the overall product variety. Each platform-based store must also adhere to the online platform’s protocols for providing basic services and using templates to decorate their

store environment, limiting their discretion in shaping their store image compared to stand-alone online stores. Therefore, it is essential to reinvestigate the pre-purchase image of platform-based online stores and develop a measurement scale tailored to them.

4.5.2 Theoretical contribution

This chapter is the first study that explores customers' prioritization of various pre-purchase and post-purchase attributes of platform-based online stores. The findings could provide valuable references for further developing scales that are more suitable for variables measuring pre-purchase and post-purchase brand image of platform-based online stores. For example, in the study by Kumar and Anjaly (2017), product delivery is measured by items associated with order tracking, flexible delivery dates, doorstep delivery, etc., which do not cover the five product delivery attributes identified in this chapter. This may be because some issues that previously mattered to customers are no longer concerns due to the development of the courier industry, but they now have new demands.

4.5.3 Practical contribution

First, online retailers need to leverage their strengths and allocate resources to optimize certain store attributes. For example, in terms of customer service, customers place the most emphasis on "problem solving", i.e., returns, exchanges, refunds and resends. Retailers can simplify processes for handling these issues and provide more professional training for service employees to enhance the efficiency of problem-solving. Secondly, online retailers' store branding strategies need to align with customer characteristics due to variations among customer segments. For example, customers of a clothing store may be more concerned about intrinsic attributes such as product design, product detail pages and product videos. On the other hand, customers shopping for daily necessities, due to the high similarity among products, may pay more attention to extrinsic attributes like price, sales volume and customer reviews.

4.5.4 Limitations and future research directions

While this chapter offers significant contributions, it does have some limitations. First, this chapter focuses on Chinese Taobao stores as the research object. Future research could use the findings from this chapter as a reference to explore customers' prioritization of various attributes of stores operating

on other types of retail platforms, such as the live-streaming e-commerce platform TikTok. Second, this chapter merely analyzed the differences between several customer segments based on demographic characteristics. Future research could explore the impact of customers' psychological features, such as recreation-oriented and task-oriented shopping motivations, on the importance customers place on various store attributes. In addition, the distinct customer segments that exist during the pre-purchase and post-purchase stages are identified from participants in two online surveys, which limits their generalizability. Future research can focus on a specific customer segment, increase the sample size, and conduct a more in-depth study. Third, this chapter employs the Best-Worst Scaling approach, which amplifies differences in importance between various attributes by making trade-offs between them (Pascoe *et al.,* 2017). Future research could complement this method by using Likert scaling, which captures the nuances of complex attitude structures through multiple response options (Willits *et al.*, 2016).

Chapter 5: Varying effects of chatbot service quality dimensions on customers' service choices

Chapter overview. This chapter aims to examine the varying effects of various chatbot service quality dimensions on customers' service choices and the mediating role of perceived shopping enjoyment. First, it elaborates on the dimensions of chatbot service quality used in this chapter based on a review of relevant literature, followed by the development of relevant hypotheses. It then introduces the questionnaire design, data collection and validity testing of the variables. Next, it uses paired-sample t-tests and PLS-SEM to analyze the data and report the findings. Finally, it concludes with a discussion of the results.

5.1 Introduction

Academically, the increase in chatbot usage and its associated pros and cons have sparked great interest among scholars since 2017 (Rapp *et al.*, 2021). The early empirical literature generally compared human–chatbots and human–human conversations (Ashfaq *et al*., 2020). More recently, scholars have focused on the factors influencing consumers' perceptions, attitudes and behaviors toward chatbots (e.g., Ling *et al*., 2021; Tsai *et al.*, 2021). To make such assessments, studies have primarily utilized the Technology Acceptance Model (TAM) (e.g., Ashfaq *et al*., 2020; Rese *et al*., 2020) and the Unified Theory of Acceptance and Use of Technology (UTAUT) (e.g., Forgas-Coll *et al.*, 2022; Silva *et al.*, 2022). Although these studies have established a greater understanding of chatbots as technological tools, they overlooked the social presence of chatbots as service employees.

In the context of online shopping, chatbots are usually designed with anthropomorphic features, such as visual cues (e.g., human figures), identity cues (e.g., human names) and conversational cues (mimicking human languages) (Go and Sundar, 2019). According to social response theory (Nass and Moon, 2000), when customers interact with an anthropomorphic designed computer, they perceive a sense of social presence (Adam *et al*., 2021), which refers to "the feeling of being with another person" (Biocca *et al*., 2003, p. 9). Correspondingly, chatbots are perceived as service employees rather than just technological tools (Ruan and Mezei, 2022). Therefore, when customers experience a chatbot

service failure, they do not see it as a technical issue but rather a service quality problem. Therefore, it is necessary to integrate service quality theories to explore customer attitudes and their reactions toward the services provided by chatbots.

However, at present, there is a noticeable scarcity of literature on the quality of chatbot services, with significant deficiencies existing in the following two aspects. First, "the conception of chatbot service quality and the related evaluation instruments are still unclear" (Chen *et al.*, 2022, p. 522). Among the limited studies on chatbot service quality, the SERVQUAL model stands out as the most widely used theoretical framework. Notably, a few academics have used different modifications of the SERVQUAL model to examine chatbot service quality. For example, Meyer-Waarden *et al*. (2020) replaced "assurance" with "competence" and "credibility", while Kharub *et al*. (2021) and Yun and Park (2022) removed "tangibles" but included "entertainment" and "interactivity", respectively. Integrating the valuable insights of these scholars to identify the most appropriate dimensions for assessing chatbot service quality in the context of online shopping, and further investigating their varying effects on customers' service choices can advance research in this field.

Second, the impact of perceived shopping enjoyment on the relationships between various chatbot service quality dimensions and customers' service choices has not been explored. The majority of existing chatbot studies utilize customer attitudes toward chatbots, such as satisfaction (e.g., Pereira *et al*., 2021; Li *et al*., 2021) and trust (e.g., Pitardi and Marriott, 2021; Fu *et al.*, 2023), as mediators linking customers' experiences of using chatbots to their intentions to reuse them. However, they overlook the influence of customers' perception of enjoyment derived from online shopping served by chatbots on their intention to choose chatbots. Previous literature has demonstrated that perceived shopping enjoyment, which refers to the extent to which the shopping experience within a store is perceived to be enjoyable independently from any performance outcomes (Cai and Xu, 2006), mediates the influence of customers' use of technologies, such as web forms of interactive media (Childers *et al*.,2001) and image interactive technology (Lee *et al*., 2010), on their attitudes towards these technologies. Therefore, in the case of the chatbot service provided by online stores, its impact on the shopping experience is expected to extend beyond utilitarian aspects, influencing their perception of shopping enjoyment, and

subsequently shaping their attitudes toward the chatbot service. However, no study has specifically examined the mediating role of perceived shopping enjoyment in this regard.

To fill the above two gaps, this chapter aims to unveil the dimensions of chatbot service quality and how they influence customers' service choices when shopping online, specifically their preferences for chatbot services and willingness to switch from human to chatbot services. Here, service preference refers to customers' inclination to favor one service option over another when they experience the selection process (Lin *et al*., 2021). Specifically, the research questions (RQs) answered in this chapter are as follows.

RQ1: In the context of online shopping, what dimensions are suitable for measuring chatbot service quality?

RQ2: What are the varying effects of various chatbot service quality dimensions on customers' service choices?

RQ3: Does perceived shopping enjoyment mediate the relationships between the chatbot service quality dimensions and customers' service choices?

5.2 Theoretical background

5.2.1 Dimensions of service quality in most used service quality models

From a customer's perspective, service quality can be defined as "a perception and is an overall subjective evaluation of the service in the interactive process of service delivery" (Chen *et al.*, 2022, p. 533). The service quality models encompass the American perspective, represented by the SERVQUAL model proposed by Parasuraman et al. (1988), and the European perspective, represented by Grönroos's (1982) and Lehtinen and Lehtinen's (1991) models. The most used models of service quality indicate that service quality primarily encompasses three dimensions, as outlined in Table 5-1. (1) Process quality, also called functional quality (Grönroos, 1982), interactive quality (Brady and Cronin, 2001; Lehtinen and Lehtinen, 1991) or service delivery (Rust and Oliver, 1994), refers to "how" the service is provided. This type of service quality is derived from the interaction between the service provider and customers (Brady and Cronin, 2001; Lehtinen and Lehtinen, 1991). (2) Outcome quality, also termed technical quality (Grönroos, 1982), physical products (Lehtinen and Lehtinen, 1991) or service

products (Rust and Oliver, 1994), refers to “what” service is provided. The outcome of the service process could be a tangible output such as a meal, or an intangible output such as product information (Kharub *et al.*, 2021). (3) Environment quality, refers to “where” the service is provided, including ambient conditions, physical elements and social factors (Brady and Cronin, 2001; Chen *et al.*, 2024).

Table 5-1. Dimensions of service quality in most used service quality models

Source	Process quality	Outcome quality	Environment quality	Corporate image
SERVQUAL SERVPERF	Responsiveness, empathy Assurance	Reliability	Tangibles	
Grönroos (1982)	Functional quality	Technical quality		Image
Lehtinen and Lehtinen (1991)	Interactive quality	Physical product	Physical support	Corporate quality
Rust and Oliver (1994)	Service delivery	Service product	Service environment	
Brady and Cronin (2001)	Interaction quality	Outcome quality	Physical service environment	

5.2.2 Service quality dimensions used in this chapter

Kharub *et al*. (2021) pointed out that the dimensions of service quality need to be adjusted to reflect the specific requirements of an industry and the services being provided. Therefore, drawing upon the service quality dimensions utilized in existing chatbot studies, as shown in Table 5-2, this chapter chooses active control, understandability and synchronicity as functional process quality dimensions, perceived humanness as the emotional process quality dimension, and problem-solving as the outcome quality dimension. These five dimensions are appropriate for assessing the quality of chatbot services in the context of online shopping, as explained below.

Table 5-2. Service quality dimensions utilized in chatbot studies and this thesis

Type of service quality	Dimensions of service quality		Definitions	Reference
	This thesis	Chatbot studies		
Process quality	Active control	Ease of use	It is simple and intuitive for customers to interact with and navigate the chatbot's interface and features.	Chen *et al.*, 2023
		User interface	The overall ease of use, ease of navigation and overall design of the chatbot.	Hsiao and Chen, 2022
		Accessibility	Easy to locate, easy to use, easy to understand and readily compatible with different technological devices.	Rajaobelina *et al.*, 2021
		Efficiency	Technically ease of use and speed of chatbots.	Chen *et al.*, 2022; Noor *et al.*, 2022
	Understandability	Competence	The required skills and knowledge that the customer service agent needs to have in order to perform the service.	Meyer-Waarden *et al.*, 2020
		Self-learning/ continuous improvement	The chatbot continuously improves functions by self-learning.	Chen *et al.*, 2022; Chen *et al.*, 2023
		Understandability	The customer's perception that a chatbot service understands human dialogues, the context of a conversation and the nuance of human language.	Chen *et al.*, 2022; Li *et al.*, 2021;
		Credibility	The believability of a source or message.	Meyer-Waarden *et al.*, 2020
		Accuracy of response	Chatbots can respond to customers' requirements accurately.	Chen *et al.*, 2023
		Customization/ personalization	The chatbot recommends personalized products or services based on customer preferences without requiring their explicit request.	Chen *et al.*, 2022; Chen *et al.*, 2023; Misischia *et al.*, 2022;
	Synchronicity	Responsiveness	The ability to provide swift service, which involves timely responses, immediate answers and prompt service.	Kharub, *et al.*, 2021; Li *et al.*, 2021; Meyer-Waarden *et al.*, 2020; Yun and Park, 2022
		Availability	The extent to which the chatbot is ready for use anywhere, anytime.	Chen *et al.*, 2023; Noor *et al.*, 2022
	Perceived humanness	Empathy	Caring, individualizing attention the employee provides its customers.	Chen *et al.*, 2023; Kharub, *et al.*, 2021; Pavone *et al.*, 2019; Meyer-Waarden *et al.*, 2020; Yun and Park, 2022

		Assurance	The knowledge and courtesy of employees and their ability to inspire trust and confidence.	Kharub *et al.*, 2021; Li *et al.*, 2021; Yun and Park, 2022
		Human-like/ anthropomorphism	Chatbots display human-like characteristics, motivations, intentions or emotions.	Chen *et al.*, 2022; Noor *et al.*, 2022
Outcome quality	Problem-solving	Problem-solving	The ability of chatbots to effectively resolve any problems encountered by the customer during online shopping.	Hsiao and Chen, 2022; Misischia *et al.*, 2022;
		Reliability	The ability to perform the promised service dependably and accurately.	Kharub *et al.*, 2021; Pavone *et al.*, 2019; Li *et al.*, 2021; Meyer-Waarden *et al.*, 2020
		Consistency	The quality of service provided by the chatbot is stable.	Chen *et al.*, 2023
		Trendiness	Updates the customer with current news about new products or emerging trends.	Misischia *et al.*, 2022;
		Entertainment	Providing customers with entertaining content that they enjoy.	Kharub *et al.*, 2021; Misischia *et al.*, 2022;
Environment quality	/	Tangibles	Physical facilities, equipment and appearance of personnel.	Meyer-Waarden *et al.*, 2020)
		Design	The richness of the environment's representation, which is determined by characteristics of form, notably graphics, images, animation, vidio and so on.	Rajaobelina *et al.*, 2021

Active control. Human-chatbot interactions, unlike human-human interactions, are facilitated through interfaces. Hence, the service process first depends on the usability of the interfaces. Prior studies include ease of use (Chen *et al.*, 2023), user interface (Hsiao and Chen, 2022), accessibility (Rajaobelina *et al*., 2021) and efficiency (Chen *et al.*, 2022; Noor *et al.*, 2022) to assess the usability of chatbot interfaces. However, these dimensions merely reflect the technical aspects of chatbot usage and do not capture customers' perceptions of their interactions with chatbots. Thus, this chapter adopts "active control" as the first functional process quality dimension of chatbot services, which refers to customers' perception of their ability to influence or manipulate an information system to control the flow of interaction according to their preferences and needs (Liu and Shrum, 2002).

Understandability. A smooth service process requires the chatbot to be able to provide relevant responses according to customers' requests (Sheehan *et al.*, 2020). A few variables used by existing studies, such as competence and credibility (Meyer-Waarden *et al.*, 2020), understandability (Chen *et al.*, 2022; Li *et al.*, 2021) and accuracy of response (Chen *et al.*, 2023), all reflect this requirement. Since chatbots are equipped with natural language processing technologies that support the contextual understanding of human dialogues (Li *et al.*, 2021) and provide responses in human language (Rese *et al.*, 2020), customers naturally expect chatbots to understand their inquiries. When chatbots provide irrelevant information, they are perceived as not understanding the customer's inquiries. Therefore, this chapter adopts "understandability" as the second functional process quality dimension of chatbot services, which refers to customers' perception that chatbots understand human dialogues, the context of a conversation and the nuance of human language (Li *et al.*, 2021).

Synchronicity. Compared to human services, which often involve waiting, instant response is a significant advantage of chatbot services. Aligning with the studies that utilize "responsiveness" (e.g., Kharub *et al.*, 2021; Li *et al.*, 2021) or "availability" (e.g., Chen *et al.*, 2023; Noor *et al.*, 2022) as one variable of chatbot service process quality, this chapter adopts "synchronicity", which refers to the degree to which participants' input into the communication and the response they receive from the communication are simultaneous (Liu and Shrum, 2002).

Perceived humanness. One important aspect of delivering a satisfactory service is that service staff

convey empathy and assurance to customers. In chatbot studies, scholars have used empathy and assurance (Kharub *et al.*, 2021), humanlike (Chen *et al.*, 2022) and anthropomorphism (Noor *et al.*, 2022) to reflect this point. Considering that online retailers tend to design chatbots to be more human-like to enhance customers' service experience (Go and Sundar, 2019; Xu *et al.*, 2022), this chapter employs perceived humanness, which refers to customers' perception of the similarity between the behavior and appearance of technological devices and human beings (Li *et al.*, 2021), to reflect the emotional process quality.

Problem solving. Service outcome quality addresses "what service customers receive". While various variables are used to evaluate service outcomes in chatbot studies, such as reliability (Li *et al.*, 2021), consistency (Chen *et al.*, 2023) and trendiness (Misischia *et al.*, 2022), they do not directly point to actual service outcomes customers are seeking when interacting with chatbots. Therefore, aligning with Hsiao and Chen (2022) and Misischia *et al*. (2022), this thesis employs "problem-solving", which refers to the extent to which the problems encountered by customers during online shopping are effectively addressed by chatbots (Hsiao and Chen, 2022; Misischia *et al.*, 2022), as the dimension of outcome quality.

5.3 Hypothesis development

5.3.1 Functional process quality

Active control

Actively controlling the flow of interaction with an information system allows participants to obtain information based on their needs (Liu and Shrum, 2022). When using chatbots, active control is mainly reflected in customers' control over when, where and in which way to express and input the questions they want to inquire about, as customer interaction with them primarily occurs through text-based human language conversations (Rese *et al.*, 2020). By actively controlling the conversation, customers can obtain desired information more quickly, as they can correct chatbots' misunderstandings or provide additional context to trigger chatbots to generate more accurate responses. As a result, it could enhance customers' intention to choose chatbot services. In addition, active control enables customers to gain better knowledge about the questions they consult and thus feel more confident in

their evaluation of products and purchase decisions (Ariely, 2000), potentially leading to a more enjoyable shopping experience. Therefore, this thesis proposes:

H1a. Active control is positively related to customers' preferences for chatbot services.

H1b. Active control is positively related to customers' willingness to switch from human to chatbot services.

H1c. Active control is positively related to perceived shopping enjoyment.

Understandability

Customers need chatbot services to get the information they want, and the prerequisite for chatbots to provide this information is that they can understand the customer's inquiries (Chen *et al.*, 2022). On the one hand, research has also shown that chatbots with a high level of understandability are considered more capable of providing better solutions to customers (Li *et al.*, 2021). This is because if the understandability of chatbots is poor, the responses they provide would be irrelevant, offering little assistance to customers. On the other hand, the understandability of chatbots enables two-way communication between chatbots and customers, distinguishing them from static information delivery tools, such as a list of frequently asked questions (Go and Sundar, 2019). It is found that two-way communication between customers and e-commerce websites can significantly affect customers' perception of shopping enjoyment (Yoo *et al*., 2010), while the use of chatbots significantly strengthens this relationship between the perceived two-way communication of e-commerce websites and customers' level of trust, satisfaction and purchase intention towards online retailers (Mero, 2018). Therefore, this thesis proposes:

H2a. Understandability of chatbots is positively related to customers' preferences for chatbot services.

H2b. Understandability of chatbots is positively related to customers' willingness to switch from human to chatbot services.

H2c. Understandability of chatbots is positively related to perceived shopping enjoyment.

Synchronicity

Synchronicity reflects the speed of response, facilitating efficient communication (Yoo *et al.*,

2010). When customers experience long waiting times, they will evaluate online stores negatively (Novak *et al.*, 2000). It is reported that if the alternative was to wait 15 minutes for a response, 62% of customers would rather choose chatbot services than human services (Fokina, 2024). This aligns with the fact that about 53% of customers found waiting too long for replies to be the most frustrating part of interacting with businesses (Fokina, 2024). In this respect, chatbots elicit higher customer satisfaction with online stores via shorter perceived waiting times (Ruan and Mezei, 2022). Therefore, this thesis proposes:

H3a. The synchronicity of chatbot services is positively related to customers' preferences for chatbot services.

H3b. The synchronicity of chatbot services is positively related to customers' willingness to switch from human to chatbot services.

H3c. The synchronicity of chatbot services is positively related to perceived shopping enjoyment.

5.3.2 Emotional process quality

Perceived humanness

The perceived humanness of chatbots comes primarily from the anthropomorphic cues such as human-like persona, conversational language patterns and emotional expressions (Go and Sundar, 2019). On the one hand, consumers generally prefer to interact with actual humans (Klein and Martinez, 2023), because they tend to be more open, agreeable, extroverted, conscientious and self-disclosing when interacting with humans than with chatbots (Mou and Xu, 2017). Although chatbots' perceived humanness does not improve their problem-solving ability, it is expected to meet customers' need for interaction with human service employees to some extent. On the other hand, some literature suggests that consumers who interact with chatbots exhibiting human-like features may develop perceptions of social presence (Munnukka *et al.*, 2022), warmth (Xu *et al.*, 2022) and intimacy (Jiang *et al.*, 2022), which increase their trust in and intention to use chatbots (Fu *et al.*, 2023). As a result, customers perceive more enjoyment in online shopping. Thus, this thesis proposes:

H4a. The perceived humanness of chatbots is positively related to customers' preferences for chatbot services.

H4b. The perceived humanness of chatbots is positively related to customers' willingness to switch from human to chatbot services.

H4c. The perceived humanness of chatbots is positively related to perceived shopping enjoyment.

5.3.3 Service outcome quality

Problem-solving

Successful service outcomes are characterized by efficiently and effectively resolving customers' problems or requests (Haugeland *et al.*, 2022). As a replacement for human service employees, chatbots utilize machine learning and natural language processing to solve customers' problems (Xu *et al.*, 2020) by providing relevant information through voice or text. A Gartner survey of 497 online customers found that the ability of chatbots to move the customers' problems forward was the top driver of adoption, explaining 18% of the variance in customers' likelihood of using chatbots again (Gartner, 2023). However, chatbots rely on input pattern matching to find a pre-defined response that matches the input. Such an approach works well in a conversation featuring well-defined and routine issues but does not provide satisfactory results in open-ended conversations dealing with unstructured problems (Mohamad Suhaili *et al.*, 2021). Customers who make efforts and spend time interacting with chatbots but cannot have their problem solved might feel that online shopping is annoying, frustrating and less enjoyable (Castillo *et al.*, 2020). Therefore, this thesis proposes:

H5a. The problem-solving ability of chatbots is positively related to customers' preferences for chatbot services.

H5b. The problem-solving ability of chatbots is positively related to customers' willingness to switch from human to chatbot services.

H5c. The problem-solving ability of chatbots is positively related to perceived shopping enjoyment.

5.3.4 Mediator

Perceived shopping enjoyment

From a service perspective, customers' online shopping experience is a psychological state manifested by subjective perceptions of overall service delivery (Chen *et al.*, 2021). In this sense, what chatbot services bring to customers' online shopping experience goes beyond the utilitarian value, such

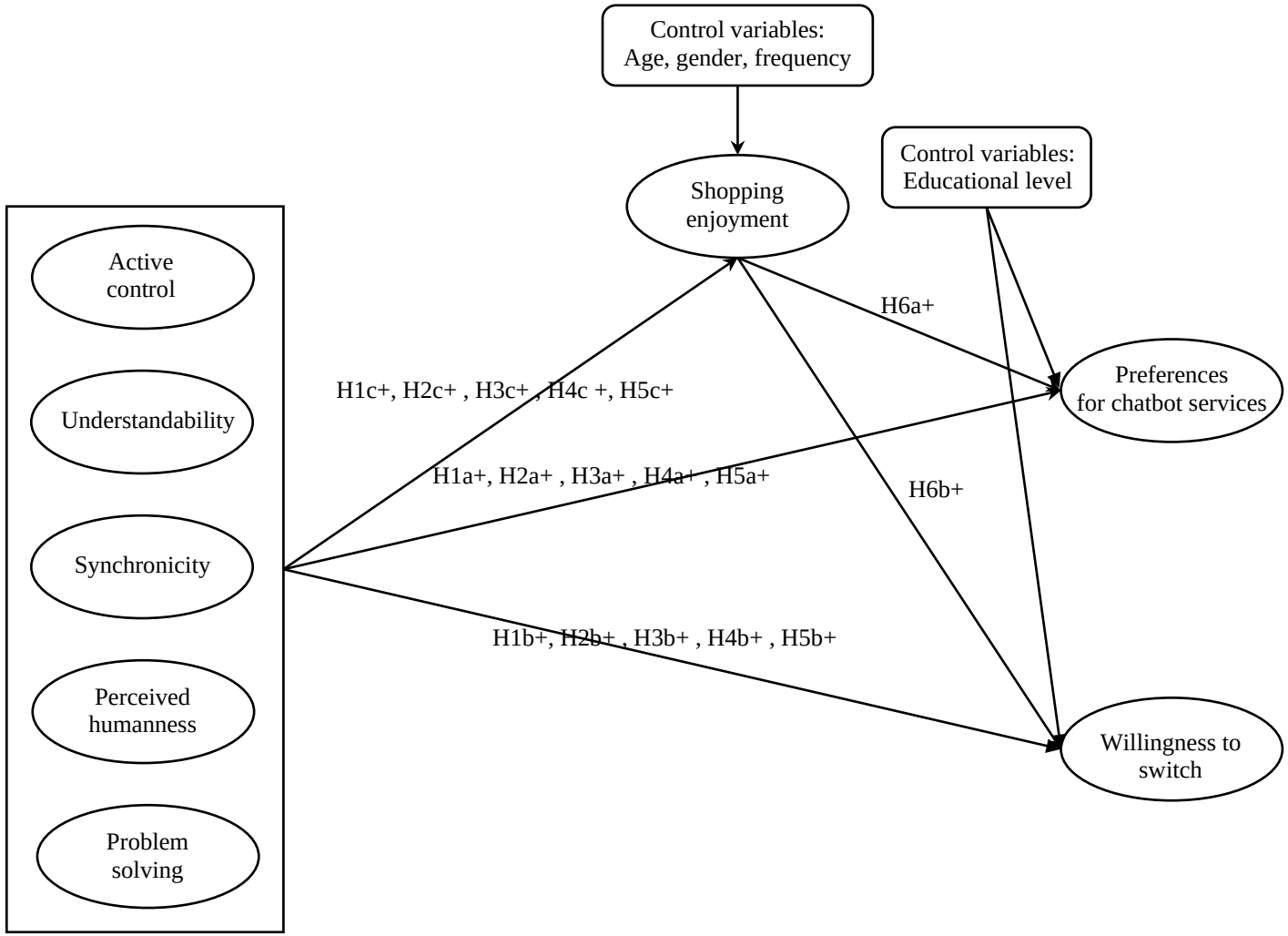
as immediate response and 24/7 availability (Lee and Park, 2022), emphasizing the perceived shopping enjoyment, i.e., the pleasure, satisfaction or positive emotions derived from the shopping journey (Chen *et al.*, 2021). For example, as chatbots are perceived to have less agency (i.e., the ability to act purposely, form opinions and make judgments) than human service employees, the services provided by them will reduce potential customer embarrassment during awkward service encounters, such as purchasing sensitive products (e.g., contraceptives and personal hygiene products) and behaving inappropriately (e.g., intrusive questioning and not replying to received messages) (Pitardi *et al.*, 2022). Consequently, customers' perception of freedom and control over online shopping will also increase, as they can freely decide when to initiate, pause and stop conversations with chatbots without concern for their reactions, being chased or feeling obliged to buy products (Wolfinbarger and Gilly, 2001). Given that perceived shopping enjoyment acts as a mediator between the experience of technology usage and customer attitudes toward these technologies in the context of online shopping (Childers *et al.*, 2001; Lee *et al.*, 2010), a phenomenon expected to extend to chatbot services, this thesis proposes:

H6a. Perceived enjoyment of the online shopping served by chatbots is positively related to customers' preferences for chatbot services.

H6b. Perceived enjoyment of the online shopping served by chatbots is positively related to customers' willingness to switch from human to chatbot services.

Figure 5-1 below illustrates the theoretical framework containing all the hypotheses.

Figure 5-1. Research framework



5.4 Methodology

5.4.1 Questionnaire design

The online questionnaire was developed in English, translated into Chinese by one of the authors, and then checked by another author, both native Chinese speakers. The survey underwent a pilot test and was revised to avoid confusion, ambiguity and inaccurate interpretation. The survey consisted of three sections, as detailed below.

The first section consists of questions related to customers' preferences for chatbot and human services. Specifically, respondents are asked to indicate whether they prefer "chatbot service", "human service", "either" or "neither" in 18 service scenarios with varying levels of task complexity. This consideration arises from the understanding of task-technology fit theory, which predicts that the more complex the task is, the lower the individual's interest in adopting a technology (Dishaw and Strong, 1999). In the case of chatbot services, customers may choose chatbot services in one service scenario but human services in another, because they perceive the problem-solving ability of chatbots to be superior for low-complexity tasks but inferior for high-complexity tasks when compared to human service employees (Xu *et al*, 2020).

This chapter relies on high/low involvement product purchases and purchase stages to develop different service scenarios with varying levels of task complexity. Literature suggests that the service task tends to be more complex in high-involvement product purchases than in low-involvement product purchases, since the former entails higher levels of risk and requires more information to assist consumers in making purchase decisions than the latter (Cho *et al.*, 2003). In addition, the task complexity is highest in the post-purchase stage, followed by the pre-purchase stage, and lowest in the during-purchase stage. This is because services required in the post-purchase stage, such as product usage instructions, tend to be more flexible; services required in the pre-purchase stage, such as providing product information, tend to be more standardized; while during the purchase stage, customers generally place orders and make payments using the online transaction system and hence need minimal services (Cheng *et al.*, 2021).

Correspondingly, this chapter developed 2 (high- and low-involvement product purchases) × 9

(sub-stages of the purchase journey, covering pre-, during- and post-purchase stages) service scenarios in Table 5-3. In addition, this thesis choses electronic products (laptops, mobile phones, smart watches, learning machines, etc.) to proxy high-involvement products (Mehta and Chugan, 2015) and grocery staples (toothpaste, towels, detergent, napkins, etc.) to proxy low-involvement products (Cho *et al.*, 2003). The related questionnaire is presented in Appendix C3.

The second section consisted of questions related to active control, understandability, synchronicity, perceived humanness, problem-solving, perceived shopping enjoyment and willingness to switch from human to chatbot services. The third section collected the demographic and behavioral information of the respondents, including gender, age, educational background, income, employment status and online shopping frequency.

Table 5-3. 2×9 service scenarios and a calculation example of preference scores for chatbot and human services

2×9 service scenarios and sample respondent's choice	Purchase stage	Pre-purchase			During-purchase		Post-purchase				Preference scores in low- and high-involvement product purchase scenarios
	Sub-stage of purchase	S1	S2	S3	S4	S5	S6	S7	S8	S9	
		Product information browsing and consulting	Retailer choice	Delivery time and logistics issues	Add to shopping cart	Order and pay	Product quality check and feedback	Product use consultation and guidance	Exchange and return goods	Maintenance and other after-sales services	
	Low-involvement product purchase (LP)	LP-S1	LP-S2	LP-S3	LP-S4	LP-S5	LP-S6	LP-S7	LP-S8	LP-S9	
		Neither	Chatbot service	Chatbot service	Either	Neither	Chatbot service	Human service	Human service	Human service	
	High-involvement product purchase (HP)	HP -S1	HP -S2	HP -S3	HP -S4	HP -S5	HP -S6	HP -S7	HP -S8	HP -S9	
		Neither	Chatbot service	Chatbot service	Either	Either	Human service	Human service	Human service	Chatbot service	
Coding for preferences for chatbot services	Low-involvement product purchase	0	1	1	1	0	1	0	0	0	**LP-Chatbot = $\frac{4}{9}$ =0.44**
	High-involvement product purchase	0	1	1	1	1	0	0	0	1	**HP-Chatbot= $\frac{5}{9}$ =0.56**
Preference scores for chatbot services in different purchase stages		**Pre-Chatbot = $\frac{4}{6}$ =0.67**			**During-Chatbot = $\frac{3}{4}$ =0.75**		**Post-chatbot = $\frac{2}{8}$ =0.25**				
Coding for preferences for human services	Low-involvement product purchase	0	0	0	1	0	0	1	1	1	**LP-Human = $\frac{4}{9}$ =0.44**
	High-involvement product purchase	0	0	0	1	1	1	1	1	0	**HP-Human = $\frac{5}{9}$ =0.56**
Preference scores for human services in different purchase stages		**Pre-Human= $\frac{0}{6}$ =0**			**During-Human = $\frac{3}{4}$ =0.75**		**Post-Human = $\frac{6}{8}$ =0.75**				

LP-Chatbot: Preferences for chatbot services when purchasing low-involvement products;
LP-Human: Preferences for human services when purchasing low-involvement products;
HP-Chatbot: Preferences for chatbot services when purchasing high-involvement products;
HP-Human**:** Preferences for human services when purchasing high-involvement products;
Pre-Chatbot: Preferences for chatbot services during the pre-purchase stage;
Pre-Human: Preferences for human services during the pre-purchase stage;
During-Chatbot: Preferences for chatbot services during the during-purchase stage;
During-Human: Preferences for human services during the during-purchase stage;
Post-Chatbot: Preferences for chatbot services during the post-purchase stage;
Post-Human: Preferences for human services during the post-purchase stage.

5.4.2 Sample and recruitment

Ethics approval (H8792) was obtained from the authors' university. This thesis employed a non-probabilistic purposive sampling strategy by targeting Chinese adults who had used chatbot services when shopping online. Questionnaires were distributed to the panel of a reliable research platform, Credamo (www.credamo.com). During the period from August to December 2022, a total of 648 adult participants were recruited through Credamo for a nominal fee. To avoid the problems associated with mischievous responders, which refers to responders who deliberately falsify information (Ward and Pond III, 2015), surveys were checked for random reporting and fake responses by analyzing average duration time. After removing the invalid responses, 575 usable responses were obtained, resulting in an effective response rate of 88.7%. The respondents come from 29 out of 34 provinces, autonomous regions, municipalities and special administrative regions in China. Appendix B3 reports their demographic information.

5.4.3 Measurement

Preference for chatbot services

Data collected from section 1 allows us to calculate preference scores for chatbot services (human services) by using the ratio of respondents' choices of "chatbot service" or "either" ("human service" or "either") in different categories of service scenarios. For example, among the nine sub-stages of low-involvement product purchases, if a respondent has chosen "chatbot service" or "either" in four sub-stages, the "preference score for chatbot services when purchasing low involvement products (LP-Chatbot)" will be calculated as "$\frac{4}{9} = 0.44$". Methodologically, when calculating the preference scores for chatbot services, "chatbot service" and "either" are coded as "1", while "human service" and "neither" are coded as "0"; on the contrary, when calculating the preference scores for human services, "human service" and "either" are coded as "1", while "chatbot service" and "neither" are coded as "0". In this way, the preference scores are the mean values of the corresponding categories of service scenarios, as shown in Table 5-3.

Subsequently, preference scores for chatbot services in four categories of service scenarios, i.e., during pre-purchase (Pre-Chatbot) and post-purchase stages (Post-Chatbot), as well as when purchasing

low- (LP-Chatbot) and high-involvement products (HP-Chatbot), are utilized as indicators for the construct of "preference for chatbot services", as shown in Table 5-3.

Other constructs

The constructs of active control, understandability, synchronicity, perceived humanness, shopping enjoyment, problem-solving and willingness to switch were adapted from previous studies, as indicated in Table 5-4, column 1. Seven-point Likert scales anchored by 1=strongly disagree and 7 = strongly disagree were used. The scale items are reported in Table 5-4.

Table 5-4. Factor Loading and validity measures

Construct	Indicator	Loading	Cronbach's α	CR	AVE
Active control (Liu, 2003; Yoo *et al.*, 2010)	I felt like I knew exactly what questions I should ask the chatbot to get the information I wanted.	0.893	0.734	0.883	0.790
	When I consulted a chatbot, I had no idea how I should describe the questions to get the information I wanted. (r)	0.885			
Understandability (Chen *et al.*, 2022; Li *et al.*, 2021)	The information provided by the chatbot was relevant to the questions I asked.	0.808	0.811	0.888	0.726
	The chatbot can understand the questions I asked very well.	0.888			
	It was quite difficult to ask further questions to the chatbot. (r)	0.859			
Synchronicity (Liu, 2003; Yoo *et al.*, 2010)	Getting responses from the chatbot was very fast.	0.891	0.601	0.765	0.530
	The chatbot was very slow in responding to my inquiries. (r)	0.693			
	The chatbot was very efficient in responding to my inquiries.	0.560			
Perceived humanness (Fu *et al.*, 2023; Tsai *et al.*, 2021)	The chatbot was friendly, polite and respectful to me.	0.805	0.603	0.833	0.714
	The chatbot made me feel like it was willing to help me with my questions.	0.882			
Problem-solving (Xu *et al.*, 2020)	I was able to obtain the information I wanted from the chatbot without any delay.	0.863	0.719	0.876	0.780
	When I sent an inquiry to the chatbot, I felt like my question was resolved immediately.	0.902			
Shopping enjoyment (Ma, 2021; Mpinganjira, 2014)	I found it freer to consult a chatbot than a human when shopping online.	0.847	0.817	0.891	0.733
	I found consulting the chatbot was a good approach to shopping without disturbance.	0.831			
	The chatbot provided me with a relaxed shopping experience.	0.889			
Preference for chatbot services	Preference for chatbot services when purchasing high-involvement products	0.913	0.859	0.906	0.707
	Preference for chatbot services when purchasing low-involvement products	0.897			
	Preference for chatbot services during the pre-purchase stage	0.730			
	Preference for chatbot services during the post-purchase stage	0.812			

Willingness to switch (Carsana and Jolibert, 2018)	I would consider consulting the chatbot in more situations in the future.	0.916	0.753	0.889	0.801
	In the future, I would probably prefer to switch from the chatbot to human services as much as possible (r).	0.873			

5.4.4 Validity test

To assess the convergent validity of the constructs, this thesis first examined their Cronbach's alpha values. As shown in Table 5-4, all of the constructs demonstrated Cronbach's alpha values ranging from 0.601 to 0.859, which are higher than the acceptable threshold of 0.60 (Daud *et al.*, 2018; Taber, 2018). The composite reliability indicators are higher than the recommended threshold of 0.7 (Hair *et al.*, 2011). The AVE of each construct is also greater than the threshold value of 0.5 suggested by Fornell and Larcker (1981). These results indicate that the constructs have sufficient convergent validity.

To assess the discriminant validity, this thesis first investigated the cross-loading results in SmartPLS. All the cross-loadings are less than the loading on the main construct. This thesis then assessed two criteria, the Fornell and Larcker and the Heterotrait-Monotrait Ratio of Correlations (HTMT ratio) reported in the SmartPLS, as shown in Table 5-5. Regarding Fornel-Lacker's criteria, the square root of the AVE on each construct must exceed the estimated correlations between the construct and other constructs in the model (Fornell and Larcker, 1981). In this thesis, the square root of AVE for each construct (indicated by the diagonal elements) is greater than the correlations of the construct with other constructs (indicated by the off-diagonal elements). To supplement Fornel-Lacker's criteria, Henseler et al. (2015) imposed a more stringent assessment of the variables' discriminant validity by observing the HTMT ratio and suggested that all variables are distinctively different with a cutoff point of 0.90 on the HTMT ratio. As shown in Table 5-5, the HTMT ratio for all variables is below 0.9, confirming the discriminant validity.

Table 5-5. Results of the discriminant validity test

Fornell-Larcker Criterion			1	2	3	4	5	6	7	8
	1	Active control	0.889							
	2	Understandability	0.660	0.852						
	3	Synchronicity	0.552	0.574	0.728					
	4	Perceived humanness	0.447	0.478	0.496	0.845				
	5	Problem solving	0.529	0.680	0.567	0.445	0.883			

	6	Shopping enjoyment	0.549	0.694	0.571	0.545	0.693	0.856		
	7	Service preference	0.256	0.472	0.299	0.234	0.412	0.447	0.841	
	8	Willingness to switch	0.529	0.710	0.500	0.429	0.644	0.710	0.521	0.895
Heterotrait-monotrait Ratio of Correlations (HTMT ratio)			1	2	3	4	5	6	7	8
	1	Active control								
	2	Understandability	0.856							
	3	Synchronicity	0.797	0.713						
	4	Perceived humanness	0.666	0.673	0.787					
	5	Problem solving	0.727	0.881	0.743	0.663				
	6	Shopping enjoyment	0.704	0.847	0.718	0.765	0.898			
	7	Service preference	0.326	0.560	0.372	0.326	0.518	0.533		
	8	Willingness to switch	0.710	0.896	0.615	0.622	0.861	0.895	0.641	

5.5. Data analysis and results

5.5.1 Paired-sample t-tests: Comparison of customers' preferences for chatbot and human services across different service scenarios

Figure 5-2 shows the mean scores of customers' preferences for chatbot and human services in different categories of service scenarios. The results show that in all categories of service scenarios, the preference scores assigned to human services are generally higher than those assigned to chatbot services. This thesis then conducted paired-sample t-tests on preference scores assigned to chatbot versus human services across the five categories of service scenarios shown in Figure 5-2, and the results are presented in Table 5-6 and summarized below.

Panel A compares customers' preferences for chatbot versus human services in the same category of service scenarios. The results confirm that customers generally prefer human services over chatbot services in all categories of service scenarios, except for pre-purchase stage interactions for low-involvement product purchases (pair 4). This is possibly because the complexity of service tasks in this category of scenarios is the lowest among all the categories of service scenarios.

Figure 5-2. Mean scores of customers' preferences for chatbot versus human services

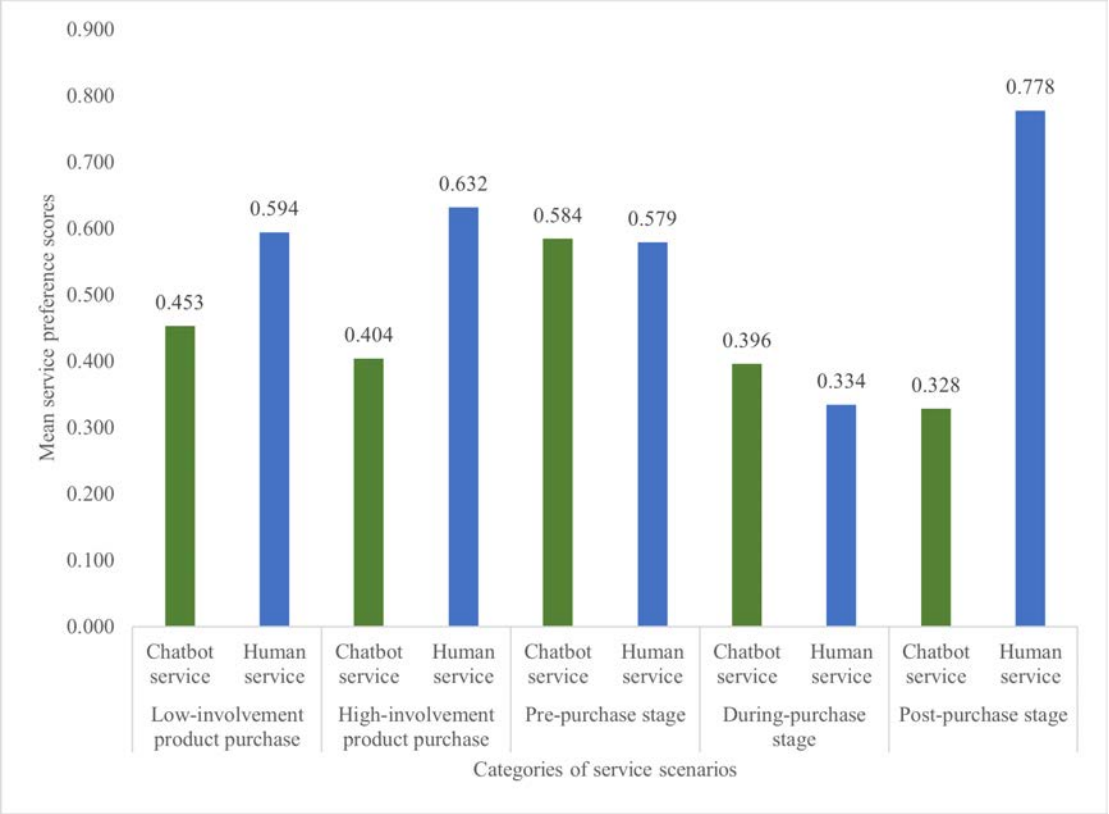


Table 5-6. The results of paired-sample t-tests on preference scores for chatbot versus human services in different categories of service scenarios

		Mean	Difference	Significance
Panel A: A comparison of preference scores for chatbot versus human services in different categories of service scenarios.				
Pair 1	LP-Chatbot	0.453	-0.141	< 0.001
	LP-Human	0.594		
Pair 2	HP-Chatbot	0.404	-0.228	< 0.001
	HP-Human	0.632		
Pair 3	Pre-Chatbot	0.584	0.005	0.783
	Pre-Human	0.579		
Pair 4	Pre-Chatbot (LI)	0.610	0.050	< 0.05
	Pre-Human (LI)	0.560		
Pair 5	Pre-Chatbot (HI)	0.558	-0.041	< 0.1
	Pre-Human (HI)	0.598		
Pair 6	During-Chatbot	0.396	0.061	< 0.001
	During-Human	0.334		
Pair 7	Post-Chatbot	0.328	-0.450	< 0.001
	Post-Human	0.778		
Panel B: Do customers' preferences towards chatbot services differ between different categories of service scenarios with varying levels of task complexity?				
Pair 8	LP-Chatbot	0.453	0.049	< 0.001
	HP-Chatbot	0.404		
Pair 9	Pre-Chatbot	0.584	0.188	< 0.001
	During-Chatbot	0.396		
Pair 10	During-Chatbot	0.396	0.067	< 0.001
	Post-Chatbot	0.328		
Pair 11	Pre-Chatbot	0.584	0.256	< 0.001
	Post-Chatbot	0.328		
Panel C: Do customers' preferences towards human services differ between different categories of service scenarios with varying levels of task complexity?				
Pair 12	LP-Human	0.594	-0.037	< 0.001
	HP-Human	0.632		
Pair 13	Pre-Human	0.579	0.245	< 0.001
	During-Human	0.334		
Pair 14	During-Human	0.334	-0.443	< 0.001
	Post-Human	0.778		
Pair 15	Pre-Human	0.579	-0.199	< 0.001
	Post-Human	0.778		

Source(s): Developed by the authors

Panel B compares customers' preferences for chatbot services across different categories of service scenarios. The results show that customers prefer chatbot services in service scenario categories of low complexity (low-involvement product purchases and pre-purchase stages) more than those of high

complexity (high-involvement product purchases and post-purchase stages). However, the preference for chatbot services in the pre-purchase stage is higher than that in the during-purchase stage, which contradicts the notion that the more complex the service scenario category, the more customers prefer chatbot services. This is possibly because almost half of the participants (46.8%) chose “Neither” for the during-purchase stage.

Panel C compares customers’ preferences for human services across different categories of service scenarios. The results show that customers prefer human services in service scenario categories of high complexity (high-involvement product purchases and post-purchase stages) more than those of low complexity (low-involvement product purchases and pre-purchase stages).

5.5.2 PLS-SEM analysis: The varying effects of chatbot service quality dimensions on customers’ service choices

This thesis employed SmartPLS for partial least squares structural equation modelling (PLS-SEM) to test the hypotheses. The approximate fit index SRMRs for the saturated models is 0.059, well within the acceptable range between 0 and 0.08 (Hu and Bentler, 1999), indicating the model is robust. The results are presented in Table 5-7 and are described below.

Table 5-7. Results of hypothesis testing

Hypotheses		Coefficients	SD	Hypothesis support	Specific indirect effects	Coefficients	SD
H1a	Active control -> Preference for chatbot services	-0.116*	0.049	No	Active control -> Shopping enjoyment -> Preference for chatbot services	0.009	0.011
H1b	Active control -> Willingness to switch	0.037	0.040	No	Active control -> Shopping enjoyment -> Willingness to switch	0.013	0.016
H1c	Active control -> Shopping enjoyment	0.038	0.044	No			
H2a	Understandability -> Preference for chatbot services	0.330***	0.059	Yes	Understandability -> Shopping enjoyment -> Preference for chatbot services	0.069***	0.019
H2b	Understandability -> Willingness to switch	0.338***	0.051	Yes	Understandability -> Shopping enjoyment -> Willingness to switch	0.105***	0.022
H2c	Understandability -> Shopping enjoyment	0.297***	0.047	Yes			
H3a	Synchronicity -> Preference for chatbot services	0.006	0.053	No	Synchronicity -> Shopping enjoyment -> Preference for chatbot services	0.022*	0.011
H3b	Synchronicity -> Willingness to switch	0.003	0.038	No	Synchronicity -> Shopping enjoyment -> Willingness to switch	0.034*	0.015
H3c	Synchronicity -> Shopping enjoyment	0.097*	0.039	Yes			
H4a	Perceived humanness -> Preference for chatbot services	-0.051	0.044	No	Perceived humanness -> Shopping enjoyment -> Preference for chatbot services	0.042**	0.013
H4b	Perceived humanness -> Willingness to switch	-0.013	0.033	No	Perceived humanness -> Shopping enjoyment -> Willingness to switch	0.065***	0.015
H4c	Perceived humanness -> Shopping enjoyment	0.183***	0.035	Yes			
H5a	Problem-solving -> Preference for chatbot services	0.114*	0.052	Yes	Problem-solving -> Shopping enjoyment -> Preference for chatbot services	0.075***	0.021
H5b	Problem-solving -> Willingness to switch	0.154***	0.043	Yes	Problem-solving -> Shopping enjoyment -> Willingness to switch	0.114***	0.025
H5c	Problem-solving -> Shopping enjoyment	0.323***	0.044	Yes			
H6a	Shopping enjoyment -> Preference for chatbot services	0.232***	0.054	Yes			
H6b	Shopping enjoyment -> Willingness to switch	0.355***	0.050	Yes			

SRMR for the saturated model is 0.059.
*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, + $p < 0.1$

Source(s): Developed by the authors

Firstly, in terms of functional process quality dimensions, active control does not significantly influence perceived shopping enjoyment and willingness to switch, but it negatively and significantly influences preferences for chatbot services ($\beta = -0.116$, $p < 0.05$), which is contrary to hypothesis H1a. Hence, H1a, H1b and H1c are unsupported. Understandability is positively and significantly related to preferences for chatbot services ($\beta = 0.330$, $p < 0.001$), willingness to switch ($\beta = 0.338$, $p < 0.001$) and perceived shopping enjoyment ($\beta = 0.297$, $p < 0.001$), supporting H2a, H2b and H2c. Synchronicity positively and significantly influences perceived shopping enjoyment ($\beta = 0.097$, $p < 0.05$), but it does not significantly influence preferences for chatbot services and willingness to switch. Thus, H3c is supported, but H3a and Hb are unsupported. Secondly, regarding the emotional process quality, perceived humanness positively and significantly influences perceived shopping enjoyment ($\beta = 0.183$, $p < 0.001$), but it does not significantly influence preferences for chatbot services and willingness to switch. Hence, H4c is supported but H4a and H4b are unsupported. Finally, as for the outcome quality, problem-solving is positively and significantly related to preferences for chatbot services ($\beta = 0.114$, $p < 0.05$), willingness to switch ($\beta = 0.154$, $p < 0.001$) and perceived shopping enjoyment ($\beta = 0.323$, $p < 0.001$), supporting H5a, H5b and H5c.

With regard to perceived shopping enjoyment, it positively and significantly influences preferences for chatbot services ($\beta = 0.232$, $p < 0.001$) and willingness to switch ($\beta = 0.355$, $p < 0.001$), supporting H6a and H6b. Moreover, perceived shopping enjoyment partially mediates the relationships between understandability and both preferences for chatbot services ($\beta = 0.069$, $p < 0.001$) and willingness to switch ($\beta = 0.105$, $p < 0.001$), as well as the relationships between problem-solving and both preferences for chatbot services ($\beta = 0.075$, $p < 0.001$) and willingness to switch ($\beta = 0.114$, $p < 0.001$). In contrast, it fully mediates the relationships between synchronicity and both preferences for chatbot services ($\beta = 0.022$, $p < 0.05$) and willingness to switch ($\beta = 0.034$, $p < 0.05$), as well as the relationships between perceived humanness and both preferences for chatbot services ($\beta = 0.042$, $p < 0.01$) and willingness to switch ($\beta = 0.065$, $p < 0.001$).

Finally, the control variables age ($\beta = -0.062$, $p < 0.05$) and gender ($\beta = -0.051$, $p < 0.1$) negatively and significantly influence perceived shopping enjoyment, while online shopping frequency ($\beta = 0.065$,

$p < 0.05$) positively and significantly influence perceived shopping enjoyment ($\beta = 0.066$, $p < 0.05$. Moreover, the indirect effects of age, gender and online purchase frequency on customers' preferences for chatbot service and their willingness to switch from human to chatbot services through perceived shopping enjoyment are all significant. These findings suggest that younger individuals, males and those who shop frequently will perceive more enjoyment in online shopping when served by chatbots, which further enhances their intention to choose chatbot services. In addition, educational level negatively and significantly influences preferences for chatbot services ($\beta = -0.148$, $p < 0.01$) and willingness to switch ($\beta = -0.042$, $p < 0.1$), suggesting that individuals with high educational level are less willing to switch from human to chatbot services.

5.6 Discussion

5.6.1 Interpretation of findings

The PLS-SEM analysis shows that chatbot service quality plays a significant role in customers' choices between chatbot and human services, either directly or through the mediation of perceived shopping enjoyment. Specifically, this influence manifests in the following four aspects.

5.6.1.1 Functional process quality

Active control

Surprisingly, this chapter finds that active control actually negatively and significantly affects customers' preferences for chatbot services, which further reduces their willingness to switch from human to chatbot services. This finding contradicts the results of some studies utilizing the TAM or UTAUT, which indicate that the ease of use of chatbots significantly enhances customer attitudes toward using chatbots (e.g., Silva *et al.*, 2023; Ashfaq *et al.*, 2020), or that this effect exists only for men and not for women (Forgas-Coll *et al.*, 2022). This is possibly because the more active control customers feel, that is, the more they believe they know how to use chatbots or how to ask questions to chatbots, the more they attribute the irrelevance of the information provided by chatbots to their insufficient understanding or problem-solving ability. Consequently, they are more dissatisfied with chatbot services, leading to a lower intention to choose them.

In addition, this thesis found that active control does not significantly impact perceived shopping

enjoyment. This could be attributed to the fact that all the respondents shop online very frequently (at least 1-3 times per month, as shown in Appendix B3). Hence, they are familiar with how to use chatbots, such as the keywords to type in when asking chatbot questions. As a result, only 43 respondents (7.5%) feel negatively about their control over the flow of interaction with chatbots.

Understandability

Among the three dimensions of functional process quality, understandability has the most significant direct impact on the choice of whether to use chatbot services. This finding aligns with the findings of Li *et al.* (2021) and Chen *et al*. (2022) that understandability positively and significantly influences customers' satisfaction with using chatbots and their continuous use intention. This is reasonable, as current technology does not allow chatbots to fully understand customers' inquiries due to their reliance on input pattern matching and a pool of predefined responses (Mohamad Suhaili *et al.*, 2021). Consequently, service failures, such as chatbots' inability to comprehend personalized or contextualized requests, or giving "mechanical" responses (Song *et al.*, 2023), or providing irrelevant information, may lead to a decrease in customers' intention to choose chatbot services.

Moreover, this chapter also extends the findings of Li *et al.* (2021) and Chen *et al.* (2022) by revealing the indirect effect of understandability on customers' intention to choose chatbot services through perceived shopping enjoyment. Specifically, customers may be unable to understand the essential attributes of products due to chatbots' failures to understand customers' inquiries, preventing them from proceeding with their purchases. This, in turn, results in a less enjoyable or frustrating shopping experience, which further significantly reduces their intention to choose chatbot services.

Synchronicity

Synchronicity has no direct and significant effect on customers' preferences for chatbot services and willingness to switch from human to chatbot services. These findings align with Yun and Park (2021) and Li *et al.* (2021) in that synchronicity has no direct effect on customer satisfaction with using chatbot services. This could be because customers are generally aware that synchronicity is an inherent advantage of chatbot services, regardless of whether they choose to use them or not. This is evidenced in our survey by the high mean scores of three indicators of synchronicity, which are 5.9, 6.2, and 5.9.

However, both Yun and Park (2021) and Li *et al.* (2021) did not examine the mediating role of perceived shopping enjoyment in these relationships. This chapter extends their findings by confirming that the significant positive impact of synchronicity on customers' perception of shopping enjoyment, as noted by Chen *et al.* (2021), further enhances customers' intention to choose chatbot services. In addition, it is also noteworthy that the impact of synchronicity on perceived shopping enjoyment is much weaker compared to that of understandability. This could be attributed to synchronicity adding value to the shopping experience only when chatbots' responses are relevant.

5.6.1.2 Emotional process quality

The emotional process quality of chatbot services proxied by perceived humanness has no significant effects on customers' preferences for chatbot services and their willingness to switch from human to chatbot services. This finding contradicts the findings of Chen *et al.* (2022), which suggest that the human-like characteristics of chatbots could significantly enhance customer satisfaction or trust in using chatbots and consequently increase their intention to reuse them. The reasons could be found in studies by Fu *et al.* (2023) and Song and Shin (2024). Specifically, Fu *et al.* (202) found that anthropomorphism has a negative influence on customers' trust in using chatbots, since it enhances consumers' expectations of their service performance, causing them to feel more dissatisfied with irrelevant or inaccurate responses. Song and Shin (2024) found that enhancing the humanness of chatbots will significantly increase customers' feelings of eeriness due to the uncanny valley effect, which refers to a phenomenon where exposure to an almost authentic yet imperfect representation of real humans is assumed to evoke eeriness in users, thereby reducing their trust in chatbots and their intention to reuse them.

However, Fu *et al.* (2023) and Song and Shin (2024) did not examine the mediating role of perceived shopping enjoyment. As this thesis predicted, the perceived humanness of chatbots has a significant indirect effect on customers' preferences for chatbot services and their willingness to switch from human to chatbot services through perceived shopping enjoyment. This may be because, in the context of online shopping, customers seek not only to purchase products but also to pursue social benefits, which include interacting with human service employees (Pereira *et al.*, 2021). The human-

like features and social presence of chatbots may satisfy customers' social interaction needs (Sheehan *et al.*, 2022), enhancing their perception of shopping enjoyment. This, in turn, positively and significantly influences customers' choice of chatbot services.

5.6.1.3 Outcome quality

On the one hand, the problem-solving ability of chatbots directly impacts customers' choice of chatbot services, aligning with Xu *et al.* (2020) in showing that this ability directly influences customers' preferences for chatbot services over human services. This is because customers are typically outcome-oriented, meaning they prefer chatbots when they can efficiently resolve their problems or requests (Haugeland *et al.*, 2022). This also explains why customers' preferences for chatbot services are lower in complex service scenarios: it is probably because customers perceive chatbots' problem-solving ability to be limited (Xu *et al.*, 2020). Specifically, chatbots are more ineffective in dealing with topic-led conversations than task-led ones (Haugeland *et al.*, 2022).

On the other hand, this chapter also extends Xu *et al.*'s (2020) findings by revealing that problem-solving also indirectly influences customers' intention to choose chatbot services through perceived shopping enjoyment. To some extent, problem-solving could also considered as one dimension of functional process quality (Misischia *et al.*, 2022), as customers typically consult diverse questions with varying complexity throughout their purchase journey (Cheng *et al.*, 2021), ranging from inquiries about the material, size and features of the products, to the way and time of logistics, and procedure of return, exchange and refund. Therefore, along this journey, any failure in solving customers' problems will lead to frustration and disappointment; such negative emotions will make the overall shopping experience unenjoyable and reduce customers' intention to choose chatbot services.

5.6.1.4 The mediating role of perceived shopping enjoyment

This chapter confirms that perceived shopping enjoyment serves as a significant mediator that translates understandability, synchronicity, perceived humanness and problem-solving to customers' preferences for chatbot services and their willingness to switch from human to chatbot services. This supports this thesis's argument that customers treat chatbots as service employees for assistance during online shopping, rather than mere technological gadgets. Therefore, it is more appropriate to apply

service quality theories rather than technology-related theories to explore customers' perceptions, attitude and behaviors towards chatbot services. Additionally, the mediating role of perceived shopping enjoyment also validates the viewpoint that service quality research needs to consider the industrial characteristics and the context in which the service is provided (Kharub *et al*., 2021).

5.6.2 Theoretical contributions

Unlike the prevailing perspective in most existing chatbot studies, which considers chatbots to be pure information delivery technologies, this chapter treats chatbots as service employees. Building upon empirical analysis, this chapter advances the theoretical understanding of when and why customers would choose chatbot services during online shopping from the following two perspectives. Firstly, the paired-sample t-tests on preference scores for chatbot versus human services give more evidence to support the task-technology fit theory, confirming that higher task complexity will lower customers' preferences for chatbot services. Secondly, findings from the PLS-SEM analysis make valuable contributions to the research field of e-service quality. This analysis reveals how various dimensions of chatbot service quality influence customers' choices between chatbot and human services in an online shopping context. Moreover, this chapter uncovers the crucial mediating role of perceived shopping enjoyment in these relationships. This discovery underscores the importance of considering industry-specific characteristics and the context in which the service is delivered when researching service quality.

5.6.3 Practical implications

The results of this chapter offer important implications for online retailers. First, given that customers' service preferences vary across service scenarios with different task complexity, online retailers could optimize their resource allocation between chatbot and human service agents. For example, online retailers may need to allocate more staff to support customers purchasing high-involvement products or seeking consultation in the post-purchase stages. For relatively standardized and routine services, retailers are recommended to regularly update and optimize the question list and automated answers, making chatbot services more effective.

Second, to make chatbots a more attractive service option to customers, online retailers could work

on the following three service quality dimensions. (1) Enhancing perceived humanness. Online retailers are suggested to anthropomorphize chatbots by incorporating visual (e.g., human figures), identity (e.g., human names) and conversational cues (i.e., mimicking human language) (Go and Sundar, 2019). (2) Improving understandability of chatbots. Online retail platforms could continuously improve natural language processing algorithms to enhance the chatbot's ability to understand and process natural language inquiries from customers, thus improving two-way communication. (3) Upgrading the problem-solving ability of chatbots. Online retailers could regularly review and analyze customer questions, based on which to prepare and refine automated answers.

5.6.4 Limitations and future research

Although this chapter provides new insights and creates valuable theoretical contributions and practical implications, it does have several limitations. First, while this chapter examines four dimensions of chatbot service quality, it is important to note that chatbot technology constantly evolves. As chatbots become more intelligent (Zhu *et al.*, 2022), the significance of different service quality dimensions may change, and some new dimensions may emerge. Future research could employ a more qualitative approach, such as conducting interviews with customers, to verify and identify the dimensions of chatbot service quality that customers value, while considering the intelligent level of chatbot technology at that time. Second, this chapter's task complexity across different service scenarios is distinguished based on product types and purchase stages. Considering that individual customers could vary in their shopping experience, expertise, motivation and ability, the categorization may not capture the nuance in different customers' perceived task complexity. Future research could measure perceived task complexity using some constructs to verify this chapter's findings. Third, this chapter is limited to exploring the impact of chatbot service quality dimensions on customers' choices between chatbot and human services. Future research could consider examining which factors influence customers' service choices from the customers' perspective, such as technology anxiety and the need for human interaction.

Chapter 6: Conclusion

Chapter overview. This chapter summarizes the findings, contributions and limitations of this thesis, and then proposes some future research directions.

6.1 Summary of key findings

The literature review Chapter 2 confirms that online store branding is an emerging area within retail brand research, characterized by a high relative research growth rate and low relative total research output, suggesting that it warrants further research efforts. Moreover, it identifies the attributes of offline and online stores and further categorizes them into intrinsic and extrinsic attributes based on Keller's (1993) customer-based brand equity model.

Regarding platform-based online store attributes, Chapter 3 and Chapter 4 found that the attributes valued by customers during the post-purchase and pre-purchase stages are very different, so they should be treated separately. Furthermore, this thesis identifies 21 pre-purchase attributes that influence customers' purchase decisions and 16 post-purchase attributes that affect customer satisfaction and repurchase intentions. Notably, there are significant differences in the pre-purchase attributes between standalone and platform-based online stores. Finally, based on the differences in the importance customers place on various attributes, this thesis identifies three distinct customer segments during the pre-purchase and post-purchase stages, respectively.

Regarding chatbot service quality, chapter 5 reveals that synchronicity and perceived humanness do not have a significant direct impact on customers' preferences for chatbot services and their willingness to switch from human to chatbot services, but understandability and problem-solving do. Moreover, perceived shopping enjoyment fully mediates the impact of synchronicity and humanness, and partially mediates the impact of understandability and problem-solving on customers' service intention to choose chatbot services.

6.2 Contributions to the field

This thesis advances Keller's customer-based brand equity model in the following aspects. Firstly,

Keller's model was developed based on product or service brands, as evidenced by its division and definition of two types of attributes, as shown in Table 6-1. This thesis extends its application to store brands, which are more multi-sensory than product or service brands, making their attributes richer and more diverse. Specifically, the intrinsic attributes of a store encompass those necessary for providing the shopping experience sought by customers, such as product attributes, service attributes and environment attributes. In contrast, the extrinsic attributes are the external aspects of the store related to customers' shopping experience, such as platform image, customer review and sales volume. Secondly, this thesis reveals significant differences in pre-purchase attributes between standalone and platform-based online stores (Chapter 3), as well as between the pre-purchase and post-purchase attributes of platform-based online stores (Chapter 3 and Chapter 4). This suggests that the brand image of an online store should differentiate between standalone and platform-based stores and between the pre-purchase and post-purchase stages. Third, the identification and categorization of pre-purchase and post-purchase attributes of platform-based online stores can help develop scales for measuring their brand image at each stage.

Table 6-1. Two types of attributes in Keller's customer-based brand equity model

Theories	Terms used	Intrinsic perspective	Extrinsic perspective
Customer-based brand equity model (Keller, 1993, p. 4)	Product-related attributes and non-product-related attributes	Product-related attributes are defined as the ingredients necessary for performing the product or service function sought by customers.	Non-product-related attributes are defined as the external aspects of the product or service that are related to its purchase or consumption.
Customer-based brand equity model (Keller, 2001, p.10-11)	Brand performance and brand imagery	Brand performance refers to the intrinsic properties of the brand in terms of inherent product or service characteristics.	Brand imagery deals with the extrinsic properties of the product or service, including the ways in which the brand attempts to meet customers' psychological or social needs.

Moreover, this thesis enriches service quality theory by examining varying effects of chatbot service quality dimensions on customers' intention to choose chatbots in online shopping context. Firstly, four dimensions for measuring chatbot service quality in online shopping context are identified, with empirical testing confirming their significant impact on customers' intention to choose chatbot services. Secondly, the mediating role of perceived shopping enjoyment in the relationship between

chatbot service quality dimensions and customers' intention to use chatbot services is confirmed. These findings suggest that it is necessary to consider the industry-specific context in which the chatbot service is delivered when researching chatbot service quality.

Methodologically, Chapter 2 (literature review) develops a new quantitative approach to evaluate the research development stage of various research topics by investigating two new metrics, i.e. the relative total research output and the relative research growth rate. Using this approach, the existing research topics can be classified into mature, hotspot, emerging and potential areas. This new approach provides a quantitative way for scholars to dynamically analyse and understand the latest research trends.

Practically, this thesis sheds light on retail practitioners in the following four aspects. First, platform-based online stores can gain a competitive edge over standalone online and offline stores by improving the store attributes identified in this thesis, thus strengthening the dominant position of online retail platforms in the current retail e-commerce industry. Second, since there are rich and diverse platform-based online stores and customers place varying levels of importance on these attributes, retailers should allocate resources to specific categories of store attributes based on their customers' characteristics and their own strengths to build a competitive advantage. Third, offline retail stores and standalone online stores generally enjoy higher store familiarity, whereas platform-based online stores have lower familiarity but offer better value for money. With reference to the pre-purchase attributes of platform-based online stores identified in this thesis, value-conscious customers could be more confident in making purchases on online retail platforms. Finally, the findings from Chapter 5 show that customers generally prefer human services over chatbot services in almost all categories of service scenarios, suggesting customers are not sufficiently confident or comfortable with chatbot service yet. However, online stores are facing an increasing pressure from the rising labor cost in China. Our findings on the quality dimensions of chatbot services could potentially help ease this dilemma. Specifically, online retailers could enhance the service quality of chatbots by improving understandability, perceived humanness and problem-solving ability, thus reducing the demand for human support. This reduction in reliance on human services can help platform-based online stores alleviate the operational pressures caused by rising labor costs in China.

6.3 Limitations of the study and future research suggestions

Firstly, literature review Chapter 2 focuses on highly ranked journals, using the ABDC journal ranking list, so some of the more insightful articles published in other journals may be overlooked. Future works could focus on retail brand studies published in recent years, while expanding the scope of data sources to examine whether there are new insights worthy of attention.

Second, although Chapter 3 and Chapter 4 identified the existence of numerous store attributes and compared the relative importance of these attributes, they did not take customers' psychological characteristics into account. Future research could consider different shopping motivations (e.g., task-oriented and recreation-oriented) and customers' value propositions for the product (e.g., quality consciousness, price consciousness, brand consciousness and novelty consciousness), and examine how these differences affect the importance placed on each attribute.

Third, this thesis employs the Best-Worst Scaling approach to explore the relative importance of various platform-based online stores, which amplifies differences in importance between various attributes by making trade-offs between them (Pascoe *et al.*, 2017). Future research could complement this method by using Likert scaling, which captures the nuances of complex attitude structures through multiple response options (Willits *et al.*, 2016).

Fourth, while this thesis examined four dimensions of chatbot service quality, it is important to note that chatbot technology constantly evolves. As chatbots become more intelligent (Zhu *et al.*, 2022), the significance of various service quality dimensions may change, and some new dimensions may emerge. Future research could employ a more qualitative approach, such as conducting interviews with customers, to identify and verify the dimensions of chatbot service quality that customers value, while considering the intelligent level of chatbot technology at that time.

Fifth, this thesis focuses on how to build the image of platform-based online stores but does not extend to their societal impacts, such as environmental pollution, overconsumption, increased income inequality due to the monopoly of large internet platforms, and corresponding policy measures. Future research could consider exploring these aspects.

Finally, this thesis focuses on Chinese Taobao stores as research object. Future research could use

this thesis as a reference to explore the attributes and their relative importance of online stores operating on other types of retail platforms, such as the live-streaming e-commerce platform Tik Tok.

Publications related to this thesis

Chapter	Paper	Journal	ABDC Ranking	Five-year impact factor	Status
Chapter 2	Chen, S., Wang, P., & Wood, J. (2023). What is a retail brand-a systematic review of terms and definitions.	International Journal of Retail & Distribution Management, 51(5), 653-673. https://doi.org/10.1108/IJRDM-06-2022-0187	A	5.5	**Published** (14 April 2023)
	Chen, S., Wang, P., & Wood, J. (2024). Exploring the holistic nature of a multi-level retail brand: a scoping review.	Journal of Product & Brand Management. https://doi.org/10.1108/JPBM-12-2022-4280	A	5.7	**Published** (5 August 2024)
Chapter 3	Chen, S., Wang, P., & Wood, J. What matters to customers? Unveiling the attributes shaping the pre-purchase brand image of platform-based online stores.	Internet Research.	A	7.9	Under Review (Submitted on 27-Jul-2024)
Chapter 4	Chen, S., Wang, P., & Wood, J. Unveiling customers' prioritization of pre-purchase attributes for platform-based online stores: a mix methods study		-	-	Ready for submission
Chapter 3 & 4	Chen, S., Wang, P., & Wood, J. Attributes influencing the brand image of a platform-based online store in the post-purchase stage: A mix methods study		-	-	Ready for submission
Chapter 5	Chen, S., Wang, P., & Wood, J. Varying effects of chatbot service quality dimensions on customers' service choices: the mediating role of perceived shopping enjoyment.	Journal of Service Theory & Practice	A	4.9	**Major Revision** (02-Aug-2024)
Related article	Chen, S., Wang, P., & Wood, J. (2024). Economy or premium? A systematic review of factors influencing retailers' own product brand strategies.	International Journal of Retail & Distribution Management, 52(4), 477-492. https://doi.org/10.1108/IJRDM-08-2023-0528	A	5.5	**Published** (19 April 2024)

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Appendix A. Participants of semi-structured interviews

A1. Profile of interviewed online store owners

	Gender	Age	Education	Number of fans	Store type	Store credit level	Opening year	Product category	Annual sales volume (thousand)
S1	Female	35	College degree	242,000	Enterprise store	One golden crown	2013	Diary DIY	2,000
S2	Male	42	Senior high school	88,153	Individual store	Five blue crowns	2005	Creative stationery	300
S3	Female	35	College degree	57,917	Individual store	Five blue crowns	2010	Creative stationery	900
S4	Female	40	College degree	15,639	Individual store	Two golden crowns	2012	Children's clothing	5,000
S5	Female	42	Senior high school	9,721	Tmall store	-	2019	Wall stickers	2,000
S6	Male	39	College degree	446,000	Individual store	Three golden crowns	2009	Diary DIY	3,000
S7	Male	42	College degree	16,046	Individual store	Four golden crowns	2012	Envelop and writing paper	430
S8	Male	45	Senior high school	76,579	Tmall store	-	2012	Underwear	10,000
S9	Male	32	College degree	1,539	Individual store	Two blue crowns	2017	Sign and mark	2,000
S10	Male	35	Bachelor’s degree	4,019	Individual store	Three blue crowns	2017	Packing box	10,000
S11	Male	38	College degree	679	Tmall store	-	2016	Sign and mark	1,500
S12	Male	40	College degree	116	Enterprise store	Two diamonds	2022	Electric vehicle motor	600
S13	Male	29	Senior high school	898	Individual store	Two blue crowns	2021	Lovers’ ornaments customization	500
S14	Male	40	College degree	1,763	Individual store	Three golden crown	2021	Aluminium foil insulated bag	1,000
S15	Male	32	College degree	344	Enterprise store	Three diamonds	2022	Canvas bag	1,000

A2. Profile of interviewed online store customers

	Frequently purchased product categories	Gender	Age	Education	Monthly income	Employment	Online shopping frequency
C1	Clothing	Female	36-45	Junior middle school	20000-49999	Entrepreneurship	More than 2 times a week
C2	Daily necessities	Male	36-45	Senior high school	5000-9999	Entrepreneurship	1-3 times a month
C3	Clothing	Female	36-45	Junior middle school	>50000	Entrepreneurship	More than 2 times a week
C4	Electronic products, snacks	Male	18-25	Bachelor's degree	2000-4999	Student	1-2 time a week
C5	Clothing	Female	36-45		10000-1999	Entrepreneurship	More than 2 times a week
C6	Children's clothes	Female	36-45	Bachelor's degree	2000-4999	Housewife	1-2 time a week
C7	Clothing, daily necessities	Female	36-45	College degree	5000-9999	Freelancer	1-2 time a week
C8	Clothing, daily necessities	Female	46-55	College degree	2000-4999	Freelancer	1-2 time a week
C9	Snacks, clothing, cosmetics	Female	36-45	Graduate student	10000-19999	Housewife	1-2 time a week
C10	Clothing	Female	46-55	Bachelor's degree	10000-19999	Housewife	More than 2 times a week
C11	Mobile phone case, mobile phone film	Male	18-25	Graduate student	2000-4999	Student	1-3 times a month
C12	Clothing, daily necessities	Male	18-25	Graduate student	2000-4999	Student	1-3 times a month
C13	Clothing, daily necessities	Female	18-25	Graduate student	2000-4999	Student	1-3 times a month
C14	Clothing, daily necessities, snacks	Female	18-25	Graduate student	0-1999	Student	1-3 times a month
C15	Clothing, snacks	Male	18-25	Graduate student	2000-4999	Student	1-3 times a month
C16	Clothing, shoes, electronic products	Male	46-55	Senior high school	5000-999	Full time	1-3 times a month
C17	Daily necessities	Female	46-55	College degree	5000-9999	Full time	1-3 times a month
C18	Clothing	Female	26-35	Bachelor's degree	5000-999	Full time	1-3 times a month
C19	Small things that are not easy to buy in other places	Male	26-35	College degree	5000-9999	Full time	More than 2 times a week
C20	Clothing, health care products, cosmetics	Female	18-25	Bachelor's degree	2000-4999	Full time	1-3 times a month
C21	Clothing, daily necessities, cosmetics	Female	26-35	Bachelor's degree	2000-4999	Full time	1-3 times a month
C22	All kinds of things, baby products	Female	26-35	Bachelor's degree	5000-9999	Freelancer	1-2 time a week
C23	Cheap stuff	Female	36-45	Bachelor's degree	10000-19999	Full time	1-3 times a month
C24	Maternal and child products	Female	26-35	Senior high school	2000-4999	Full time	1-3 times a month

C25	All kinds of things	Male	26-35	College degree	2000-4999	Full time	1-3 times a month
C26	Clothing, cosmetics	Female	26-35	College degree	2000-4999	Full time	1-3 times a month
C27	Pet products, outdoor sporting goods, coffee	Male	36-45	Bachelor's degree	10000-1999	Full time	1-3 times a month
C28	All kinds of things	Female	26-35	College degree	50000-9999	Full time	1-3 times a month
C29	Clothing	Female	26-35	College degree	10000-1999	Full time	More than 2 times a week
C30	Children's food	Male	26-35	College degree	5000-9999	Full time	1-3 times a month
C31	Daily necessities	Male	26-35	College degree	5000-9999	Full time	Less than 1 time a month
C32	Clothing	Male	18-25	College degree	2000-4999	Student	More than 2 times a week
C33	Clothing	Female	18-25	Senior high school	2000-4999	Full time	More than 2 times a week

Appendix B. Participants of online surveys

B1. Profile of participants in the pre-purchase online store attributes survey

Dimension	**Group**	**Number**	**Percentage (%)**
Gender	Male	182	42.1
	Female	250	57.9
Age	18-25	76	17.6
	26-35	142	32.9
	36-45	118	27.3
	46-55	62	14.4
	56 -65	34	7.9
	66 and above	0	0
Diploma	Junior high school and below	2	0.5
	Senior high school and Vocational high school	41	9.5
	Junior college	55	12.7
	Undergraduate degree	270	62.5
	Graduate degree	64	14.8
Income	0-1,999	28	6.5
	2,000-4,999	55	12.7
	5,000-9,999	190	44.0
	10,000-19,999	132	30.6
	20,000-49,999	26	6.0
	50,000 and above	1	0.2
Employment	Student	47	10.9
	Homemaker	1	0.2
	Retiree	30	6.9
	Out of work	0	0.0
	Full-time employed	344	79.6
	Part-time job	0	0.0
	Freelancer	6	1.4
	Self-employed	4	0.9

Note: The current unit of income and monthly expenditure amount on Taobao is Yuan.

B2. Profile of participants in the post-purchase online store attributes survey

Dimension	**Group**	**Number**	**Percentage (%)**
Gender	Male	201	49.5
	Female	205	50.5
Age	18-25	80	19.7
	26-35	120	29.6
	36-45	105	25.9
	46-55	72	17.7
	56 -65	27	6.7
	66 and above	2	0.5
Diploma	Junior high school and below	6	1.5
	Senior high school and Vocational high school	25	6.2
	Junior college	60	14.8
	Undergraduate degree	252	62.1
	Graduate degree	63	15.5
Income	0-1,999	26	6.4
	2,000-4,999	75	18.5
	5,000-9,999	161	39.7
	10,000-19,999	114	28.1
	20,000-49,999	25	6.2
	50,000 and above	5	1.2
Employment	Student	45	11.1
	Homemaker	1	0.2
	Retiree	14	3.4
	Out of work	3	0.7
	Full-time employed	318	78.3
	Part-time job	4	1.0
	Freelancer	16	3.9
	Self-employed	5	1.2

B3. Profile of participants in the chatbot service survey

		Number	Percentage (%)
Gender	Male	237	41.2
	Female	338	58.8
Age	18-25	129	22.4
	26-35	241	41.9
	36-45	129	22.4
	46-55	54	9.4
	56-65	22	3.8
Diploma	Junior high school and below	9	1.6
	Senior high school and Vocational high school	9	1.6
	Junior college	60	10.4
	Undergraduate degree	424	73.7
	Graduate degree	73	12.7
Income	0-1,999	39	6.8
	2,000-4,999	84	14.6
	5,000-9,999	257	44.7
	10,000-19,999	153	26.6
	20,000-49,999	39	6.8
	50,000	3	0.5
Employment	Student	70	12.2
	Homemaker	1	0.2
	Retiree	7	1.2
	Out of work	1	0.2
	Full-time employed	486	84.5
	Part-time job	0	0.0
	Freelancer	3	0.5
	Self-employed	7	1.2
Online shopping Frequency	1-3 times per month	129	22.4
	1-2 times per week	255	44.3
	More than 2 times per week	191	33.2

Source(s): Developed by the authors

Appendix C. Online survey questionnaires

C1. Survey 1: Survey on customers' prioritization of the 21 pre-purchase platform-based online store attributes

Section 1. What do you base your purchase decisions on?

1.1 Among the following five attributes, which one is the "most important" and which one is the "least important" when you choose to buy products from an unfamiliar store on Taobao?

Store attributes and attribute statements	Most important	Least important
Professionalism of services (Able to provide correct answers to customer inquiries.)		
Product price (The actual price after enjoying various discounts.)		
Response speed (The waiting time required for customers to receive a response.)		
Product video (Product videos demonstrating and introducing products.)		
Store age (The number of years the store has been in business.)		

1.2 Among the following five attributes, which one is the "most important" and which one is the "least important" when you choose to buy products from an unfamiliar store on Taobao?

9/3/6/21/20

Store attributes and attribute statements	Most important	Least important
Number of followers (The number of people who have followed this store.)		
Store age (The number of years the store has been in business.)		
Product detail page (A series of pictures and text in the product link that provide detailed information about the product.)		
Credit level (The number of golden crowns, blue crowns, diamond or hearts, representing the level of credibility.)		
Sales volume (Cumulative sales of a specific product within the last 30 days.)		

1.3 Among the following five attributes, which one is the "most important" and which one is the "least important" when you choose to buy products from an unfamiliar store on Taobao?

Store attributes and attribute statements	Most important	Least important
Store decoration (The homepage design of a store, such as webpage layout, store style, brand image display, etc.)		
Sales volume		

(Cumulative sales of a specific product within the last 30 days.)		
Product video (Product videos demonstrating and introducing products.)		
Product catalog (Classification of various products for easy navigation and location of specific items.)		
Dynamic score (Three dynamic ratings for each online store provided by Taobao: description accuracy, logistics service, and service attitude.)		

1.4 Among the following five attributes, which one is the “most important” and which one is the “least important” when you choose to buy products from an unfamiliar store on Taobao?

Store attributes and attribute statements	Most important	Least important
Store decoration (The homepage design of a store, such as webpage layout, store style, brand image display, etc.)		
Product detail page (A series of pictures and text in the product link that provide detailed information about the product.)		
Customer review (Various comments about the product or store by customers who have made purchases.)		
Professionalism of services (Able to provide correct answers to customer inquiries.)		
Service attitude (The attitude of the service employee when responding to customer inquiries.)		

1.5 Among the following five attributes, which one is the “most important” and which one is the “least important” when you choose to buy products from an unfamiliar store on Taobao?

Store attributes and attribute statements	Most important	Least important
Product introductions and recommendations (Answering customers' product inquiries and recommending similar or complementary products.)		
Store decoration (The homepage design of a store, such as webpage layout, store style, brand image display, etc.)		
Number of followers (The number of people who have followed this store.)		
Response speed (The waiting time required for customers to receive a response.)		
Product design (Product design in terms of function, appearance and materials, etc.)		

1.6 Among the following five attributes, which one is the “most important” and which one is the “least

important” when you choose to buy products from an unfamiliar store on Taobao?

Store attributes and attribute statements	Most important	Least important
Credit level (The number of golden crowns, blue crowns, diamond or hearts, representing the level of credibility.)		
Service attitude (The attitude of the service employee when responding to customer inquiries.)		
Main picture (The main picture, located at the top of the product link, is displayed on the store homepage and platform search results.)		
Response speed (The waiting time required for customers to receive a response.)		
Product catalog (Classification of various products for easy navigation and location of specific items.)		

1.7 Among the following five attributes, which one is the “most important” and which one is the “least important” when you choose to buy products from an unfamiliar store on Taobao?

Store attributes and attribute statements	Most important	Least important
Service attitude (The attitude of the service employee when responding to customer inquiries.)		
Sales volume (Cumulative sales of a specific product within the last 30 days.)		
Customized response (Not ready-made standardized reply templates.)		
Product price (The actual price after enjoying various discounts.)		
Product introductions and recommendations (Answering customers' product inquiries and recommending similar or complementary products.)		

1.8 Among the following five attributes, which one is the “most important” and which one is the “least important” when you choose to buy products from an unfamiliar store on Taobao?

Store attributes and attribute statements	Most important	Least important
Main picture (The main picture, located at the top of the product link, is displayed on the store homepage and platform search results.)		
Dynamic score (Three dynamic ratings for each online store provided by Taobao: description accuracy, logistics service, and service attitude.)		
Number of followers (The number of people who have followed this store.)		
Customer review		

(Various comments about the product or store by customers who have made purchases.)	
Product price (The actual price after enjoying various discounts.)	

1.9 Among the following five attributes, which one is the “most important” and which one is the “least important” when you choose to buy products from an unfamiliar store on Taobao?

Store attributes and attribute statements	Most important	Least important
Product video (Product videos demonstrating and introducing products.)		
Product design (Product design in terms of function, appearance and materials, etc.)		
Customer review (Various comments about the product or store by customers who have made purchases.)		
Credit level (The number of golden crowns, blue crowns, diamond or hearts, representing the level of credibility.)		
Customized response (Not ready-made standardized reply templates.)		

1.10 Among the following five attributes, which one is the “most important” and which one is the “least important” when you choose to buy products from an unfamiliar store on Taobao?

Store attributes and attribute statements	Most important	Least important
Customized response (Not ready-made standardized reply templates.)		
Product variety (The number of product categories in the store and the number of product styles within each individual category.)		
Product detail page (A series of pictures and text in the product link that provide detailed information about the product.)		
Dynamic score (Three dynamic ratings for each online store provided by Taobao: description accuracy, logistics service, and service attitude.)		
Response speed (The waiting time required for customers to receive a response.)		

1.11 Among the following five attributes, which one is the “most important” and which one is the “least important” when you choose to buy products from an unfamiliar store on Taobao?

Store attributes and attribute statements	Most important	Least important
Product video (Product videos demonstrating and introducing products.)		

Main picture (The main picture, located at the top of the product links, are displayed on the store homepage and platform search results.)	
Product introductions and recommendations (Answering customers' product inquiries and recommending similar or complementary products.)	
Platform image (A Tmall store or a regular Taobao store.)	
Product detail page (A series of pictures and text in the product link that provide detailed information about the product.)	

1.12 Among the following five attributes, which one is the “most important” and which one is the “least important” when you choose to buy products from an unfamiliar store on Taobao?

Store attributes and attribute statements	Most important	Least important
Platform image (A Tmall store or a regular Taobao store.)		
Customer review (Various comments about the product or store by customers who have made purchases.)		
Overall product image (Apart from the best-selling items, the sales and reviews of other products are also good.)		
Response speed (The waiting time required for customers to receive a response.)		
Sales volume (Cumulative sales of a specific product within the last 30 days.)		

1.13 Among the following five attributes, which one is the “most important” and which one is the “least important” when you choose to buy products from an unfamiliar store on Taobao?

Store attributes and attribute statements	Most important	Least important
Service attitude (The attitude of the service employee when responding to customer inquiries.)		
Store age (The number of years the store has been in business.)		
Dynamic score (Three dynamic ratings for each online store provided by Taobao: description accuracy, logistics service, and service attitude.)		
Platform image (A Tmall store or a regular Taobao store.)		
Product design (Product design in terms of function, appearance and materials, etc.)		

1.14 Among the following five attributes, which one is the “most important” and which one is the “least

important” when you choose to buy products from an unfamiliar store on Taobao?

Store attributes and attribute statements	Most important	Least important
Customer review (Various comments about the product or store by customers who have made purchases.)		
Product catalog (Classification of various products for easy navigation and location of specific items.)		
Product variety (The number of product categories in the store and the number of product styles within each individual category.)		
Product introductions and recommendations (Answering customers' product inquiries and recommending similar or complementary products.)		
Store age (The number of years the store has been in business.)		

1.15 Among the following five attributes, which one is the “most important” and which one is the “least important” when you choose to buy products from an unfamiliar store on Taobao?

Store attributes and attribute statements	Most important	Least important
Product video (Product videos demonstrating and introducing products.)		
Service attitude (The attitude of the service employee when responding to customer inquiries.)		
Product variety (The number of product categories in the store and the number of product styles within each individual category.)		
Number of followers (The number of people who have followed this store.)		
Overall product image (Apart from the best-selling items, the sales and reviews of other products are also good.)		

1.16 Among the following five attributes, which one is the “most important” and which one is the “least important” when you choose to buy products from an unfamiliar store on Taobao?

Store attributes and attribute statements	Most important	Least important
Overall product image (Apart from the best-selling items, the sales and reviews of other products are also good.)		
Main picture (The main picture, located at the top of the product links, are displayed on the store homepage and platform search results.)		
Store decoration (The homepage design of a store, such as webpage layout, store style, brand image display, etc.)		
Store age		

(The number of years the store has been in business.)
Customized response (Not ready-made standardized reply templates.)

1.17 Among the following five attributes, which one is the “most important” and which one is the “least important” when you choose to buy products from an unfamiliar store on Taobao?

11	**15**	**20**	**18**	**4**

Store attributes and attribute statements	Most important	Least important
Product introductions and recommendations (Answering customers' product inquiries and recommending similar or complementary products.)		
Professionalism of services (Able to provide correct answers to customer inquiries.)		
Dynamic score (Three dynamic ratings for each online store provided by Taobao: description accuracy, logistics service, and service attitude.)		
Credit level (The number of golden crowns, blue crowns, diamond or hearts, representing the level of credibility.)		
Overall product image (Apart from the best-selling items, the sales and reviews of other products are also good.)		

1.18 Among the following five attributes, which one is the “most important” and which one is the “least important” when you choose to buy products from an unfamiliar store on Taobao?

Store attributes and attribute statements	Most important	Least important
Professionalism of services (Able to provide correct answers to customer inquiries.)		
Main picture (The main picture, located at the top of the product links, are displayed on the store homepage and platform search results.)		
Sales volume (Cumulative sales of a specific product within the last 30 days.)		
Product variety (The number of product categories in the store and the number of product styles within each individual category.)		
Product design (Product design in terms of function, appearance and materials, etc.)		

1.19 Among the following five attributes, which one is the “most important” and which one is the “least important” when you choose to buy products from an unfamiliar store on Taobao?

Store attributes and attribute statements	Most important	Least important

Platform image (A Tmall store or a regular Taobao store.)		
Store decoration (The homepage design of a store, such as webpage layout, store style, brand image display, etc.)		
Product variety (The number of product categories in the store and the number of product styles within each individual category.)		
Credit level (The number of golden crowns, blue crowns, diamond or hearts, representing the level of credibility.)		
Product price (The actual price after enjoying various discounts.)		

1.20 Among the following five attributes, which one is the “most important” and which one is the “least important” when you choose to buy products from an unfamiliar store on Taobao?

Store attributes and attribute statements	Most important	Least important
Product catalog (Classification of various products for easy navigation and location of specific items.)		
Customized response (Not ready-made standardized reply templates.)		
Platform image (A Tmall store or a regular Taobao store.)		
Number of followers (The number of people who have followed this store.)		
Professionalism of services (Able to provide correct answers to customer inquiries.)		

1.21 Among the following five attributes, which one is the “most important” and which one is the “least important” when you choose to buy products from an unfamiliar store on Taobao?

Store attributes and attribute statements	Most important	Least important
Product price (The actual price after enjoying various discounts.)		
Product design (Product design in terms of function, appearance and materials, etc.)		
Product detail page (A series of pictures and text in the product link that provide detailed information about the product.)		
Overall product image (Apart from the best-selling items, the sales and reviews of other products are also good.)		
Product catalog (Classification of various products for easy navigation and location of specific items.)		

Section 2. What are your online shopping habits?

2.1 How often do you shop on Taobao?

○ Less than once a month
○ 1-3 times a month
○ 1-2 times a week
○ More than twice a week

2.2 What is your approximate total monthly spending on Taobao?

○ 1-199 yuan
○ 200-499 yuan
○ 500-999 yuan
○ 1000-1999 yuan
○ 2000-4999 yuan
○ 5000-9999 yuan
○ 10,000 yuan or more

Section 3. Personal Information

3.1 What is your gender?

○ Male
○ Female

3.2 Which age range do you fall into?

○ 17 and under
○ 18-25
○ 26-35
○ 36-45
○ 46-55
○ 56-65
○ 66 and over

3.3 What is your highest level of education?

○ Below high school
○ High school/vocational school
○ Associate degree
○ Bachelor’s degree
○ Graduate degree

3.4 What is your monthly income (or disposable income) in yuan?

○ 0-1,999 yuan
○ 2,000-4,999 yuan
○ 5,000-9,999 yuan
○ 10,000-19,999 yuan
○ 20,000-49,999 yuan

○ Above 50,000 yuan

3.5 Employment status

○ Student
○ Housewife
○ Retired
○ Unemployed
○ Full-time
○ Part-time
○ Freelancer
○ Self-employed

C2. Survey 2: Survey on customers' prioritization of the 31 platform-based online store attributes across pre-purchase and post-purchase stages

Section 1. Comparison of Factors Influencing Store Image Perception

1.1 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the "greatest impact" and which one has the "least impact"?

Store attributes and attribute statements	Most important	Least important
Product variety (The number of product categories in the store and the number of product styles within each individual category.)		
Product video (Product videos demonstrating and introducing products.)		
Product introductions and recommendations (Answering customers' product inquiries and recommending similar or complementary products.)		
Matching product description (The actual product received matches the description in the main picture, detail page, and video of the product sold on the online store.)		
Delivery time (The waiting time from placing an order to the customer receiving the product.)		
Service attitude (The attitude of the service employee when responding to customer inquiries.)		

1.2 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the "greatest impact" and which one has the "least impact"?

Store attributes and attribute statements	Most important	Least important
Accurate delivery (Delivering the correct products in the correct quantities.)		
Product price (The actual price after enjoying various discounts.)		
Member benefit (Benefits of becoming a member, such as member discounts.)		
Dynamic score (Three dynamic ratings for each online store provided by Taobao: description accuracy, logistics service, and service attitude.)		

Product introductions and recommendations (Answering customers' product inquiries and recommending similar or complementary products.)		
Product design (Product design in terms of function, appearance and materials, etc.)		

1.3 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the "greatest impact" and which one has the "least impact"?

Store attributes and attribute statements	Most important	Least important
Product detail page (A series of pictures and text in the product link that provide detailed information about the product.)		
Main picture (The main picture, located at the top of the product links, are displayed on the store homepage and platform search results.)		
Matching product description (The actual product received matches the description in the main picture, detail page, and video of the product sold on the online store.)		
Dynamic score (Three dynamic ratings for each online store provided by Taobao: description accuracy, logistics service, and service attitude.)		
Product condition (The product received is in good condition and undamaged.)		
Store decoration (The homepage design of a store, such as webpage layout, store style, brand image display, etc.)		

1.4 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the "greatest impact" and which one has the "least impact"?

Store attributes and attribute statements	Most important	Least important
5.Product variety (The number of product categories in the store and the number of product styles within each individual category.)		
22.Product quality (Attributes that meet customers' functional requirements for products, such as durability, reliability, safety, and ease of use.)		
30.Problem-solving		

(Returns, exchanges, reshipments, and refunds for unsatisfactory products.)		
20.Dynamic score (Three dynamic ratings for each online store provided by Taobao: description accuracy, logistics service, and service attitude.)		
10.Customer review (Various comments about the product or store by customers who have made purchases.)		
29.Ture delivery (Provide accurate delivery information. Do not enter a tracking number without actually delivering the item.)		

1.5 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the “greatest impact” and which one has the “least impact”?

Store attributes and attribute statements	Most important	Least important
Sales volume (Cumulative sales of a specific product within the last 30 days.)		
Member benefit (Benefits of becoming a member, such as member discounts.)		
Matching product description (The actual product received matches the description in the main picture, detail page, and video of the product sold on the online store.)		
Delivery packaging (To ensure the safe transportation of the product with packaging that is shockproof, pressure-resistant, and collision-resistant.)		
Ture delivery (Provide accurate delivery information. Do not enter a tracking number without actually delivering the item.)		
Accurate delivery (Delivering the correct products in the correct quantities.)		

1.6 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the “greatest impact” and which one has the “least impact”?

Store attributes and attribute statements	Most important	Least important
Product condition (The product received is in good condition and undamaged.)		
Service attitude		

(The attitude of the service employee when responding to customer inquiries.)	
Customized response (Not ready-made standardized reply templates.)	
Ture delivery (Provide accurate delivery information. Do not enter a tracking number without actually delivering the item.)	
Product introductions and recommendations (Answering customers' product inquiries and recommending similar or complementary products.)	
Store type (A Tmall store or a regular Taobao store.)	

1.7 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the "greatest impact" and which one has the "least impact"?

Store attributes and attribute statements	Most important	Least important
Customer review (Various comments about the product or store by customers who have made purchases.)		
Product design (Product design in terms of function, appearance and materials, etc.)		
Store age (The number of years the store has been in business.)		
Service attitude (The attitude of the service employee when responding to customer inquiries.)		
Product packaging (Packaging that conveys product information, shapes the product image, and ensures product safety.)		
Sales volume (Cumulative sales of a specific product within the last 30 days.)		

1.8 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the "greatest impact" and which one has the "least impact"?

Store attributes and attribute statements	Most important	Least important
24.Matching product description (The actual product received matches the description in the main picture, detail page, and video of the product sold on the online store.)		
Problem-solving (Returns, exchanges, reshipments, and refunds for unsatisfactory products.)		

Customized response (Not ready-made standardized reply templates.)		
Number of followers (The number of people who have followed this store.)		
Accurate delivery (Delivering the correct products in the correct quantities.)		
Product packaging (Packaging that conveys product information, shapes the product image, and ensures product safety.)		

1.9 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the “greatest impact” and which one has the “least impact”?

Store attributes and attribute statements	Most important	Least important
Credit level (The number of golden crowns, blue crowns, diamond and hearts, representing the level of credibility.)		
Ture delivery (Provide accurate delivery information. Do not enter a tracking number without actually delivering the item.)		
Product detail page (A series of pictures and text in the product link that provide detailed information about the product.)		
Product packaging (Packaging that conveys product information, shapes the product image, and ensures product safety.)		
Product price (The actual price after enjoying various discounts.)		
Product video (Product videos demonstrating and introducing products.)		

1.10 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the “greatest impact” and which one has the “least impact”?

Store attributes and attribute statements	Most important	Least important
Credit level (The number of golden crowns, blue crowns, diamond and hearts, representing the level of credibility.)		
Problem-solving (Returns, exchanges, reshipments, and refunds for unsatisfactory products.)		
Main picture (The main picture, located at the top of the product links, are displayed on the store homepage and platform		

search results.)	
Professionalism of services (Able to provide correct answers to customer inquiries.)	
Member benefit (Benefits of becoming a member, such as member discounts.)	
Service attitude (The attitude of the service employee when responding to customer inquiries.)	

1.11 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the “greatest impact” and which one has the “least impact”?

Store attributes and attribute statements	Most important	Least important
Number of followers (The number of people who have followed this store.)		
Member benefit (Benefits of becoming a member, such as member discounts.)		
Product meet description (Attributes that meet customers’ functional requirements for products, such as durability, reliability, safety, and ease of use.)		
Customer review (Various comments about the product or store by customers who have made purchases.)		
Delivery time (The waiting time from placing an order to the customer receiving the product.)		
Product condition (The product received is in good condition and undamaged.)		

1.12 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the “greatest impact” and which one has the “least impact”?

Store attributes and attribute statements	Most important	Least important
Store decoration (The homepage design of a store, such as webpage layout, store style, brand image display, etc.)		
Product variety (The number of product categories in the store and the number of product styles within each individual category.)		
Credit level (The number of golden crowns, blue crowns, diamond and hearts, representing the level of credibility.)		
Accurate delivery (Delivering the correct products in the correct quantities.)		

Product condition (The product received is in good condition and undamaged.)		
Overall product image (Apart from the best-selling items, the sales and reviews of other products are also good.)		

1.13 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the “greatest impact” and which one has the “least impact”?

Store attributes and attribute statements	Most important	Least important
Delivery time (The waiting time from placing an order to the customer receiving the product.)		
Credit level (The number of golden crowns, blue crowns, diamond and hearts, representing the level of credibility.)		
Customized response (Not ready-made standardized reply templates.)		
Sales volume (Cumulative sales of a specific product within the last 30 days.)		
Response speed (The waiting time required for customers to receive a response.)		
Credit level (Three dynamic ratings for each online store provided by Taobao: description accuracy, logistics service, and service attitude.)		

1.14 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the “greatest impact” and which one has the “least impact”?

Store attributes and attribute statements	Most important	Least important
Dynamic score (Three dynamic ratings for each online store provided by Taobao: description accuracy, logistics service, and service attitude.)		
Product catalog (Classification of various products for easy navigation and location of specific items.)		
Product video (Product videos demonstrating and introducing products.)		
Store decoration (The homepage design of a store, such as webpage layout, store style, brand image display, etc.)		
Number of followers (The number of people who have followed this store.)		
Professionalism of services		

(Able to provide correct answers to customer inquiries.)

1.15 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the “greatest impact” and which one has the “least impact”?

Store attributes and attribute statements	Most important	Least important
Store age (The number of years the store has been in business.)		
Product video (Product videos demonstrating and introducing products.)		
Product condition (The product received is in good condition and undamaged.)		
Problem-solving (Returns, exchanges, reshipments, and refunds for unsatisfactory products.)		
Product catalog (Classification of various products for easy navigation and location of specific items.)		
Sales volume (Cumulative sales of a specific product within the last 30 days.)		

1.16 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the “greatest impact” and which one has the “least impact”?

Store attributes and attribute statements	Most important	Least important
Product video (Product videos demonstrating and introducing products.)		
Product meet description (Attributes that meet customers’ functional requirements for products, such as durability, reliability, safety, and ease of use.)		
Main picture (The main picture, located at the top of the product links, are displayed on the store homepage and platform search results.)		
Product design (Product design in terms of function, appearance and materials, etc.)		
Delivery packaging (To ensure the safe transportation of the product with packaging that is shockproof, pressure-resistant, and collision-resistant.)		
Customized response (Not ready-made standardized reply templates.)		

1.17 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the “greatest impact” and which one has the “least impact”?

Store attributes and attribute statements	Most important	Least important
Problem-solving (Returns, exchanges, reshipments, and refunds for unsatisfactory products.)		
Response speed (The waiting time required for customers to receive a response.)		
Product detail page (A series of pictures and text in the product link that provide detailed information about the product.)		
Overall product image (Apart from the best-selling items, the sales and reviews of other products are also good.)		
Number of followers (The number of people who have followed this store.)		
Product design (Product design in terms of function, appearance and materials, etc.)		

1.18 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the “greatest impact” and which one has the “least impact”?

Store attributes and attribute statements	Most important	Least important
Product packaging (Packaging that conveys product information, shapes the product image, and ensures product safety.)		
Product introductions and recommendations (Answering customers’ product inquiries and recommending similar or complementary products.)		
Ture delivery (Provide accurate delivery information. Do not enter a tracking number without actually delivering the item.)		
Response speed (The waiting time required for customers to receive a response.)		
Product catalog (Classification of various products for easy navigation and location of specific items.)		
Main picture (The main picture, located at the top of the product links, are displayed on the store homepage and platform search results.)		

1.19 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the “greatest impact” and which one has the “least impact”?

Store attributes and attribute statements	Most important	Least important
Customer review (Various comments about the product or store by customers who have made purchases.)		
Product introductions and recommendations (Answering customers’ product inquiries and recommending similar or complementary products.)		
Store age (The number of years the store has been in business.)		
Credit level (The number of golden crowns, blue crowns, diamond and hearts, representing the level of credibility.)		
Number of followers (The number of people who have followed this store.)		
Delivery packaging (To ensure the safe transportation of the product with packaging that is shockproof, pressure-resistant, and collision-resistant.)		

1.20 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the “greatest impact” and which one has the “least impact”?

Store attributes and attribute statements	Most important	Least important
Product condition (The product received is in good condition and undamaged.)		
Product packaging (Packaging that conveys product information, shapes the product image, and ensures product safety.)		
Product variety (The number of product categories in the store and the number of product styles within each individual category.)		
Response speed (The waiting time required for customers to receive a response.)		
Delivery packaging (To ensure the safe transportation of the product with packaging that is shockproof, pressure-resistant, and collision-resistant.)		
Professionalism of services (Able to provide correct answers to customer inquiries.)		

1.21 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the “greatest impact” and which one has the “least impact”?

Store attributes and attribute statements	Most important	Least important
Service attitude (The attitude of the service employee when responding to customer inquiries.)		
Product catalog (Classification of various products for easy navigation and location of specific items.)		
Overall product image (Apart from the best-selling items, the sales and reviews of other products are also good.)		
Main picture (The main picture, located at the top of the product links, are displayed on the store homepage and platform search results.)		
Delivery time (The waiting time from placing an order to the customer receiving the product.)		
Delivery packaging (To ensure the safe transportation of the product with packaging that is shockproof, pressure-resistant, and collision-resistant.)		

1.22 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the “greatest impact” and which one has the “least impact”?

Store attributes and attribute statements	Most important	Least important

Sales volume (Cumulative sales of a specific product within the last 30 days.)	
Main picture (The main picture, located at the top of the product links, are displayed on the store homepage and platform search results.)	
Number of followers (The number of people who have followed this store.)	
Store type (A Tmall store or a regular Taobao store.)	
Product price (The actual price after enjoying various discounts.)	
Product variety (The number of product categories in the store and the number of product styles within each individual category.)	

1.23 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the “greatest impact” and which one has the “least impact”?

Store attributes and attribute statements	Most important	Least important
Professionalism of services (Able to provide correct answers to customer inquiries.)		
Customized response (Not ready-made standardized reply templates.)		
1Customer review (Various comments about the product or store by customers who have made purchases.)		
Product price (The actual price after enjoying various discounts.)		
Overall product image (Apart from the best-selling items, the sales and reviews of other products are also good.)		
Matching product description (The actual product received matches the description in the main picture, detail page, and video of the product sold on the online store.)		

1.24 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the “greatest impact” and which one has the “least impact”?

Store attributes and attribute statements	Most important	Least important
Dynamic score (Three dynamic ratings for each online store provided by Taobao: description accuracy, logistics service, and service attitude.)		
Platform image (A Tmall store or a regular Taobao store.)		
Product packaging		

(Packaging that conveys product information, shapes the product image, and ensures product safety.)		
Member benefit (Benefits of becoming a member, such as member discounts.)		
Overall product image (Apart from the best-selling items, the sales and reviews of other products are also good.)		
Store age (The number of years the store has been in business.)		

1.25 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the “greatest impact” and which one has the “least impact”?

Store attributes and attribute statements	Most important	Least important
Product introductions and recommendations (Answering customers’ product inquiries and recommending similar or complementary products.)		
Sales volume (Cumulative sales of a specific product within the last 30 days.)		
Professionalism of services (Able to provide correct answers to customer inquiries.)		
Product quality (Attributes that meet customers' functional requirements for products, such as durability, reliability, safety, and ease of use.)		
Overall product image (Apart from the best-selling items, the sales and reviews of other products are also good.)		
Product detail page (A series of pictures and text in the product link that provide detailed information about the product.)		

1.26 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the “greatest impact” and which one has the “least impact”?

Store attributes and attribute statements	Most important	Least important
Product design (Product design in terms of function, appearance and materials, etc.)		
Accurate delivery (Delivering the correct products in the correct quantities.)		
Professionalism of services (Able to provide correct answers to customer inquiries.)		
Delivery time (The waiting time from placing an order to the customer receiving the product.)		
Ture delivery		

(Provide accurate delivery information. Do not enter a tracking number without actually delivering the item.)		
Store age (The number of years the store has been in business.)		

1.27 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the “greatest impact” and which one has the “least impact”?

Store attributes and attribute statements	Most important	Least important
Customized response (Not ready-made standardized reply templates.)		
Product catalog (Classification of various products for easy navigation and location of specific items.)		
Member benefit (Benefits of becoming a member, such as member discounts.)		
Store age (The number of years the store has been in business.)		
Product variety (The number of product categories in the store and the number of product styles within each individual category.)		
Product detail page (A series of pictures and text in the product link that provide detailed information about the product.)		

1.28 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the “greatest impact” and which one has the “least impact”?

Store attributes and attribute statements	Most important	Least important
Product video (Product videos demonstrating and introducing products.)		
Customer review (Various comments about the product or store by customers who have made purchases.)		
Store type (A Tmall store or a regular Taobao store.)		
Product detail page (A series of pictures and text in the product link that provide detailed information about the product.)		
Accurate delivery (Delivering the correct products in the correct quantities.)		
Response speed (The waiting time required for customers to receive a response.)		

1.29 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the “greatest impact” and which one has the “least impact”?

Store attributes and attribute statements	Most important	Least important
Product price (The actual price after enjoying various discounts.)		
Store decoration (The homepage design of a store, such as webpage layout, store style, brand image display, etc.)		
Response speed (The waiting time required for customers to receive a response.)		
Service attitude (The attitude of the service employee when responding to customer inquiries.)		
Product meet description (Attributes that meet customers’ functional requirements for products, such as durability, reliability, safety, and ease of use.)		
Store age (The number of years the store has been in business.)		

1.30 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the “greatest impact” and which one has the “least impact”?

Store attributes and attribute statements	Most important	Least important
Product catalog (Classification of various products for easy navigation and location of specific items.)		
Product quality (Attributes that meet customers' functional requirements for products, such as durability, reliability, safety, and ease of use.)		
Product design (Product design in terms of function, appearance and materials, etc.)		
Credit level (The number of golden crowns, blue crowns, diamond and hearts, representing the level of credibility.)		
Matching product description (The actual product received matches the description in the main picture, detail page, and video of the product sold on the online store.)		
Store type (A Tmall store or a regular Taobao store.)		

1.31 After you complete a purchase from a Taobao store, what factors contribute to a positive impression of the store? Among the following six factors, which one has the “greatest impact” and which one has the “least impact”?

Store attributes and attribute statements	Most important	Least important
Store decoration (The homepage design of a store, such as webpage layout, store style, brand image display, etc.)		
Product price (The actual price after enjoying various discounts.)		
Delivery packaging (To ensure the safe transportation of the product with packaging that is shockproof, pressure-resistant, and collision-resistant.)		
Problem-solving (Returns, exchanges, reshipments, and refunds for unsatisfactory products.)		
Delivery time (The waiting time from placing an order to the customer receiving the product.)		
Store type (A Tmall store or a regular Taobao store.)		

Section 2. What are your online shopping habits?

2.2 How often do you shop on Taobao?

○ Less than once a month
○ 1-3 times a month
○ 1-2 times a week
○ More than twice a week

2.2 What is your approximate total monthly spending on Taobao?

○ 1-199 yuan
○ 200-499 yuan
○ 500-999 yuan
○ 1000-1999 yuan
○ 2000-4999 yuan
○ 5000-9999 yuan
○ 10,000 yuan or more

Section 3. Personal Information

3.1 What is your gender?

○ Male
○ Female

3.2 Which age range do you fall into?

○ 17 and under
○ 18-25
○ 26-35

○ 36-45
○ 46-55
○ 56-65
○ 66 and over

3.5 What is your highest level of education?

○ Below high school
○ High school/vocational school
○ Associate degree
○ Bachelor’s degree
○ Graduate degree

3.6 What is your monthly income (or disposable income) in yuan?

○ 0-1,999 yuan
○ 2,000-4,999 yuan
○ 5,000-9,999 yuan
○ 10,000-19,999 yuan
○ 20,000-49,999 yuan
○ Above 50,000 yuan

3.5 Employment status

○ Student
○ Housewife
○ Retired
○ Unemployed
○ Full-time
○ Part-time
○ Freelancer
○ Self-employed

C3. Survey 3: Survey on varying effects of various chatbot service quality dimensions on customers' service choices

Section 1: Which kind of customer service do you prefer?

(1) Buying low-involvement products. When buying convenience necessities such as toothpaste, towels, detergent and napkins, which kind of customer service do you prefer in the following purchase stages?

Purchase stage	Sub-stage of purchase	Chatbot service	Human service	Either	Neither
Pre-purchase stage	Product information browsing and consulting	o	o	o	o
	Retailer choice	o	o	o	o
	Delivery time and logistics issues	o	o	o	o
During purchase stage	Add to shopping cart	o	o	o	o
	Order and pay	o	o	o	o
Post-purchase stage	Product quality check and feedback	o	o	o	o
	Product use consultation and guidance	o	o	o	o
	Exchange and return goods	o	o	o	o
	Product maintenance and other after-sales services	o	o	o	o

(2) Buying high-involvement products. When buying electronic products such as laptops, mobile phones, smartwatches and learning machines, which kind of customer service do you prefer in the following purchase stages?

Purchase stage	Sub-stage of purchase	Chatbot service	Human service	Either	Neither
Pre-purchase stage	Product information browsing and consulting	o	o	o	o
	Retailer choice	o	o	o	o
	Delivery time and logistics issues	o	o	o	o
During purchase stage	Add to shopping cart	o	o	o	o
	Order and pay	o	o	o	o
Post-purchase stage	Product quality check and feedback	o	o	o	o
	Product use consultation and guidance	o	o	o	o
	Exchange and return goods	o	o	o	o
	Product maintenance and other after-sales services	o	o	o	o

Section 2. What do you think of the customer service robot?

2.1 I feel I am very clear on how to ask questions to the chatbot service.

○ Strongly Disagree
○ Disagree
○ Somewhat Disagree
○ Neutral
○ Somewhat Agree
○ Agree
○ Strongly Agree

2.2 The chatbot can understand the questions I asked very well.

○ Strongly Disagree
○ Disagree
○ Somewhat Disagree
○ Neutral
○ Somewhat Agree
○ Agree
○ Strongly Agree

2.3 Getting responses from the chatbot was very fast.

○ Strongly Disagree
○ Disagree
○ Somewhat Disagree
○ Neutral
○ Somewhat Agree
○ Agree
○ Strongly Agree

2.4 The information provided by the chatbot was relevant to the questions I asked.

○ Strongly Disagree
○ Disagree
○ Somewhat Disagree
○ Neutral
○ Somewhat Agree
○ Agree
○ Strongly Agree

2.5 I would consider consulting the chatbot in more situations in the future.

○ Strongly Disagree
○ Disagree
○ Somewhat Disagree
○ Neutral
○ Somewhat Agree
○ Agree
○ Strongly Agree

2.6 I found it freer to consult a chatbot than a human when shopping online.

○ Strongly Disagree
○ Disagree

○ Somewhat Disagree
○ Neutral
○ Somewhat Agree
○ Agree
○ Strongly Agree

2.7 I was able to obtain the information I wanted from the chatbot without any delay.

○ Strongly Disagree
○ Disagree
○ Somewhat Disagree
○ Neutral
○ Somewhat Agree
○ Agree
○ Strongly Agree

2.8 The chatbot was friendly, polite and respectful to me.

○ Strongly Disagree
○ Disagree
○ Somewhat Disagree
○ Neutral
○ Somewhat Agree
○ Agree
○ Strongly Agree

2.9 I found consulting the chatbot was a good approach to shopping without disturbance.

○ Strongly Disagree
○ Disagree
○ Somewhat Disagree
○ Neutral
○ Somewhat Agree
○ Agree
○ Strongly Agree

2.10 When consulting the chatbot service, I have no idea how to phrase my questions.

○ Strongly Disagree
○ Disagree
○ Somewhat Disagree
○ Neutral
○ Somewhat Agree
○ Agree
○ Strongly Agree

2.11 It was quite difficult to ask further questions to the chatbot. (r)

○ Strongly Disagree
○ Disagree
○ Somewhat Disagree
○ Neutral
○ Somewhat Agree
○ Agree

○ Strongly Agree

2.12 When I sent an inquiry to the chatbot, I felt like my question was resolved immediately.

○ Strongly Disagree
○ Disagree
○ Somewhat Disagree
○ Neutral
○ Somewhat Agree
○ Agree
○ Strongly Agree

2.13 In the future, I would probably prefer to switch from the chatbot to human services as much as possible.

○ Strongly Disagree
○ Disagree
○ Somewhat Disagree
○ Neutral
○ Somewhat Agree
○ Agree
○ Strongly Agree

2.14 The chatbot provided me with a relaxed shopping experience.

○ Strongly Disagree
○ Disagree
○ Somewhat Disagree
○ Neutral
○ Somewhat Agree
○ Agree
○ Strongly Agree

2.15 The chatbot made me feel like it was willing to help me with my questions.

○ Strongly Disagree
○ Disagree
○ Somewhat Disagree
○ Neutral
○ Somewhat Agree
○ Agree
○ Strongly Agree

2.16 The chatbot was very slow in responding to my inquiries.

○ Strongly Disagree
○ Disagree
○ Somewhat Disagree
○ Neutral
○ Somewhat Agree
○ Agree
○ Strongly Agree

2.17 The chatbot was very efficient in responding to my inquiries.

○ Strongly Disagree
○ Disagree
○ Somewhat Disagree
○ Neutral
○ Somewhat Agree
○ Agree
○ Strongly Agree

Section 3. Personal Information

3.1 What is your gender?

○ Male
○ Female

3.2 Which age range do you fall into?

○ 17 and under
○ 18-25
○ 26-35
○ 36-45
○ 46-55
○ 56-65
○ 66 and over

3.7 What is your highest level of education?

○ Below high school
○ High school/vocational school
○ Associate degree
○ Bachelor's degree
○ Graduate degree

3.8 What is your monthly income (or disposable income) in yuan?

○ 0-1,999 yuan
○ 2,000-4,999 yuan
○ 5,000-9,999 yuan
○ 10,000-19,999 yuan
○ 20,000-49,999 yuan
○ Above 50,000 yuan

3.5 Where are you from? [City]

3.6 Employment status

○ Student
○ Housewife
○ Retired
○ Unemployed
○ Full-time
○ Part-time
○ Freelancer

○ Self-employed

3.7 How often do you shop online? [Single choice]

○ Less than once a month
○ 1-3 times a month
○ 1-2 times a week
○ More than twice a week