UNIVERSIDAD DE GRANADA

Return Avoidance in Online Shopping: The Role of Return Credits and Purchase-risk Notices

Huaming LIU

Programa de Doctorado en Ciencias Económicas y Empresariales

31/08/2023

Universidad de Granada

Departamento de Organización de Empresas I

Programa de Doctorado en Ciencias Económicas y Empresariales

Return Avoidance in Online Shopping: The Role of Return Credits and Purchase-risk Notices

Doctoral Thesis

Huaming LIU

Supervisor:

Prof. Francisco José Martínez-López

Granada, 2023

Editor: Universidad de Granada. Tesis Doctorales
Autor: Huaming Liu
ISBN: 978-84-1195-177-7
URI: https://hdl.handle.net/10481/89446

ABSTRACT

Online shopping is increasingly becoming a global phenomenon. However, with the boom of online shopping, a large number of products returned by customers are redirected to e-retailers. These returns bring serious negative consequences. For example, mass returns affect an e-retailer's costs, operations, reputation, and more. E-retailers are looking for approaches to reduce the negative consequences caused by online returns. This thesis hopes to deal with these negative consequences by developing return avoidance. Specifically, this thesis mainly involves two studies: return credits and purchase-risk notices (PRNs). Through these two studies, this thesis explores the effectiveness and side effects of return credits and PRNs in return avoidance.

The first study discusses the role of return credits in return avoidance. As one of the most common reasons for online returns, returns for satisfaction-related reasons are receiving a lot of attention. This study attempted to explore the use of return credits (maximum free return amounts) to reduce satisfaction-related returns. Unlike the full or partial return policies mentioned in the previous literature, this novel approach has its characteristics and roles. At the same time, the study also explored the side effects of using return credits. In terms of experimental design, this study employed one-factor (return credit: high vs. low) between-subjects scenario experiment. Analysis of variance (ANOVA) was used to test hypotheses. The results of this study revealed that the use of return credits significantly deters satisfaction-related returns, with high and low credit amounts having a similar effect on returns. In addition, the results of this study also showed that the side effects caused by high credit amounts were weaker than those with low amounts.

The second study discusses the role of PRNs in return avoidance. Due to the limitations inherent in online shopping, what customers see online and what they receive may not match. Online returns caused by this mismatch are an important reason for customers to initiate returns. This study discusses the use of PRNs by e-retailers for possible mismatches as a pre-emptive action to avoid returns. According to the two stages of pre-purchase and post-purchase, this study conducted two one-factor (purchase-risk notice: presence vs. absence) scenario experiments. The study examined the pre-purchase and post-purchase effects of PRNs separately. One-way ANOVA was used to test hypotheses. The results of two studies found that the use of

PRNs can avoid returns without negatively impacting consumers' purchase intention. Additionally, using PRNs can make consumers more tolerant of slight mismatches, attracting more repurchases, and reducing consumer dissatisfaction and regret about purchase decisions.

In conclusion, the studies in this thesis are important and valuable. On the one hand, the two studies broaden the academic research in the field of return avoidance, and subsequent research can continue to explore return avoidance based on these studies. On the other hand, the findings in this thesis provide tools for retailers to reduce online returns. These two return avoidance measures can not only effectively reduce returns but also have fewer side effects. Both future academic research and e-retailers can benefit from the research findings in this thesis.

TABLE OF CONTENTS

List of abbreviations

Abbreviations	Meaning	Page
3PL	Third-party logistics provider	62
AI	Artificial Intelligence	2
ANOVA	Analysis of variance	11
AR	Augmented reality	7
BORIS	Buy-online-and-return-in-store	61
C/D model	Confirmation/Disconfirmation model	184
CDP	Collection and delivery point	63
E-WOM	Electronic word of mouth	38
MBG	Money back guarantee	27
PRN	Purchase-risk notice	10
RMP	Return management practices	147
VR	Virtual reality	7

Acknowledgments

This is my fifth year in Spain. For five years, I spent most of my time in my room. However, this does not mean that I have no contact with the outside world. These connections provided "three kinds of support" for my doctoral research career: academic support, life support, and emotional support. In particular, I have obtained "three keys" from my supervisor and two colleagues in terms of academics: awareness of topic selection, the spirit of questioning, and critical thinking. I would like to express my sincere gratitude to my professors, relatives, colleagues, and friends who helped me in Spain.

First of all, I would like to thank my supervisor, Prof. Francisco J. Martínez-López (Paco). Academically, you have many valuable qualities. For example, you always approach research with rigor and constantly strive for the highest academic standards. Your excellent record in article publishing is an example for me to learn from. Of all your qualities, what impresses me the most is your excellent academic sensitivity. You can always accurately judge the value of an academic topic. In the process of academic research, you gave me the first key to academic research: awareness of topic selection. Awareness of topic selection is critical because it is directional in academic writing. I believe that the directional efficiency is greater than the operational efficiency. Only if the research direction is selected correctly, the work done will be meaningful. Also, I learned how to develop academic ideas from your revision comments on other articles. These brilliant insights made me love academic writing. Although I am still not good at it at the moment, I will continue to learn how to do it. In the process of writing my doctoral thesis, you helped me determine the framework of the thesis and suggested revisions to the content. Here, I express to you the highest respect and the sincerest thanks!

Second, I would like to thank the reviewers and editors of two academic journals: one is Electronic Commerce Research, another one is Information & Management. The editors of these two journals provided valuable suggestions and guidance during the revision process of the articles, so that my articles can be presented better. The opportunity to publish in your journals has enabled me to share my research findings with scholars with similar research interests. Also, I would like to thank all the reviewers. Your expertise and in-depth review have had a positive

impact on the quality of the articles. Some of your constructive suggestions have been incorporated into the thesis. Your review suggestions have enabled me to better refine my research and make it more academically valuable. Your objectivity, fairness, rigor, and professionalism are all worthy of my admiration. Here, I would like to express my sincerest thanks and highest respect to them.

Third, I would like to thank my two colleagues, Yangchun Li and Changyuan Feng. They are rigorous in academics, sincere to friends, and diligent in their careers. We had an unforgettable Spanish time together. Starting in late 2019, we have been through the years of COVID-19 together. Give each other personal care and emotional support during lockdown. Under the pressure of graduation and the risk of the epidemic, we decompose the pressure through sports, dinners, and walks. For example, we often play basketball and football to balance our body and mind. Sometimes, we also go to the Sierra Nevada near our home to enjoy the sunset. Academically, they are also my inspirers, supervisors and companions. From Yangchun, I got the second academic key - the spirit of questioning. For everything around him, Yangchun always dares to question, is willing to question, and is good at questioning. This is especially important in academia because it is difficult to see problems without questioning them. Ask one more question about everything, and the world will become more exciting. I thank Yangchun for opening a door for me to observe things and find problems by teaching me to question. From Changyuan, I got the third academic key - critical thinking. Changyuan can always look at all viewpoints critically, and can always find many interesting problems. It's an amazing skill because countless people are losing the ability to think about thinking itself. Critical thinking is the science of how to think about thinking itself. By criticizing one's own thinking, the depth, breadth, and speed of thinking can be improved. I thank Changyuan for providing me with a magic weapon to solve problems by teaching me critical thinking. In short, Yangchun and Changyuan and I not only grew up together in Spain, we also have a profound friendship because of this. In terms of academics, Yangchun and Changyuan often share learning resources, research skills and publishing experience with me, which promotes my academic growth. Thank you Yangchun and Changyuan!

Here, I would also like to thank my family. Thanks to my father Liu Jincai, you let me be an upright person and a person useful to society. This is what I have been taught from you all along. This belief has always been in my heart and has never

lost its luster. Now, although I still have many shortcomings, I am working hard towards this direction and goal. Hope I can achieve something in the future. Thanks to my mother Wu Tingying. Over the years, I have been switching between reading and working. Every time I quit my job, I actually took a big risk. However, you have always supported all my choices and carried a lot of pressure. As a mother, you have done all the best things you can do. Thank you! Thanks to my younger sister Liu Yang and brother-in-law Zhang Shan for helping me take care of this family all these years. Without your support, I couldn't achieve my dream. In any case, I should go back and take on my own responsibilities sooner. In short, the support of my family is my driving force. Thanks to my family! There is a saying in the ancient Chinese book "The Doctrine of the Mean": "Knowing shame is close to courage", "Studying is close to knowledge", and "Practice is close to benevolence". I hope to start a new journey after graduation and repay my family with my achievements.

In the acknowledgments, I cannot list all the people who have influenced and helped me. I express my sincerest thanks to you all!

Chapter I Introduction

1.1 Background of Study

With the rapid popularity of online shopping, academic research on e-commerce has attracted much more attention from scholars (Abdulla et al., 2019; Tsagkias et al., 2021). E-commerce is considered one type of business transaction in which buying and selling takes place over the Internet (Kalakota & Whinston, 1996; Xie & Wang, 2021). In online transactions, e-commerce could employ some advanced technologies such as electronic communication and digital information processing to redefine the value-creating relationship (Gupta, 2014). Compared with the traditional business model, e-commerce has some unique and useful capabilities that traditional business models do not have, and is considered to be able to break the constraints of time and space, thereby facilitating consumer participation and collective customization globally (Xie & Wang, 2021). With just a few clicks of the mouse, online consumers can easily get the product information, price changes, promotion information, online reviews, etc. with the other consumers around the world at any time. It can be seen that e-commerce has some impressive characteristics, such as spatial-temporal flexibility, real-time, and convenience. Moreover, it is rapidly evolving towards intelligence (Soni, 2020; Ucuzoglu & Hagel III, 2020).

Compared with traditional business models, e-commerce is significantly different in several aspects. First of all, e-commerce can complete remote transactions through the Internet and personal computing devices (such as desktop computers, laptops, smartphones, and tablets), so that it is no longer limited by the geographical location and space of physical stores like traditional businesses models (Al-Lami & Alnoor, 2021). E-commerce model bring benefits for e-retailers and it means that e-retailers can interact, collaborate and transact with global consumers through online channels, thus having the opportunity to develop a global market. Secondly, e-commerce is considered to have the advantages of convenience, high efficiency and low-cost (Mofokeng, 2021). For online customers, with the help of advanced network communication and mobile payment technologies, global customers can use online stores, virtual shopping carts and remote payments to complete the entire remote transaction. Online customers can buy the products or services they want without having to go to a physical store as before, saving online customer's time and efforts. Moreover, online customers have access to a wider selection of products because they can switch between e-retailers more easily. For e-retailers, in addition to being able to

reach a wider market, 24/7 access, reduced operating costs, and access to consumer data are also very attractive. In order to comply with the trend of online transactions and gain competitive advantages, more and more traditional retailers have introduced e-commerce (Mofokeng, 2021). In addition, benefiting from modern technologies, e-commerce can also provide highly personalized products and services based on online consumers' needs, preferences, purchase history, and shopping budget (Bawack et al., 2022; Chandra et al., 2022). In particular, with the development of technologies such as big data, cloud computing and artificial intelligence (AI) technology, e-commerce is becoming increasingly intelligent (Soni, 2020; Ucuzoglu & Hagel III, 2020). Technological development provides unlimited potential for e-commerce to better serve online customers. For instance, by collecting, sorting, and analyzing consumer online data (including personal information, purchasing preferences, behavior patterns, and individual hobbies, etc.), e-retailers can make consumer profiles as their marketing tools. Through consumer profiles, e-retailers could better understand their target consumer groups to provide better products and services (Zhang & Huang, 2022). Benefiting from its unique competitive advantages, e-commerce has shown a strong growth momentum globally. In 2021, e-commerce accounted for about 19.6% of total global retail sales, and it is estimated that four years later, the online retail segment may account for nearly 25% of global retail sales (Statista, 2023a). Overall, the growth and innovation in the e-commerce industry presents enormous opportunities for global commerce.

However, things always have two sides. The convenience and ease of online shopping reduced consumers' perception of purchasing risk, which on the one hand encourages the growth of online retailing, but on the other hand may force e-retailers to deal with massive and costly online returns (Walsh & Möhring, 2017; Yang et al., 2022). First, since online consumers cannot directly touch and experience products (Wood, 2001), they may face many uncertainties (e.g., product uncertainty and quality uncertainty) when making shopping decisions in remote transactions. Previous literature indicated that product uncertainty (Hong & Pavlou, 2014) and lack of product touch (Shulman et al., 2011; Wood, 2001) lead to a large number of online returns. Second, since shopping is an online transaction, a complete purchase journey will be divided into several parts, which may affect the integrity of customer's shopping experience (Chandra & Verma, 2023). Each shopping stage may have an impact on customer expectations, satisfaction, and purchase decisions, which will

ultimately affect customers' online returns. Third, another important challenge faced by e-retailers is logistics and distribution. Because various accidents may occur during the delivery process, such as delays, damage or loss (Drew, 2022; Frei et al., 2022). If a product exhibits these problems during delivery, the customer may initiate the return process. Fourth, since online customers cannot inspect and experience products before receiving them, they may encounter counterfeit and shoddy products. Counterfeit and shoddy products could be sold through remote transactions, and customers cannot judge the authenticity and quality of products before receiving them, thus bringing lots of shopping risks to online consumers (Kennedy, 2020). All these issues or disadvantages above could make a serious consequence for e-retailers - online returns.

Online return is generally defined as a customer-initiated activity that involves returning a product previously purchased online by the customer to its original source (Ambilkar et al., 2022) and about 73% of e-retailers consider online returns to be a moderate to serious problem for their e-commerce business (Conley, 2023). Previously, 8% to 10% of products purchased in brick-and-mortar retail stores were returned (Kiniulis, 2021). However, the return rate in online shopping is now much higher than in brick-and-mortar stores. Specifically, approximately 20.8% of online purchases are returned to e-retailers (NRF, 2022a). Even, the online return rate of certain product categories can be as high as 45% (Statista, 2023). Online returns can be a major headache for e-retailers - slashing profit margins (Pei & Paswan, 2017), lowering conversion rates and ultimately threatening competitiveness (SaleCycle, 2020). In view of the importance and seriousness of online returns, both commercial practice and academic research are exploring issues related to online returns. Previous studies hoped to reduce online returns by exploring the use of return policies, information technology, quality control, service optimization, etc. Although many of these measures have been proven to be effective and have been widely used in commercial practice, there are still many problems to be solved. In the next section, problems with online returns will be discussed.

1.2 Problem Statement

The continued growth of e-commerce has also been accompanied by a rapidly increasing return rate for products purchased online (Ahsan & Rahman, 2021), and online returns could bring negative consequences for e-retailers. For example, online returns can have a serious impact on a retailer's costs (Gustafsson et al., 2021; Nel &

Badenhorst, 2020; Zhang et al., 2023), profits (Comstock, 2020; Yang et al., 2022; Zhou & Hinz, 2016), operations (Yang et al., 2022), reputation (Waldorf, 2021), customer trust (Oghazi et al., 2018; Rintamäki et al., 2021a; Walsh & Brylla, 2017), and more. Moreover, a large number of online returns is also a threat to the ecological environment (Li et al., 2021). Despite the high return rate for online shopping and the serious consequences of online returns, e-tailers have not yet succeeded in effectively managing product returns to retain their customers (Reagan, 2019). Facing the challenges brought by online returns (Deloitte Consulting, 2019), it is particularly important and urgent to find approaches to avoid online returns. However, there is still a lack of low-cost and less side-effect return avoidance methods. The research in this thesis attempts to address this problem.

First, online returns are costly in terms of time, money, and effort. According to the return management process, there are several steps or activities between the customer initiating the return and the customer receiving the refund. These intermediate activities include, but are not limited to: package delivery, return inspection, return sorting, repackaging, repairs, stock changes, etc. Each step takes a lot of time. Take return inspection as an example. E-retailers often need to arrange for employees to manually inspect each returned product and evaluate these products, which means online returns are a time-consuming activity. Returns processing could be also expensive. During the returns process, e-retailers may need to bear some additional costs such as return shipping, repackaging, and restocking (Li et al., 2021; Minnema et al., 2018). To deal with a returned product, it could cost 66% of the price of the product (Hartmans, 2022a). In addition, the product being returned will be evaluated by employees for returns inspection. Some products may be damaged or no longer suitable for resale, these products may be destroyed and landfilled (Guide, 2000; Li et al., 2021; Lindsey, 2016). As a result, these online returns impose significant costs on e-retailers (Samorani et al., 2019; Yan & Pei, 2019). In particular, many opportunists and fraudulent returners could abuse the lenient return policies offered by e-retailers (Harris, 2010), such as returning items immediately or frequently after their purchase (Akturk et al., 2021). Such behavior increases cost burdens for e-retailers and may have an extremely negative impact on e-retailers' overall profitability (Yang et al., 2022; Zhou & Hinz, 2016). It’s said that fraudulent returns could reduce the overall profitability of e-retailers by 10%–20% (Zhang et al., 2023). In fact, online returns could be expensive for both customers and e-retailers.

Depending on the returns policies of some e-retailers, online customers who initiate returns may be charged for the return even though they can request a full refund (Yang et al., 2022). Some e-retailers have started partnering with insurance agencies to offer return insurance for online customers. For example, previous literature indicated that the purchase of return shipping insurance has become a necessary guarantee for customers to shop online (Fan & Chen, 2020). Additionally, if a customer purchases a product that requires special packaging, such as a vanity mirror, the customer may also be charged for the special packaging. Finally, processing online returns requires a lot of extra effort from e-retailers. To deal with online returns, e-retailers may have to set up many steps, such as return inspection, sorting, repackaging, etc. These steps not only consume time, but effort as well. Because most of these activities cannot be automated and need to be handled manually. It can be seen that all of this takes a lot of time, money and effort.

Second, online returns could bring enormous pressure on e-retailers' day-to-day operations (Russo & Cardinali, 2012). The process of managing online returns is seen as a strategic activity spanning different functions within and between companies (Russo & Cardinali, 2012), so managing a returns system could be a highly complex challenge for any retailer. The logistics process for online returns may involve multiple origins (customers requesting a return may live in different parts of the city), internal participants (e.g. R&D, production, marketing, returns processing centers, etc.) and external partners (e.g. raw material suppliers, logistics service providers, etc.), which could complicate e-retailers' day-to-day operations (Cullinane & Cullinane, 2021). At the same time, e-retailers also need to arrange additional labors to carefully check the returned products, which is the basis for classifying the returned products (Ng et al., 2013). After receiving a returned product, e-retailers need advance a series of meticulous and costly activities to advance additional steps in returns management, such as inspecting the product, documenting the reason for return, repackaging, reshelving or disposing of the returned product (Rogers et al., 2002). For example, a product returned by a customer may be damaged, or even the product that was not originally purchased by the customer (Rintamäki et al., 2021a). Retailers have to conduct very careful inspections on all returned products, so retailers need to have excellent returns management capabilities to meet these challenges (Ambilkar et al., 2022b). Since e-retailers spend a lot of time and energy dealing with return issues, this

will undoubtedly disrupt and affect the normal operations of e-retailers. So, these activities will bring great pressure to the daily operation of e-retailers.

Third, issues with online returns could negatively impact an e-retailer's reputation (Waldorf, 2021). Reputation is considered to be a valuable intangible asset accumulated over a long period of time, and it represents the degree of trust, recognition and respect customers have for a company or brand (Fombrun & Shanley, 1990; Marcellis-Warin & Teodoresco, 2012). Reputation is critical for e-retailers, whether in-store buying or e-commerce buying. Previous research showed that a good reputation can bring many benefits for companies, such as value creation, profitable growth, and sustainable competitive advantage (Marcellis-Warin & Teodoresco, 2012). However, severe online returns can threaten an e-retailer's reputation. If an e-retailer receives frequent return requests from customers, it may be questioned that the product is of poor quality. A retailer's reputation can be damaged by the quality of the products it sells. The damage of reputation can also come from how the e-retailer handles online returns. If an e-retailer has problems with returns processing, such as processing delays, customers may question the retailer's overall service quality. Additionally, when customers choose to return a product, they are more likely to post their online reviews, and these reviews are more negative than if they did not return the product (Sahoo et al., 2018). In this case, the reputation of the e-retailer or the product may suffer even more damage and these negative feedbacks could spread quickly and influence the purchasing decisions of other potential customers.

Fourth, studies pointed out that online returns can have serious negative impacts on the environment (Dutta et al., 2020; Li et al., 2021). These negative impacts may come from several aspects. 1) Online returns often require logistics when the product is transferred from the customer to the e-retailer. This involves collecting returned products from customers and returning them to the retailer or other location claimed by the e-retailer (Rogers et al., 2002). As a result, e-retailers need to arrange extra shipping, which means more fuel consumption and greenhouse gas emissions (Tian & Sarkis, 2022). 2) After receiving the product, the customer will open the package to check the product. They need to check whether the product is what they want to buy and the quality of the product. This means that many returned products have been unpacked before being returned. If the customer needs to initiate a return, these products need to be repackaged and processed (NetSuite.com, 2021). Repackaging may require additional paper, plastic and energy consumption. 3) Some

returned products (e.g., food, pharmaceuticals, cosmetics, etc.) may not be resalable and require handling. This can involve waste disposal and landfills, which can also have negative effects on the environment (El-Fadel et al., 1997; Lindsey, 2016). A startling statistic comes from Optoro, which estimates that around 600 million pounds of product end up in landfills every year (Hartmans, 2022a). Destroying such a large number of returned products will not only bear high economic costs, but also bring negative impacts on the environment.

In response to high return rates, e-retailers have tried different approaches. For example, some e-retailers have implemented restrictive return policies aimed at reducing product returns (Janakiraman & Ordóñez, 2012; Petersen & Kumar, 2009). However, other studies illustrated that restrictive return policies lead to lower sales (Oghazi et al., 2018; Pei et al., 2014) and customer dissatisfaction (Janakiraman et al., 2016). In view of the serious consequences of online returns, previous studies have paid great attention to the problem of online returns and tried to find effective solutions to reduce online returns. Previous studies discussed the factors influencing the return rate from the perspectives of consumer characteristics (e.g., Chen et al., 2023; Makkonen et al., 2021), behavior patterns (e.g., Robertson et al., 2020; Seo et al., 2016), purchase motivations (e.g., Seo et al., 2016), and decision-making processes (e.g., Zhang et al., 2022) to understand the reasons and patterns of online returns. These studies help provide a theoretical basis for e-retailers to develop a returns management strategy. Rogers et al. (2002) indicated that avoiding returns is the best way to reduce the number and cost of returns. Therefore, e-retailers should explore more effective tools of return avoidance. Another literature indicated that avoiding returns is a key part of the returns management process, including activities to prevent and eliminate causes of returns, which provides inspiration for exploring ways to avoiding returns.

Currently, e-retailers have taken a number of measures to prevent or reduce online returns. Some of these e-retailers have implemented preventive avoidance measures. This preventative avoidance is designed to minimize the possibility of consumer's return requests. For example, some e-retailers in the fashion industry are using digital product try-on technology. In particular, technologies such as augmented reality (AR) and virtual reality (VR) have started to be heavily used in the fashion industry. This new type of technology is especially important because it can help customers reduce uncertainty during the shopping process. It's said that the digital

product try-on technology can reduce return costs associated with mismatches by up to 80% (Gustafsson et al., 2021). Additionally, e-retailers can provide online customers with clearer product descriptions (for example, how to assemble and use the product) to help customers obtain more product information and make better purchasing decisions (Hellemann & Brettel, 2016). In addition to preventive avoidance measures, another is that e-retailers try to prevent customers from returning products or encourage customers to keep purchased products after customers have made a purchase decision. After a customer receives a product, they may return it for different reasons (for example, not being satisfied with the product and thus initiating a return). However, online customers may change their decision if the e-retailer implements return avoidance measures. For example, an e-retailer may offer incentives such as discounts to customers who keep their products instead of returning them (Pymnts, 2021). Some tools, previously used as customer loyalty programs, can also be used to encourage customers to keep their purchases and reduce returns. Despite efforts by e-commerce managers and academics to identify the determinants of customer's return behavior, few studies investigated the effectiveness of tools explicitly designed to reduce customer's return rates (Walsh & Möhring, 2017). And, the current return avoidance measures are still not rich, and there is a lack of low-cost and less side-effect return avoidance measures. This thesis attempts to explore the effects of return credits and purchase-risk notices on online returns to address this problem.

1.3 Research Questions and Research Objectives

1.3.1 Research Questions

As mentioned in the previous section, the problem of online returns in e-commerce is both important and serious (Hjort et al., 2019). Finding a low-cost and effective return avoidance method is an important issue that many scholars are trying to address. Despite efforts by e-commerce managers and academics to identify the determinants of customers' return behavior, few studies investigated the effectiveness of tools aimed at reducing customer return (Walsh & Möhring, 2017). Based on previous research, this thesis aims to explore the effectiveness and side effects of two returns avoidance tools: return credits and purchase-risk notices. These two returns avoidance

tools have been neglected and unexplored by previous studies and may yield important theoretical contributions and practical implications.

(1) Return credits

Reasons for an online shopper to return a product could be related to factors such as product quality, delivery delay, change of mind (Dopson, 2021). It is common that products may be returned even if they have no functional or cosmetic defects, etc. Customers could initiate a return because they are just not satisfied with the product they purchased. It's reported that a significant portion of online returns are for reasons related to consumer satisfaction (Li & Choudhury, 2021). So, satisfaction-related returns deserve more academic attention. According to Ferguson et al. (2006), satisfaction-related returns are "products that are returned by consumers to retailers with no functional or cosmetic defect" (p. 376). Since such returns make up a large portion of customers' online returns, exploring how to avoid them can significantly reduce the overall volume of online returns. This is extremely valuable for e-retailers. Therefore, it is necessary and critical to explore how e-retailers reduce satisfaction-related returns. However, previous literature on reducing satisfaction-related returns is still insufficient. Previous literature suggested that returns can be reduced by making returns management practices more restrictive (Janakiraman et al., 2016). Yet, most previous research has focused on partial or no refunds to avoid returns. This method (i.e., partial or no refunds) may not be suitable for online returns because customers who shop online cannot actually touch the product until it is received.

This thesis introduces a new approach to deter satisfaction-related returns using return credits. In this study, the return credit is the maximum amount a customer can return for free within a certain period of time. From current returns practices, the return related to satisfaction takes a large part of total returns, which means that the maximum amount returned by a customer may exceed this amount. Under the rule of this new measure (return credits), if a customer's online return total exceeds this amount, the customer will be charged a return fee or be prohibited from returning the item. The use of return credits as a return avoidance measure is new practice in online business and this method has not been thoroughly researched before. It's not clear whether and how e-retailers could use this approach (return credits) to deter online returns. Specifically, this study aims to explore whether and how return credits could

reduce satisfaction-related returns, and the side effects of return credits will also be examined in this study.

(2) Purchase-risk notices

In this study, the role of purchase-risk notices (PRN) in online returns will be examined. PRN is a preemptive method to risk communication, and this method aims to anticipate some purchasing risks or negative outcomes through the usage of preventive, avoidable or warning notifications (Spitzberg, 2010). Preemptive risk communication requires customers to consider not only the benefits of a product or service but also the risks and negative aspects involved in the process of product evaluation (Ju et al., 2020). In fact, PRNs are already being used for online transactions in many product categories. However, not all e-retailers use PRNs and there is still debate as to whether they should be used in online shopping. Some e-retailers may worry that purchase-risk notices may have some side effects, such as raising consumer suspicion, reducing purchase intentions, or harming online sales. So, this study wanted to explore whether PRNs could effectively reduce online returns, and the side effects of return credits will also be examined.

Specifically, the customer's purchase journey is divided into two stages in this study, pre-purchase and post-purchase. This study explores the role of PRNs in online returns for two different stages. Previous literature has shown the possible negative impact of return avoidance measures (Gelbrich et al., 2017). In the pre-purchase stage, this study discusses two possible negative consequences, namely, consumer skepticism and reduced purchases. At the post-purchase stage, this study discusses the impact of PRNs on return intention, mismatch tolerance, customer dissatisfaction, purchase regret, and repurchase intention.

In order to answer the above questions, several online experiments were designed in this study. In the return credits research, a one-factor (the amount of return credits: low vs high) was designed as a between-subjects scenario experiment. In two studies on PRNs, two one-factor (purchase-risk notice: presence vs absence) between-subjects scenario experiments were designed. Online experiments consist of a range of scenarios and conditions. In order to invite enough online participants, the studies in this thesis recruited all the participants using a third-party service, an online survey platform. All the participants had online shopping experience with Taobao. Participants enter the experimental platform through an online link, and then receive

the information of the experiment. The experiment presents different scene information to observe the participants' reactions and decisions. During the experiment, information such as behavioral data, participants evaluation and reaction time of the participants were collected. After collecting the data, the data analysis is carried out by SPSS, and the research results are explained and verified by using the analysis of variance (ANOVA) and other related analysis techniques. In this thesis, the research method part is described in the corresponding chapter.

1.3.2 Objectives

The research objectives of this thesis include four aspects. These four aspects are interconnected and progressive relationships. Specifically, from online return to return management, from return management to return avoidance, and then to the specific issues explored by the research of this thesis.

First, investigate the problem of online returns, which mainly involves the reasons for online returns, the size of online returns (in various dimensions), the types of online returns, the methods of online returns, the process of online returns, and the impact of online returns. In particular, by exploring the reasons for the return of online shopping and its negative impact on e-commerce to determine the area of concern in this thesis - return management.

Second, investigate some important issues in return management, such as the concept of returns management, participants in returns management, returns management policies, returns management process, main challenges faced by returns management, etc. These concepts or contents work as one of the foundations of this thesis to explore return avoidance measures. Through the panorama scan of return management, further determine the problem that the research of this thesis pays attention to - return avoidance.

Third, review the previous literature on how avoidance measures can eliminate the negative impact of online returns, and discuss the challenges related to current return avoidance measures. Finally, put forward two return avoidance measures that this thesis hopes to explore-return credits and purchase-risk notices.

Fourth, evaluate the impact of return credits and purchase-risk notices on reducing online returns, paying particular attention to the impact of these two return avoidance measures on customer return intentions, purchase decisions, and

satisfaction. The studies in this thesis could provide retailers with practical recommendations for returns management.

1.4 Research Scope

The research in this thesis aims to advance the research related to return avoidance measures and provide effective avoidance measures. In order to achieve the purpose of this study, the studies in the thesis will explore whether two new return avoidance measures (i.e., return credits and purchasing-risk notices) could effectively avoid online returns. The research scope is defined around the research purpose and research questions, which determine the boundaries of the research.

First, this thesis focuses on the issue of returns in online retailing. Online retailing is recognized as a subset of e-commerce, which allows customers to purchase products or services from e-retailers via using the terminal devices (e.g., smart phones and tablets) and Internet (Ahsan & Rahman, 2021). Since its inception, e-commerce has become an indispensable part of the global retail industry. Moreover, with the rapid increase of global Internet users, a large number of Internet users have become potential customers of e-commerce. Under the joint effect of factors such as shopping convenience and marketing incentives, these potential customers have purchased their products and services through the Internet. They are adapting and even becoming experts in online shopping (e.g., some bloggers with excellent buying experience show their buying skills on various platforms). According to reports, the market size of global e-commerce will reach 62415.2 billion US dollars by 2030 (Research and Markets, 2022). In the context of the rapid development of e-commerce, many interesting and meaningful new problems have emerged in online shopping. An in-depth exploration of these issues will not only help to solve the practical problems of online retailing but also may generate new theoretical contributions. A very common problem with remote shopping is online returns (Akturk et al., 2021; Ambilkar et al., 2022b; Powers & Jack, 2015; Stambor, 2022). Online returns have posed serious challenges to e-retailers, such as cost, operations, consumer satisfaction, consumer trust, and reputation. For example, 89% of customers who had a poor online return experience said they would not buy online from that e-retailer again (Haley Messenger, 2021). Therefore, this thesis will focus on the problems of returns in the context of online shopping.

Second, this thesis is concerned with consumer behavior in online returns management. Consumers are closely involved in the purchasing process and return process (Abdulla et al., 2019), and most online returns in e-commerce are related to consumer behavioral factors rather than factors such as functionality or quality (Li et al., 2014). In fact, customer returns are the largest return category (Rintamäki et al., 2021b). Previous literature indicated that in terms of research related to online returns, four main research areas emerged: returns policy, consumer behavior, planning and execution, and returns management (Abdulla et al., 2019). Among them, research related to consumer behavior mainly explores the decision-making process of consumers during the shopping journey (involving sales and returns). Studying consumer behavior in product returns is critical to effectively managing returns and providing excellent customer service (Ahsan & Rahman, 2021). Currently, a growing body of research addresses returns policies in B2C environments, specifically issues related to consumer returns in e-commerce (Hjort & Lantz, 2016). According to the purpose of the research, this thesis focuses on the psychology and reaction of consumers in return avoidance measures. This will help to advance the research related to consumer behavior in the above four research areas.

Third, the problem of online returns is extremely complicated, and this thesis does not intend to and cannot solve all problems related to online returns. Even if this thesis locks the research area on consumer behavior, it is still a rather grand scope. In order to further clarify the research scope of this thesis, this thesis focuses on issues related to return avoidance. This is determined by the prevalence and seriousness of online returns. Return avoidance is the key in research on consumer behavior related to online returns. Because not only is this directly related to the e-retailer's efforts to reduce returns, but also to the well-being of online customers. Moreover, in the aspect of return avoidance of online return, the previous research is not deep enough. E-retailers are still looking for low-cost, easy-to-use, and effective return avoidance measures, especially those measures with less side effects. Therefore, in this thesis, two studies about return avoidance will be conducted. Among them, one study is related to the use of return credits, and the other study is related to the use of purchase-risk notices. Neither tool has been examined for its impact on online returns. This thesis will bridge this research gap.

To sum up, the research scope of this thesis is consumers' psychology and responses to return avoidance measures in the context of online returns. This research

scope is appropriate because matches with the purpose of the research. Specifically, this thesis mainly explores the effectiveness and side effects of two return avoidance measures, namely return credits and purchase-risk notices. This is an exploration of how online consumers respond to these return avoidance measures when shopping via e-commerce.

1.5 Research Significance

E-retailers are desperate to figure out how to deter massive and costly returns in the age of online shopping (Halzack, 2021). Based on punishment theory, signal theory, and risk communication theory, etc., this thesis attempts to answer this issue by exploring two novel return avoidance tools. The main part of this thesis consists of two studies: one is about return credits, and the other is about purchase-risk notices. These two studies aim to explore low-cost, effective, and easy-to-operate return avoidance measures. Both academic research and business practice may benefit from these studies. The significance of the research is as follows:

(1) Return credits. First, previous literature explored how to use an absolute penalty mechanism to reduce online returns. This study focuses on the use of return credits, a milder punitive mechanism. The punitive mechanism in this study differs from that in previous literature on product returns management. Therefore, by investigating the use of different amounts of return credits to reduce returns, this study may add new knowledge to the literature related to return avoidance. Second, although previous literature has examined both positive and negative outcomes of restrictive return policies, more research is needed to understand how different levels of restriction are associated with important consumer responses. This study can enrich the understanding of restrictive return policies by examining the effects of different amounts of return credits on consumer perception, satisfaction, and repurchase intention. Finally, to mitigate the negative impact of online returns, e-retailers need to implement returns avoidance methods to reduce returns. This research can help e-retailers decide whether and how they can invest in and use return credits to reduce online returns. In conclusion, this study is valuable in exploring the use of return credits, a milder punitive mechanism, to reduce returns and enrich the understanding of restrictive return policies. This study fills a research gap, adds new knowledge to the literature, and sheds light on retailers' return management policies.

(2) Purchase-risk notices. This study identified a low-cost method for reducing returns known as PRNs. This approach can avoid online returns by preemptive risk communication. Previous research has examined preemptive risk communication, but this study differs from the past research. First, this study examined whether online shoppers responded differently in the presence or absence of a PRNs. Second, this study examines the direct, rather than moderating effect of the presence of risk information on consumers. Finally, this study establishes links between risk cueing information and other constructs, namely, consumer skepticism, willingness to return, mismatch tolerance, and purchase regret. Briefly, this study examines the effect of PRNs on a different set of dependent variables in different contexts. Therefore, this study is meaningful for research on avoiding returns. Because it helps fill this research gap and is also of interest to e-retailers looking to reduce online returns.

In conclusion, by exploring the role of return credits and purchase-risk notices in online returns, this study bridges the gap in previous studies, enriches the research on return avoidance, and provides useful ideas for how e-retailers can reduce online returns.

1.6 Organization of the Thesis

This section briefly introduces the structure of the entire thesis as an introductory guide for the reader. Totally, this thesis is divided into six chapters, and each chapter is divided into several subsections. In addition to these chapters, this thesis presents the list of abbreviation at the beginning of the thesis and references are added in the section at the end of the final chapter. The detailed content is as follows:

Chapter 1 – Introduction. This chapter mainly introduces the background of the important issues concerned in this thesis. Totally, this chapter contains six subsections: background of the study, problem statement, research questions and research objectives, research scope, research significance, and organization of the thesis. The subsections of these six parts basically introduce or explain this thesis completely, and can help readers understand the importance of the research questions (research motivations) that this thesis tries to explore. Specifically, this chapter introduces the concept, characteristics, advantages and disadvantages of e-commerce by comparing it with traditional commerce. On this basis, put forward the topic of this study - online returns. In addition, the purpose of the research is introduced, and specific research questions (return avoidance) are proposed and discussed in

combination with the purpose and background of the problem. According to the research purpose, objectives, and questions, the research scope is introduced, and the research significance is proposed in this chapter.

Chapter 2 - Returns and Returns Management. This chapter is divided into two parts: The first section will discuss returns in online shopping. This section will report some basic data and related facts about online returns, such as the reasons, size, types, method, process, and impact of the return. The second section will mainly discuss returns management in online shopping. Specifically, this part will discuss the concept of returns management, participants in online returns, returns policies and methods, processes of returns management, challenges of returns management, etc. This chapter aims to sort out the background knowledge about online returns and return management, as well as propose the content of this research (return avoidance) for preliminary preparation.

Chapter 3 - Return Avoidance in Online Shopping. This chapter first discusses the concept of return avoidance, including its characteristics and functions. Then, current returns avoidance measures are discussed. In this section, the current return avoidance measures are introduced in three stages: pre-purchase, during the purchase, and post-purchase. The challenges faced by returns avoidance measures are then discussed. These challenges include cost challenges, technical challenges, satisfaction challenges, acceptance challenges, and strategic challenges. This section will also discuss the shortcomings of previous research by discussing the return avoidance measures mentioned in the previous literature. On this basis, this thesis approaches the question to be explored in this thesis: how to reduce online returns through return avoidance?

Chapter 4 - Reducing E-commerce Returns with Return Credits. This chapter is about how to use return credits to reduce online returns. First, background information is presented, including satisfaction-related online returns and return credits. Next, several hypotheses are proposed, including perceived fit, consumer satisfaction, retention intention, repurchase intention, and switching intention. Then, the research procedure and participants as well as the experimental materials and measurement methods are described. The Results section, reports operational checks and scale reliability as well as hypothesis testing. Next is extended analysis. Finally, it discusses theoretical and practical implications and limitations. The content of this chapter comes from my JCR paper "Reducing ecommerce returns with return credits".

This paper has been accepted and published by Electronic Commerce Research in 2022.

Chapter 5 - Effects of Purchase-Risk Notices on Reducing Online Returns. This chapter will discuss the effects of purchase-risk notices on reducing online returns. It begins with an introduction and background information. The chapter then will explore the pre-purchase effects of purchase-risk notices, including an overview of the research and hypotheses related to the consumer skepticism and purchase intention. Study 1 is then presented, including its method and results. The chapter then moves on to discuss the post-purchase effects of purchase-risk notices, including an overview of the research and hypotheses related to return intention, tolerance toward product mismatch and product dissatisfaction, product purchasing regret, and intention to repurchase from retailers. Study 2 is then presented, including its method and results. The chapter concludes with a discussion of the theoretical implications and managerial implications, as well as the limitations and suggestions for future research. The content of this chapter comes from my JCR paper " 'What I've received doesn't match what I saw online': Effects of purchase-risk notices on reducing online return''. This paper has been accepted and published by Information & Management in 2022.

Chapter 6 - Conclusions, limitations, and Recommendations. Although most of the research findings have been presented and discussed in the above two chapters. However, as a necessary structure of the overall thesis, this thesis still summarizes the full thesis on the basis of research findings. This chapter summarizes the full thesis and points out the limitations of the study. Finally, recommendations are made for e-retailers and future research, respectively.

The above is the organization of this thesis. In addition to these chapters, this thesis also provides a list of figures, tables, abbreviations, etc. before the text begins. At the end of the thesis, there is the references section of this research.

Chapter II Return and Return Management

2.1 Returns in Online Shopping

Online returns pose a huge challenge for e-retailers (Dopson, 2021). With the vigorous development of e-commerce, more and more people choose to shop online. However, unlike traditional brick-and-mortar stores, consumers cannot directly touch and experience products in online shopping (Wood, 2001), which increases the possibility of online returns (Hong & Pavlou, 2014; Shulman et al., 2011). Return issues not only cause inconvenience to online consumers, but also bring serious pressure on e-retailers and even the entire supply chain (for example, an e-retailer may need to consider the number of returns and exchanges when placing an order from a production manufacturer). Therefore, the problem of online returns needs to be explored and solved urgently. To address these challenges, return avoidance has received increasing attention from scholars. Previous literature pointed out that there are many reasons for the return problem (Abdulla et al., 2019). For example, product not as described, sizing fit issues, product quality issues, logistics issues, changes in customer preferences, etc. Scholars have discussed the reasons for returns from various disciplines in an attempt to find ways to reduce online returns.

2.1.1 Reasons for Returning Online Purchases

Online shopping can not only change consumers' purchasing behavior, but also influence consumers' return behavior (Koufaris et al., 2001). Remote transaction technology provides significant advantages or benefits to e-retailers, such as easy access to global consumers, accumulation of consumer data through consumer click behavior, etc. However, a coin always has two sides, and it is also closely related to the disadvantages of the remote transaction model (Stöcker et al., 2021). For example, product (fit) uncertainty (Hong & Pavlou, 2014) and lack of product haptics (Shulman et al., 2011) lead to a large number of online returns in e-commerce. That's why nearly 75% of e-retailers believe that online returns are an inevitable evil (Keenan, 2021; Lindsey, 2016; McKinsey & Company, 2021). Additionally, between purchasing and receiving a product, there are many risks that can lead to customer dissatisfaction and possible returns (Hjort et al., 2019). However, the worsening returns problem greatly impacts e-retailers' costs, operations, profits, brands, and more. For example, the profit, as the metric retailers care about most, is being eroded by high return rates (Speights, 2013). To deal with online returns, e-retailers have to

spend as much as 66% of the product price (Hartmans, 2022a) and returns are reported to cost businesses $1 trillion annually (Zhang et al., 2022). With the increase in online transactions, the impact of online returns on corporate profits may continue to increase. Previous literature indicated that online returns are generally caused by a variety of different factors, including product suitability, uncertainty in valuation, product defects, and opportunistic behavior (Abdulla et al., 2019). However, this is not the whole story that leads to online returns. E-retailers need to be more comprehensive in identifying and understanding the reasons behind online returns. After summarizing previous literature and observing e-commerce practices, the numerous reasons for online returns can be classified into five categories.

2.1.1.1 Product-related Reasons

In offline shopping, customers can not only actually see and touch the product they want to buy before paying (Wood, 2001), but also judge whether some important attributes of the product (such as style, color, function, quality, etc.) meet their needs, and then ultimately decide whether to buy or which item to buy. However, time and space are inevitably separated between online customers and e-retailers in online shopping settings (Lucking-Reiley, 2000). Since online customers cannot check or experience the product in person, customers are often confronted with a high degree of uncertainty during their online shopping (Ba et al., 2003; Pavlou et al., 2007). So, product uncertainty (e.g., products may be incomplete or defective) will cause a large number of online returns (Hong & Pavlou, 2014). Common returns due to the product itself are as follows:

(1) Defective products. Online shoppers may receive defective products (Nel & Badenhorst, 2020) and thus initiate returns (Frei et al., 2022; Saarijärvi et al., 2017). According to one survey, defective products account for 59% of all reasons returned by customers (Whittaker-Wood, 2019). In online shopping, customers cannot inspect products in person before making a purchasing decision. They often need to rely on product descriptions, pictures and online reviews to make purchasing decisions. Even with the best efforts of an e-retailer to ensure product quality, a variety of factors can cause a customer to receive a defective product. A defective product refers to the product that is defective, damaged or cannot be used normally due to reasons such as product design, manufacturing, quality control, and equipment reliability, etc. Generally speaking, defective products are often different from what the manufacturer

expected, or from other products in the same product line (Henderson & Twerski, 1997). These defective products mainly do not meet some key standards expected (such as appearance, quality, performance, safety, etc.), and therefore should not be sold. In addition, previous literature illustrated that there is a significant correlation between product quality and quantity (Porteus, 1986). When a manufacturer produces a product in large quantities, the quality control of the production process may deteriorate, resulting in defective products. If the quality inspection department of the enterprise cannot detect these defective products, consumers are likely to receive these defective products. Consumers are very concerned about whether there are defects in products, because product defects may cause the product to not be used normally or cause serious safety accidents. In most countries, when consumers receive a defective product through online shopping, they have the right to request a return, exchange or repair of the product under the returns policy or law.

(2) Uncertainty of product fit is recognized as one of the main reasons for the high rate of product returns in online shopping (Nugroho & Wang, 2023; Wang et al., 2021). The concept of "fit" mainly describes the degree to which a product can meet the needs of consumers (Wang et al., 2021). In online shopping, one of the key factors hindering the reduction of product returns is the uncertainty of product fit (De et al., 2013). Furthermore, uncertainty in product fit hurts customer satisfaction more than uncertainty in product quality and leads to more online returns (Ahsan & Rahman, 2021). Therefore, if the degree of product fit does not meet the customer's expectations, the customer may initiate a return due to dissatisfaction. When consumers are allowed to return an item, the risk of misfit is transferred from the consumer to the e-retailer (Xiao & Shi, 2016). Therefore, e-retailers need to concern about online returns due to the uncertainty of product fit. Otherwise, they may have to endure a large number of returns due to product misfit issues.

(3) Incomplete product. Incomplete products are also identified as one of the risks of buying products online (Hasan & Pattikawa, 2022). An incomplete product is an item that lacks a component, part, or function necessary for normal use. For online consumers, an incomplete product is often intolerable. Consequently, incomplete products are often returned by online consumers. Generally speaking, there are two main reasons for incomplete products. One is that incomplete products may be due to negligence during packaging. The product does not contain all the necessary components when it is packaged for delivery to the customer. This is quite possible,

especially for products with many components (for example, furniture that needs to be assembled). Second, incomplete products may also be the result of logistics and transportation. For example, some products may not be packaged securely. The packaging may have been damaged during the shipping, resulting in the loss of some parts (Coombes, 2017). Regardless of the reason for an incomplete product, customers may choose to return it because they cannot use it.

(4) Time-sensitive products are those that have an expiration date or must be used within a certain period of time (Condea et al., 2010). Some common time-sensitive products typically include food, airline tickets, pharmaceuticals, show tickets, cosmetics, seasonal items, and other perishable or expired items. Previous literature argued that time-sensitive products detract from their value over time and that e-retailers need to deliver these time-sensitive products to consumers immediately (Ow & Wood, 2011). Therefore, it is especially important for e-retailers to deal with time-sensitive products. Failure to pass it to customers on time could bring serious consequences. When e-retailers sell time-sensitive products, they need to pay much more attention to product distribution and delivery time to ensure that products reach customers within the expiration date. If these time-sensitive products have expired (or nearly), or customers feel that their purchase has lost some of its value due to the long shipping time, they may choose to return their purchases. Even, previous literature indicated that the loss of these returned products can exceed 30% of the original product value (Guide et al., 2006). However, due to the special nature of time-sensitive products, the return policy for these items is usually stricter than for other products. In fact, many e-retailers could have a no-returns policy for the time-sensitive products. This is because once a time-sensitive product has been opened or used by consumers, there is no guarantee of product quality, integrity or safety. Moreover, the returned product may not be sold again because it has expired.

(5) Warranty returns. Most countries in the world have formulated strict laws and regulations to protect consumers' rights and interests. Among them, the more common one is that consumers can apply for repair, exchange, return or refund as needed during the product warranty period. As an important after-sales service provided by enterprises, warranty refers to the technical support activities provided by enterprises (usually manufacturers) to consumers within a certain period of time after the products are sold (Wang et al., 2021). Generally speaking, most product returns within the warranty period are related to manufacturing defects and functional failures

of the product. During the warranty period, if there is a quality problem with the product, consumers can apply to the e-retailer for repair, exchange, return or refund. Some e-retailers may ask consumers to contact the product's manufacturer (or a service center as the manufacturer claimed) directly for further processing. During the processing, the manufacturer or e-retailer may ask the customer to provide relevant documents. For example, photos or videos of damaged and unusable products. Some e-retailers or manufacturers require consumers to provide proof of purchase, product packaging, warranty certificates, etc.

2.1.1.2 Technology-related Reasons

The method of information transfer in online shopping may not fully restitute the original appearance, tactile sensation and product details of the real product. That is, what customers see online may not match what they see when they receive it. According to statistics, 22% of consumers feel that the products they received are inconsistent with the products they saw when shopping online (Saleh, 2016). In e-commerce, consumers cannot directly touch products (Wood, 2001), but can only rely on the information (Vasić et al., 2019) and pictures provided on the website to understand the products (Nel & Badenhorst, 2020). Displaying such information and pictures requires the use of various electronic devices and network technologies. However, technological imperfections are an inherent feature of online shopping, and to some extent this is unavoidable. While it is unavoidable, the consequences cannot be ignored - imperfect technology can result in online returns. Whether and to what extent technology-related factors show the real product could be a significant reason for online returns. Generally speaking, these technical factors that lead to returns may involve multiple aspects such as network technology, website design, and hardware equipment (computer monitors or mobile phone display screens, etc.). For example, due to factors such as equipment, technology, and customer usage, the color of a product that consumers see on the Internet may be different from the actual product color. This can prevent consumers from making the right shopping choices and ultimately lead to online returns. Specifically, technology-related factors that affect online returns include:

(1) Color Accuracy. Online customers have to rely on product images and other information that e-retailers provide to make shopping decisions. However, due to differences in the display settings of computer monitors or mobile phone screens,

the actual color of the product may not match the customer's expectations. Previous literature indicated that online returns are often the result of digital challenges, such as poorly displayed images (Yadav, 2021). In particular, for products where visual perception is important (e.g., apparel, home furnishings, art, etc.), color accuracy is an important factor in a customer's shopping decision. Due to possible differences in display settings (e.g., resolution, sharpness, color calibration, etc.) of a customer's device, product images may appear in different colors on different screens. In online fashion retailing, chromatic aberration is a common reason for customer returns. A chromatic aberration is a form of aberration in color optics that produces undesirable fringes along boundaries within a product image (Chung et al., 2010). To be precise, chromatic aberration could produce an effect similar to fringing red and blue halos (Wighton et al., 2011). This may affect the customer's judgment of the actual product. In the case of online shopping, there are many reasons for the color difference (or chromatic aberration). On the one hand, product images may be affected by factors such as cameras, lights, backgrounds, etc. On the other hand, when the electronic picture appears on a computer or mobile phone, the display effect of the product pictures will be affected by the display and performance of the device (i.e., terminal devices such as computers and smartphones). Undoubtedly, chromatic aberration will have a certain impact on the customer's product judgment, which may lead to the customer's return.

(2) Size discrepancy. Online customers may receive products that are too large or too small (Nel & Badenhorst, 2020), which may be related to the online display of the products. Product size is one of the important decision-making information for customers when purchasing products. However, both e-retailers displaying product sizes and customers evaluating product sizes can be a serious challenge in remote transactions. Failure to accurately display or evaluate the size can have serious consequences as it can lead to misjudgment by online customers. Variances in manufacturer sizes have been reported to cause over 50% of customers to return items due to product size or fit issues (Deloitte Consulting, 2019). Previous research pointed out that one of the main reasons for the increase in online returns is that consumers cannot touch and feel the product before purchasing, resulting in a high rate of misjudgment by consumers of the product (Keng Kau et al., 2003). While e-retailers often provide some descriptive information about actual product size, this information is not always informative, accurate, or effective. For example, an e-retailer may

display product images that differ significantly from actual product dimensions. This may be caused by shooting angle, shooting technique, image processing and other reasons. For example, an e-retailer might adjust the angle, proportions, and background of a product photo to make the product look more attractive and easier to sell. These adjustments may cause customers to misjudge the actual size of the product. Ultimately, consumers may return products because they misjudged the size of the product (Frei et al., 2022; Saarijärvi et al., 2017).

(3) Evaluating product quality with visual details. In addition to color or size, consumers' perception of visual details of online products (for example, the material of clothing) may also cause returns. If e-retailers display products with specific visual details, such as showcasing product texture or fabric appearance, these elements will help reduce online returns (Bakker, 2023). Consumers' perception of the visual details of online products still depends on how e-retailers display online products. There are many ways for e-retailers to display products online. For example, e-retailers can display products through text, pictures, audio, video and 3D. In recent years, the development of digital technology has provided more options for online product display that can enhance the customer experience. In a novel way, e-retailers can use Augmented Reality (AR) to provide more visual details and a better shopping experience (Stambor, 2022). However, due to the inherent nature of remote technology, online shopping still struggles to provide sufficient visual details to help consumer decision-making. While some websites may offer high-resolution pictures, there are still certain limitations compared to viewing a product in person. Today, online shoppers still rely on product descriptions and images to evaluate the quality of product material. This discrepancy in visual details due to different technologies may cause consumers to initiate returns.

(4) Internet connection issues during online shopping may also result in returns. First, slow loading of product images and information can make consumers impatient. They may place an order in a hurry after only seeing some pictures or information. This may lead to customers not being able to fully understand the appearance, characteristics, and function of the product, resulting in misjudgment of the product. When they find that the product that they received is not what they like or want, they may eventually choose to initiate a return. Second, customers may experience network connectivity interruptions while placing orders online. On the one hand, network connectivity interruptions may cause customers' orders to be unable to

be processed in a timely manner; on the other hand, network connectivity interruptions may also cause customers to submit orders repeatedly. Some e-retailers will send order confirmation to online shoppers after online shoppers place an order, including product quantity, total price, delivery address, contact number and so on. This may help reduce such returns. In short, the network problems may cause online returns.

2.1.1.3 Seller-related Reasons

A survey stated that the majority of returns (65%) from online purchases are due to the fault of the seller (Kiniulis, 2021). Some common reasons are inaccurate product descriptions, overly lenient return policies, inventory management mistakes, wrong product shipments, lack of customer support, etc. From the perspective of reducing returns, returns caused by seller-related reasons may be easier to improve through the seller's own efforts. The seller-related reasons have been extensively explored in previous studies. Sellers need to be aware of these reasons as this can help reduce online returns.

(1) The item is not as described. “Product didn’t match the description” was listed as one of the top reasons that consumers choose to return products when shopping online (Ecwid, 2020). Inappropriate product descriptions, incorrect product descriptions, and ambiguous product descriptions (e.g., appearance, size, color, features, etc.) stated by e-retailers can increase the risk of consumer purchases, thereby increasing consumer returns (Rabinovich et al., 2011). Before the consumer receives the product, the consumer can only browse the relevant information of the product online to make a purchase decision (Lim & Dubinsky, 2004; Vasić et al., 2019). Even, online customers need to rely on their imagination to make decisions about some characteristics of the product (Nel & Badenhorst, 2020; Wang et al., 2013). This may involve high product uncertainty (e.g., product fit uncertainty, product quality uncertainty, etc.). When consumers receive their products, consumers may find that the actual product they receive differ from the e-retailer's product description. For example, a report stated that in the fashion industry, 64.2% of online returns are due to items not being as described (Robosize, 2022). Generally speaking, the problems that the products do not conform to the description mainly focus on the variety, size, material, style, composition, weight, label, color, pattern, packaging, production date, batch, delivery date, and shelf life of the product. Information

availability is one of the determinants of online consumer satisfaction (Vasić et al., 2019). To improve information availability, e-retailers need to improve their information presentation. For example, e-retailers are obliged to provide true, reliable, complete and accurate product information for customers to judge whether the product meets their needs (Lim & Dubinsky, 2004; Vasić et al., 2019). However, due to some subjective or objective reasons, the situation that the product does not match the description still happens from time to time and leads to serious consequences. In terms of subjective reasons, in order to improve the conversion rate of customers, some sellers did not truthfully or completely introduce the basic information of the products. They may use overly exaggerated marketing language, including images, to attract customers' attention. For example, the seller deliberately exaggerates the product quality, product function, product performance, or product sustainability on the detail page (Shen et al., 2020; Vazquez, 2021). In terms of objective reasons, the seller relies on the description and information provided by the supplier, but the supplier may make mistakes or change product specifications, causing the product to not conform to the description. Although this is not intentional by the seller, it objectively misleads customers. Whether it is subjective or objective reasons, a customer's purchase decision based on incomplete, inaccurate, misleading or even wrong information may eventually become a return decision.

(2) Overly lenient return policy. Consumers could perceive shopping risks when they make their decisions during the online shopping journey (Forsythe & Shi, 2003) because they cannot evaluate products in advance and often have to pay for the product before they receive it (Walsh & Möhring, 2017). To reduce the risk of customers buying online, e-retailers tend to offer generous return policies to customers. From the customer's point of view, about 66% of online consumers check return policies before making a purchase (Batchelor, 2020). As a result, many e-retailers offer generous return policies to online shoppers to gain or maintain a competitive advantage. The lenient return policy often provides attractiveness in terms of return condition, return deadline, and refund amount. Even, more and more e-retailers are offering free shipping and free returns to cope with the increasingly fierce market competition (Kohan, 2022; Lindsey, 2016). In some countries, consumers don't even have to provide any reason when returning an item. For example, Chinese law stipulates that consumers have the right to "return the product within seven days without reason". However, in addition to the increasing number of remote transactions,

lenient return policies are one of the two main drivers of online returns (Ruiz-Benítez et al., 2014). Research showed that money back guarantee (MBG) encourages customers to order more, which can lead to higher product return rates (Walsh & Möhring, 2017) and free shipping promotions encourage customers to make riskier purchasing decisions, also resulting in more product returns (Shehu et al., 2020). Additionally, lenient return policies can be abused and incentivize some customers to be opportunistic or even fraudulent, leading to high online returns (Akturk et al., 2021). They may intentionally buy an item, use it for a period of time, and then intentionally return it for the benefit of free use. This kind of abuse of the return policy will increase the cost of the seller, which is unfair to the seller and other consumers. To reduce online returns, e-retailers have experimented with restrictive return policies. For example, L.L.Bean, a well-known American retailer, announced that in view of the abuse of the return policy by some customers, it decided to change the return period from lifetime to one year (Ülkü & Gürler, 2018) and Amazon has taken even tougher steps against returns fraudsters — shutting down returns fraudsters' Amazon accounts.

(3) Information overload (such as product information, promotion information, and review information, etc.) can lead to poor shopping decisions (Chen et al., 2009; Jacoby et al., 1974) and online returns. E-retailers can display rich information to potential customers at a very low cost, which helps to reduce the cost of customers searching for information and improve the welfare of online customers (Alba et al., 1997; Chen et al., 2009; Evans & Wurster, 1999). Compared with traditional brick-and-mortar stores, the reduced searching costs and improved customer welfare can be a huge competitive advantage of e-commerce. This not only attracts traditional physical stores to introduce e-commerce, but also attracts a large number of customers who are accustomed to traditional shopping methods to switch to online purchases. E-retailers may therefore provide more online information to customers. However, when the information load exceeds a threshold, online customers may need to exert more effort to process product information and may make worse decisions (Chen et al., 2009; Jacoby et al., 1974). These poor shopping decisions may turn into online returns. In conclusion, providing information to online shoppers is necessary, but it can also lead to online returns if used incorrectly.

(4) Inventory management mistake. Inventory management is the process of supplying materials, optimizing costs, or performing other tasks to fulfill customer

orders (Smitha & Aslekar, 2022). Factors or reasons related to inventory management can also lead to online returns. It's reported that 23% of customers received the wrong product (Bracken, 2021), which may be related to the e-retailer's inventory management mistakes. First, shipping the wrong product to consumers is one of the reasons why consumers initiate online returns (Frei et al., 2022; Lindsey, 2016; Saarijärvi et al., 2017). In general, shipping the wrong product is most likely due to an e-retailer's inventory management mistake. For example, an e-retailer shipped the wrong item to a consumer based on incorrect inventory data, or the quantity of the item did not match the quantity of the item purchased by the consumer. This may lead to the consumer to initiate a return. Second, e-retailers often have products in their inventory that need to be returned to the manufacturer (for example, because they are defective or missing components). These products, which should have been returned to the manufacturer, may also be mistaken for normal products and resold due to inventory management mistakes by e-retailers. This can also lead to online returns. In short, inventory management mistakes by e-retailers can lead to customer returns. E-retailers need to strengthen inventory management to reduce these unnecessary returns.

(5) E-retailers failed to provide information on how to properly assemble or use the product (Frei et al., 2022). First, when buying a product, consumers often expect clear, detailed, and easy-to-understand user instructions to ensure they can assemble or use the product correctly. User instructions are generally documents that explain how to install, properly use, and dispose of a product (Mo, 2021). This may include user manuals, assembly instructions, repair information, storage methods, or disposal information. For example, consumers may need to assemble furniture purchased online according to instructions. However, these assembly instructions are difficult to understand for many inexperienced consumers. Good user instructions can improve star ratings, prevent safety issues, and reduce online returns. However, poor user instructions can frustrate customers and lead to serious product returns (Meek, 2020). Second, e-retailers may not provide effective after-sales support to guide consumers on how to assemble and use the product. Many e-retailers may not provide remote guidance for consumers due to cost reasons. When consumers encounter problems in assembly or use and cannot get service support, they are likely to choose to return the product. Experienced e-retailers often provide remote guidance to consumers, especially for complex products such as sophisticated electronics. For

example, if the alarm system fails, remote experts at Simplisafe (a company that offers DIY home security systems) can diagnose the problem and fix it from a distance. This helps reduce returns due to product failures (Levi, 2021). In conclusion, if the manufacturer or e-retailer fails to provide sufficient information about how to assembly and use the product, and does not provide remote guidance, consumers may feel confused and helpless. When this happens, it may be a more convenient option for them to return the product. In particular, certain products may have special usage guidelines and precautions, which may result in impaired functionality or pose safety risks if consumers assemble or use such products incorrectly. In this case, consumers are more likely to choose to return the product because they have not received sufficient and effective guidance.

2.1.1.4 Consumer-related Reasons

Studies suggested that most product returns are related to consumer behavior rather than product quality or functions (Li et al., 2014; Ülkü & Gürler, 2018). These consumer-related reasons may include low product satisfaction, remorse following an impulsive purchase, a change in preference, encountering a better option, placing a wrong order, and no longer needing the product purchased, etc. In many cases, even if the product meets the consumer's expectations, it is easy for consumers to change their minds after purchasing (Dopson, 2021; Frei et al., 2022; M.-C. Yu & Goh, 2012). For example, it's reported that 42% of online returns are caused by customers' remorse (Bass, 2022) and it can be seen that customers' purchasing behavior is unstable. Another report showed that in fashion-related online shopping, return reasons based on consumer preferences (such as size, fit, style, etc.) account for approximately 72% of all fashion product returns (Dopson, 2021). Also, even though the information provided by an e-retailer may be comprehensive, correct, and highly detailed, customers may make mistakes and subsequently initiate a return (Nel & Badenhorst, 2020).

(1) Satisfaction-related returns. Customer satisfaction refers to the gap between how customers actually feel after using a product and what customers expect from a product before buying it (Ghosh, 2020). Customer satisfaction is recognized as one of the key determinants of customers' willingness to return (Frei et al., 2022; Nugroho & Wang, 2023; Saarijärvi et al., 2017). Research indicated that consumers' pre-purchase expectations could influence their post-purchase responses, such as

intention to return an item (Pant & Pant, 2018). In online shopping, customers cannot directly feel the products until they receive them. Customers need to rely on their own imagination to make decisions about the characteristics of the product, which may lead to customers feeling that the product did not meet their pre-purchase expectations after receiving the product (Nel & Badenhorst, 2020; Wang et al., 2013). It can be seen that the uncertainty of online shopping may cause products to fail to meet customer's expectations. In addition, customers' expectations of products can be reflected in many aspects, mainly including size, appearance (e.g., color, shape, etc.), quality, function, and performance. The consequences of failing to meet customer expectations can be severe. When a product deviates from customers' expectations, the perceived value of the product to customers will drop sharply. Previous literature indicated that perceived value is positively related to customer satisfaction (Gounaris et al., 2007; Yang & Peterson, 2004). For example, when a consumer purchases a mobile phone, the consumer may have high expectations for the performance of the mobile phone (including boot speed, power saving, system stability, etc.). When consumers find that the actual performance of the product does not meet their expectations, consumers will perceive that the product value decreased, and thus feel dissatisfied. Previous study illustrated that customer dissatisfaction will lead to customers to initiate returns (Stöcker et al., 2021). In conclusion, satisfaction-related factors can lead to online returns.

(2) Impulse buying. Impulse buying is one kind of purchase made by a consumer based on a sudden desire, emotion, or inner compulsion without sufficient planning (Bayley & Nancarrow, 1998; Beatty & Ferrell, 1998; Muruganantham & Bhakat, 2013). Generally speaking, consumers' impulse buying behavior is often triggered by the irresistible attraction of the purchase and the inability of the consumer to evaluate the consequences of the purchase (Rodrigues et al., 2021). This irresistible appeal could come from many sources, including e-retailer promotions, online advertising, social media posts, peer recommendations, and changes in consumer emotion, etc. Influenced by these factors, consumers may place an order immediately regardless of the consequences (e.g., financial budget). First, online shoppers can easily get the products or services they want with just a few clicks online. Therefore, while online shopping brings convenience, it also makes consumers more likely to make impulsive purchases when shopping online than when shopping in physical stores (Chen, 2008). Second, under the influence of various marketing stimuli,

consumers may buy lots of products that they don't actually need. Impulse buying could bring short-term gratification for consumers. However, it can also have some negative consequences for consumers, such as heavy financial burden and unwanted products after purchase. Customers who make impulsive buying often experience cognitive dissonance (or regret) in the post-purchase stage, and they are ultimately more likely to return the product to the e-retailer (Chetioui & El Bouzidi, 2023; George & Yaoyuneyong, 2010; Imam, 2013). According to the survey, customer's remorse accounts for 42% of the reasons for customer returns (Whittaker-Wood, 2019). It may also be more common when e-retailers run promotions, often resulting in a flood of online returns after the promotion ends.

(3) The customer could make a mistake while ordering online in various shopping websites (Cannon, 2023; Nel & Badenhorst, 2020). Many shopping sites tend to present a lot of information, such as product information, review information, and promotional information, etc. While this helps customers get enough information to make shopping decision, it could also make customers get lost in the shopping site and may buy the wrong product (Mukherjee & Goswami, 2017). First, customers may place duplicate orders by mistake. Consumers have to switch between product search pages and product introduction pages, which is likely to lead to double orders (i.e., customers repeat purchases of products they have already purchased). On an Amazon forum, an online seller shared the case with fellow sellers of a customer who placed a duplicate order and received two identical beds, and then wanted to return one of them (Flower, 2014). It can be seen that when consumers receive duplicate orders, they are more likely to return excess product. Second, the wrong product selection. Consumers sometimes select the wrong item during the ordering process, which may be the result of a misunderstanding, misclick, or other inappropriate operation. Once customers realize these mistakes, they may wish to return the item and get back the item they really wanted. Third, the delivery address is wrong. In e-commerce, online shopping systems often allow consumers to set up multiple shipping addresses. Because consumers may set their home address, office address, etc. as the delivery address. Even, when they need to order a gift for a friend, they can set the friend's home address as the delivery address. If a customer uses the wrong shipping address during the order process (for example, an item that should have been mailed to the office and is instead mailed to home), the item will not be delivered correctly. When consumers

realize they have used the wrong mailing address, they can request a return and have the correct shipping address re-addressed.

(4) Holiday returns. Holiday returns tend to be more serious than non-holiday returns. For holiday sales in the United States, retailers expect an average of 17.9% of their products to be returned, equivalent to nearly $17.1 billion (NRF, 2022b). Especially during the pandemic, the problem of holiday returns in online shopping has been exacerbated (Haley Messenger, 2021). This is because consumers remain apprehensive about exchanging products in brick-and-mortar stores (Haley Messenger, 2021). There are many reasons why holiday returns can be severe. For example, during festivals, online customers will buy various gifts for relatives and friends. In many cases, if the recipient of the gift no longer needs the gift or does not want the product, they will choose to initiate a return (Ecwid, 2020; Frei et al., 2022). And, due to labor shortages around the holidays, online returns during the holidays can cost a lot more than usual. According to CBRE and Optoro (Holland, 2021), the average holiday return will cost two-thirds of the e-retailer's original price when labor, shipping, and warehousing costs are factored in. It can be seen that large-scale returns after holidays have brought severe challenges to the e-retail industry and logistics industry. E-retailers need to determine strategies to reduce such returns based on the characteristics and patterns of holiday returns.

(5) Opportunistic returns and fraudulent returns. On average, 27% of online customers globally intend to return an item while shopping (Hedin, 2018). In online shopping, opportunistic or fraudulent behaviors related to returns include: fraudulent returns (consumers buy products with the intention of returning them for a refund after use), illegal returns (consumers cheat for refunds), collusive returns (sharing proof of purchase with others). Generally speaking, opportunistic returns always occur when a customer purchases a product from an e-retailer and fully intends to return it (Pei & Paswan, 2018). For example, some customers choose to return an item after purchasing it in order to try the product (Frei et al., 2022; Saarijärvi et al., 2017). There are some terms used to describe these opportunistic behaviors such as wardrobing, renting, deshopping, and retailer borrowing (Akturk et al., 2021). Opportunistic return behavior in online shopping has been extensively examined by previous researches (Chu et al., 1998; Davis et al., 1998; Hess et al., 1996). For example, previous literature indicated the opportunist could obtain sufficient

consuming value from the product during the e-retailer's timeframe or deadline of product returns (Akturk et al., 2021).

Unlike an opportunistic return, a fraudulent return occurs when a person engages in criminal activities such as shoplifting, price switching, and receipt fraud, among others (Speights, 2013). Fraudulent returns are getting a lot of attention along with e-commerce. Fraudulent returns can involve unethical practices such as bricking, swapping, stealing and return, wardrobing, merchandise exchange. This is a challenge that online retailers often have to deal with. Previous literature suggested that the key factors leading to fraudulent returns in retail include policy (lenient return policies), service (excessive customer service), systems (poor product identification systems, lack of data-driven systems), management (poor return portals, poor returns management supervision) and other factors (Zhang et al., 2023). During the COVID-19 pandemic, many brick-and-mortar stores have been closed for extended periods. The pandemic has impacted customer shopping behavior and return behavior, and has significantly exacerbated the problem of high product return rates and returns fraud (Zhang et al., 2023). Even, after the epidemic, the high return rate and return fraud will continue to linger for a long time.

Opportunistic returns and fraudulent returns have both similarities and differences. In terms of common ground, opportunistic returns and fraudulent returns are both deceptive and detrimental to others. Whether it is deceptive or detrimental to the interests of others, it shows that these two kinds of behaviors are improper. Therefore, these two kinds of behaviors are either not morally sanctioned or legally permissible. In terms of differences, there are differences between the two in terms of return intention, return method, damage to the interests of e-retailers, and legal consequences. For these two behaviors, e-retailers need to take strict precautions. For example, e-retailers must spend a great deal of time, money, and effort to control opportunistic returns and fraudulent returns. These two kinds of behaviors not only did not bring profits to e-retailers, both also caused huge financial losses and reputational damage to e-retailers, while also increasing the pressure to manage operations. But while these two kinds of behaviors have been extensively studied, many e-retailers have not found a more effective way to deal with opportunistic returns and fraudulent returns. Fraudulent returns are subjectively more malicious than opportunistic returns. Table 2.1 shows some typical behavioral characteristics of returns fraudsters.

Table 2.1 Types and Behavioral Characteristics of Returns Fraudsters

Types	Behavioral characteristics
Bricking	Fraudsters try to deceive sellers, such as mailing sellers empty packages and claiming that they have returned previously purchased products. The purpose of the fraudster is to convince the seller that the item has been returned and to get the refund.
Swapping	Fraudsters purchase high-value products online, then purchase similar low-value or counterfeit products, and return low-value products instead of high-value products. In doing so, fraudsters can capture the price difference between high-value products and low-value products.
Stealing and return	Fraudsters have stolen someone's bank payment card and they used it to pay for their online purchases. Fraudsters could return the products purchased with stolen payment cards before the payment is recognized as fraudulent. This could allow the fraudster to get a refund.
Wardrobing	This is a very common return fraud. Fraudsters first purchase the product online; however, they enjoy the product within the stipulated return period and return the product when the return period approaches. In this way, the fraudster not only gets a full refund, but also enjoys the product for free.
Exchanging	A fraudster buys a product online, but that product can be damaged by the fraudster. The fraudster then purchases a new version on the same online shopping platform. Finally, the fraudster sends back the old version. In this way, fraudsters are not held accountable for their own damage.

(6) Bracketing. Bracketing refers to consumers buying multiple versions of the same item (such as different colors, sizes, patterns, and styles) knowing that at least some of them will be returned (Hartmans, 2022b). After the 2019 pandemic, e-commerce has enjoyed unprecedented prosperity. However, bracketing shopping also seems to be more popular. In 2022, 68% of the respondents said that they had used bracketing when shopping online and a further 15% said "bracketing" is how they shop now (Narvar, 2022b). Consumers may prefer bracketing shopping for many reasons. First, consumers may compare different versions of a product by bracketing. Bracketing allows them to experience multiple products with a single purchase. Second, consumers may not be able to fully experience the product in-store, they may need try the product at home. Third, most of e-retailers can offer free return policies. This may inadvertently encourage consumer bracketing behavior. Because consumers can take advantage of these policies to try multiple products at no additional cost. In short, customers are very likely to order far more than they need and return most of their purchases (Frei et al., 2022; Saarijärvi et al., 2017).

2.1.1.5 Delivery-related Reasons

Unlike shopping in a brick-and-mortar store, in an e-commerce transaction the customer does not receive or use the product immediately after placing an order online. There is a process of product delivery between the seller sending out the product and the buyer receiving the product. The delivery process is a key link in e-commerce transactions, and customer satisfaction with the delivery process will affect the customer's return intention and behavior. For example, previous literature illustrated that post-delivery satisfaction has a much stronger impact on overall customer satisfaction and product return intention than price perception (Jiang & Rosenbloom, 2005). If consumers are not satisfied with the delivery service, they are also likely to initiate a return.

(1) During the transportation of the products, the product may be damaged and returned (Frei et al., 2022). Damage can occur during handling and distribution activities (Shramenko et al., 2018). On the one hand, as the volume of online transactions increases sharply, the number of packages that need to be transported will also increase dramatically. On the other hand, as online transactions expand geographically, transportation distances will increase accordingly. Increases in the number of packages and distances traveled may increase the risk of products being

damaged in the transportation. According to a report in 2016, customers who received damaged packages accounted for 20% of the respondents (Saleh, 2016). Another report 5 years later showed that 40-60% of respondents received damaged packages (Nshift, 2021). Especially products with relatively simple external packaging are more likely to be damaged in handling and distribution activities. During the holiday season, when there is a high volume of transactions, it is more common for products or packaging to be damaged. If the customer finds that the product is damaged and cannot be used when receiving the products, the customer may choose to return the product.

(2) Delay in delivery. Delivery delays may result in the customer receiving an item that is no longer needed and the customer may initiate a return (Frei et al., 2022; Saarijärvi et al., 2017). According to Sale Cycle, 7% of products are returned because they're delivered late (Soocial, 2023). It can be seen that delivery delays can also be one of the reasons for returns. Delivery delay, defined as a purchase that arrives later than promised (Holloway & Beatty, 2003), can lead to negative outcomes: dissatisfaction, intention not to repurchase, intention to complain, and intention to return (Liao & Keng, 2013). In the process of product distribution, it is a common phenomenon that the delivery is delayed due to unforeseen reasons. For example, orders may get delayed due to unexpected shipping or supply problems. About 45% of consumers said they are less likely to keep ordering from the same e-retailer after they experience a late delivery (Fox, 2022a). Research indicated that the likelihood of an order being returned by a consumer depends on the consistency between an e-retailer's promise to deliver an order and the actual delivery of the order (Rao et al., 2014; Zhao et al., 2018). In online transactions, participants in the logistics supply chain (including manufacturers, e-retailers, logistics agencies, etc.) need to work together to deliver products to customers. This means that if some supply chain partners are incapacitated or fail, then this is likely to cause delays in delivery. For example, during the Christmas period, e-retailers' logistics capacity cannot withstand the pressure brought by the large number of orders from consumers. If the logistics provider does not have sufficient capacity to deliver products to consumers in a timely manner, it may lead to consumer dissatisfaction and product returns.

2.1.1.6 Competition-related Factors

Customers tend to look for products in different stores, and then compare the product's function, quality, price, etc., and then decide whether to buy or how much to buy (Akrin, 2021). Previous literature suggested that external market changes can cause consumers to initiate returns (Pei & Paswan, 2018). Another literature found that whether customers find a better product or price affects return frequency (Powers & Jack, 2015). These findings enlighten us on the factors related to competition that may influence a customer's decision to initiate a return, and this is mainly reflected in several aspects.

(1) Product price. It is a common situation for customers to return a product they have already purchased because they have found a better product price (Frei et al., 2022; Saarijärvi et al., 2017). First of all, one of the benefits of online shopping is that consumers can switch between various shopping platforms, so customers with high price sensitivity are more likely to conduct information search and price comparison activities on multiple shopping platforms (Fisher, 2022). Due to fierce competition in the market, different online sellers may sell the same or similar products at different prices. Consumers can find better product prices through various channels (e.g., different shopping platforms, price comparison sites, recommendations from friends, and social media recommendations). If consumers find other channels or sellers offering more competitive prices, they may choose to return the item and switch to a better option (Frei et al., 2022; Saarijärvi et al., 2017). For example, many online grocery retailers offer "deals of the day." If another e-retailer offers a more competitive price, the customer may choose to return the item and buy the lower priced competitor's product. Second, even within the same e-retailer, a change in the price of a product from that e-retailer can motivate consumers to return an item. For example, due to the fierce competition in the e-commerce, various e-retailers often launch attractive promotions, including discounts, specials, coupons, etc., to attract customer participation and increase online sales. If a customer makes an online purchase and finds out that the e-retailer has launched a more attractive promotion shortly after the customer purchases, they may choose to return and re-purchase to enjoy a lower price. Perhaps it has something to do with the sense of loss that consumers feel when they buy a product and then learn that they have an opportunity to get a lower price.

(2) Different online retailers may have different suppliers or purchase channels. This may result in differences in product quality. Customers may be more inclined to

return the product and buy the competitor's product if the competitor's product is of higher quality. Customers are more likely to return an item in favor of a competitor's product, especially if the competitor's product has many positive reviews. First, customers may continue to search different brands or products after purchasing to determine whether they have made the right choice. Consumers may engage in post-purchase information searches for different reasons, such as maximizing the utility of a purchase, reducing choice uncertainty or regret, and/or satisfying curiosity (Pizzutti et al., 2022). This process or activity is known as a post-purchase evaluation and is a stage in the consumer decision-making process. In this stage, consumers evaluate their purchases and experience satisfaction or dissatisfaction (Needle, 2021). If they think the other product is better in terms of quality, they may choose to return it and buy a higher quality product. Second, a customer's buying behavior is influenced by many factors such as price, availability, social proof, scarcity, product details, social media activity, and more (Bucko et al., 2018). For example, customers often rely on product reviews and electronic word of mouth (e-WOM) to make purchasing decisions. If after their purchase they find that other products are better rated or recommended in terms of quality, they may return the original product and choose a better-quality alternative. It can be seen that market competition factors can motivate consumers to return their products, especially in a market with rich product choices, fierce price competition, and excellent after-sales service.

2.1.2 Size of Returns

The previous section covered reasons for online returns. These reasons may lead to the occurrence of online returns, but is the problem of online returns serious? Understanding the severity of online returns may require a deeper analysis of the size of online returns. For example, what is the total amount of online returns worldwide? Are online returns different in different countries? Are there differences in online return amounts for different product categories? There are other issues that need to be covered. Through these introductions, we can not only understand that online returns occur every day, but also that online returns are a serious problem. Even more worrisome, online returns could continue to fester if left unchecked.

In this section, the global return size is discussed. First, this section presents the basic facts or figures on the size of online returns globally, and then discusses the reasons why global online returns continue to rise (this reason is different from the

reasons for online returns, where the main focus is on why online returns continue to rise). Finally, this section also discusses the size of online returns from various other dimensions, including demographics, country regions, product categories, e-commerce types, product prices, and more. Gaining insight into the size of online returns helps us to understand the basic situation or severity of the online returns problem, which provides key support for the research motivation of this thesis.

2.1.2.1 Facts About the Size of Returns

With the growth of e-commerce transaction volume, the issue of returns is becoming a more and more serious challenge globally (Frei et al., 2020; Gilsenan, 2018; Li et al., 2021; Ruiz-Benítez et al., 2014). This is mainly reflected in the fact that most online shoppers have returned products, and the return frequency is relatively high. In some categories, the problem of returns is more prominent. Next, specific facts and figures will be presented.

First of all, most customers who buy online have experienced returns. The purpose of most online shoppers is to meet their needs by purchasing certain products or services. Returning their purchases is not their purpose, and returning their purchases does not satisfy their needs. However, online consumers may still return products for a variety of reasons. For example, nearly 55% of shoppers who shop online know they are likely to return at least part of their purchase (Intelligence, 2021). This data shows that they knew at the beginning of the shopping that they may need initiate their online returns. But do they choose to return the product after they actually get it? A survey showed that approximately 60% of consumers return products when they purchase from e-retailers, with 38% returning 10% of all their online purchases (Reuters Events, 2020). Another survey indicated that a quarter of online shoppers returned between 5% and 15% of the products they bought online (Dopson, 2021). This data shows that not only do consumers know they are likely to return an item before they make a purchase, but they do return it for a variety of reasons after they make a purchase.

Second, the high frequency of returns may also be one of the factors contributing to the severity of online returns. Surveys showed that everyone will return an online purchase at least once a year (Berthene, 2019). Moreover, this ratio seems to be increasing. For example, in order to get a comprehensive picture of online returns, an agency called Narvar conducted a survey on online returns in 2022 (the

agency surveyed 2,104 consumers online). According to the agency's survey data, these consumers who participated in the survey returned at least one product purchased through online shopping in the past 6 months (Narvar, 2022a). This could mean that in just a few years, online consumers have gone from returning online purchases on average once a year to twice a year. This gradual increase in return frequency may be related to many factors. For example, due to fierce market competition, e-retailers may use lenient or even free return policies as a competitive weapon (Rintamäki et al., 2021). Consumers have gradually increased the frequency of online returns under the encouragement of such a lenient return policy.

Third, products purchased online are more likely to be returned. The shopping channel can also influence whether to return an item. In brick-and-mortar stores, consumers can not only try products on the spot, but also immediately replace those products they don't like. However, in online shopping, consumers cannot experience the product before receiving it, which means online shopping is uncertain. This may result in more online returns. Surveys showed that about 20.8% of all products ordered online are returned, compared to about 9% of products purchased in physical stores (Kiniulis, 2021a; NRF, 2022a). The difference between these two data fully illustrates the impact of different shopping channels on returns. And, most people agree that online returns will continue to rise as online sales increase. In particular, the problem of online returns is likely to intensify as more and more e-retailers start offering free returns and free shipping (Lindsey, 2016; Kohan, 2022). This may not be good news for e-retailers. The reasons why customers choose to return items were discussed in the previous section, and this section discusses the reasons why online returns continue to grow.

2.1.2.2 Reasons for Continuous Growth of Return Size

According to survey data, from 2015 to 2019, the total value of global merchandise returns has grown staggeringly from $643 billion to more than $1 trillion (Statista, 2022a), and online returns are believed to be the main driver of the rapid and massive growth in overall returns (National Retail Federation, 2021b). Take the United States as an example. In 2020, e-commerce retail sales in the United States accounted for $565 billion, about 14% of total US retail sales (National Retail Federation, 2021a). However, "retail sales" in e-commerce may not mean that the final transaction is successful. Because, there are a lot of returns in online transactions. Also, there is no

set deadline for when these returns will occur. Depending on some e-retailers' return policies, online returns are even allowed within 365 days. For example, National Retail Federation (2021a) indicated that an estimated $102 billion in merchandise purchased online is returned by online shoppers (of which $7.7 billion of returned merchandise was identified as fraudulent returns). The flood of online returns is costing retailers very dearly. The survey found that, on average, $106 million in online returns can be generated for every $1 billion in online sales (National Retail Federation, 2021a). These data suggest that e-retailers may be receiving a high volume of return requests even as they sell a large number of products. The size of online returns is so huge, which may be due to the following reasons (here is why online returns continue to grow, not why consumers initiate returns).

(1) More and more Internet users become potential customers of e-commerce (Statista, 2023b). An increasing number of online transactions is one of two drivers of high returns (Ruiz-Benítez et al., 2014). First, the Internet has been called one of the greatest inventions of this era (Britannica, 2023). When the Internet was invented, it became a force that could shape the world. The magical power of the Internet quickly attracted a large number of users. An astonishing statistic is that as of January 2021, the number of Internet users worldwide has reached 4.66 billion (Netral News, 2021). The rapidly growing number of Internet users provides a large number of potential customers for e-commerce and promotes the increasing popularity of online shopping. Second, in recent years, the popularity of smart phones and the advancement of mobile Internet technology have greatly promoted the high integration of the network and human life (Netral News, 2021). To some extent, the smartphone has become the first screen of the internet user. Currently, approximately 5.22 billion people worldwide use smartphones (Netral News, 2021). More and more smartphone applications are being developed, downloaded and used. These apps make smartphones more powerful. With the improvement of the economic level and the replacement of mobile phones, the number of smartphone users is still growing rapidly. As users gradually adapt to the changes that smartphones have brought to their lives, the behavior patterns of users have changed a lot. For example, users may not only change their purchasing behavior, but also change their online return behavior. Third, there are 4.2 billion social media users worldwide (Netral News, 2021). The growth of social media users has also facilitated online shopping. Many social media users post about their latest purchases, and they comment on the use of

the product, which may inspire other potential shoppers to look for a link to buy. A typical example is Instagram, where people post pictures and add shopping links to certain products in the pictures. Others only need to click on these links, and they can easily buy the products they want. Fourth, people are already highly tied to mobile networks and smartphones. People use smartphones and mobile networks to work, live and study, which means that people will spend more time on smartphones and mobile networks. For example, people use smartphones to receive information, search for products, communicate remotely, and more. In short, with the growth of Internet users, the advancement of mobile network technology, the popularity of smart phones, the popularity of social media and other factors, more and more Internet users have become potential customers of e-commerce.

(2) According to Firstsiteguide.com, about 95% of retail sales are expected to be done online by 2040 (Djuraskovic, 2020). It can be seen that e-commerce is seizing more and more market share from offline, and online shoppers continue to transfer from PC to mobile. According to a survey conducted by Statista, the global average percentage of shoppers using smartphones is 29.3% (Statista Research Department, 2023) and South Korea has the highest proportion of Internet users who shop online via mobile phone, at 44.3% (Statista Research Department, 2023). Especially after the epidemic since 2019, the original traditional business system has been destroyed and the sales of physical stores have suffered huge losses. During the epidemic, many countries introduced laws to strictly regulate the contact distance between people. With the advantages of remote transactions, e-commerce has gained a larger market share. On the one hand, consumers who have rarely used online shopping have to install shopping applications in smartphones or order on the computer. On the other hand, many physical store retailers have also accelerated the process of omni-channel construction, and more use of online or digital services to provide convenience for consumers (for example, marked the location of the store in Google Maps, uploaded pictures of physical stores, business time, service scope, phone number, etc.). However, this may also mean more online returns. First of all, the characteristics of e-commerce's remote transactions determine that products purchased online often have a high return rate. E-commerce has created new distribution channels and online shopping trends to increase the needs and desires of online consumers (Selvaraju & Karthikeyan, 2016). However, more online shopping also brings more online returns. At least 30% of all products ordered online are returned, compared to 9% of products

purchased in-store (Reagan, 2019). The previous section has elaborated on why online shopping has a higher return rate than shopping in physical stores. Among them, the most important reason is the uncertainty of online shopping. Secondly, compared to using desktop computers to shop, mobile shopping (that is, consumers use mobile devices such as smartphones and shopping applications to shop) may also increase a large number of online returns. A study indicated that conversation via mobile devices are more likely to be task-oriented behaviors, while conversation via PC devices are more likely to be exploration-oriented browsing behaviors (Raphaeli et al., 2017). This could mean more use of mobile devices by customers when actually shopping. Installing mobile applications on smartphones is a common practice and is how smartphones become "smart". Moreover, applications in the retail field are considered as one of the fastest growing categories in all applications (Williams, 2018). For example, according to reports, about 20% of Starbucks' in-store transactions come from the applications installed on consumers' smartphones (Forbes, 2015). Another study showed that applications users buy more frequently, buy more products, and spend more than non-users. However, applications users also reported that their return frequency increased by 35% (Narang & Shankar, 2019). Therefore, the popularity of smartphones and shopping applications may jointly promote a large number of online returns.

(3) The reason for the continued growth of global online returns may also be related to the high online transaction volume of certain categories. For example, in global online transactions, the transaction volume of categories such as clothing, accessories, electronics, cleaning supplies, office supplies, etc. has grown rapidly. All these products are consumables in the daily life of consumers. Consumables refer to products that are gradually consumed or reduced during use and need to be replaced (or replenished) frequently (Max, 2017). Since consumables have higher frequency of use, shorter service life, and lower product prices, consumers are more likely to purchase and replace consumables frequently. According to a report, the top 10 best-selling products on Amazon include: home, beauty, auto, clothing, shoes, jewelry, toys, games, health, baby care, electronics, sports, outdoors, and more (Connolly, 2023). However, the top-selling categories in these online deals are also often the ones that are more likely to be returned. According to a report, clothing and footwear are the most returned items, and 75% of the returned items belong to the category of clothing accessories (Whittaker-Wood, 2019). Electronics (27%) and shoes (23%)

came in second and third (Whittaker-Wood, 2019). These consumable items are purchased and returned frequently, which is one of the reasons why online returns continue to grow.

2.1.2.3 Differences in Return Volume

The size of online returns alone is not an adequate measure of the online returns problem. It is important to understand online returns in various dimensions, especially the structure in the total volume of online returns. For researchers and e-retailers, this is critical to reduce online returns. If they cannot understand online returns from different dimensions, they cannot come up with specific and effective measures to avoid returns. For example, online returns can be analyzed in depth by demographics (such as gender, age, education level, income level, etc.), geographic region, product category, e-commerce type, payment method, etc. This could help give researchers and e-retailers a full picture of online returns, which in turn provides inspiration for avoiding returns.

(1) Demographic characteristics. For e-retailers, consumer demographics (e.g., age, gender, income, education level, etc.) and transaction-based characteristics (e.g., frequency of purchases, average price of transactions, return patterns, etc.) are critical to making their return policies (Yu & Wang, 2008). So, demographic differences in propensity to return products are also worth exploring. Previous study showed that demographic characteristics of consumers such as age, gender, and income level can partly explain their return behavior (Harris, 2010). First, age is related to the probability of return behavior. According to survey result from a company called Global Index, young people are more likely to choose to return products after shopping online (Gilsenan, 2018). As the survey showed, among the 16-24 age group, the online return rate is 59%. Among the 25-34 and 35-44 age groups, the online return rate is as high as around 70%. The online return rate of the 45-65 age group is about 40%. This may be because younger consumers generally pay more attention to fashion and trendy items, which may be more susceptible to size and style preferences, so return rates may be relatively high. Second, gender is related to return behavior. Consumers' dissatisfaction with products can cause consumer emotional disorders, which is positively related to the product's return (Powers & Jack, 2015). The research also further proposed that male consumers may experience more dissatisfaction and emotional disorders than female consumers (Powers & Jack, 2015). However, it is

interesting that male consumer's return is not higher than female consumers, which may be related to different types of products purchased by consumers of different gender. In certain product categories, female consumers' return may be relatively high. For example, in the field of fashion clothing, female consumers may be more likely to have higher requirements for size, color, style, etc., so the online return rate may be higher. Third, higher education can affect individual's cognitive functioning and learning efficacy (Guerra-Carrillo et al., 2017) and it may affect consumers' return behavior. This is because consumers with higher levels of education tend to have better information search ability, comprehension ability, judgment ability, etc. Specifically, more educated consumers are often able to collect more product information, online reviews and other auxiliary decision-making resources, and use this to make more accurate product evaluations before purchasing. For example, more educated consumers may have a better understanding of an e-retailer's product descriptions. In addition, highly educated consumers are likely to conduct more information searches and thus have better product knowledge (Jiang & Rosenbloom, 2014), and rich product knowledge is also conducive to consumers' correct evaluation of products. This helps consumers make better purchasing decisions and reduces the likelihood of product returns due to misunderstandings or incorrect product selections. Fourth, household income could be another factor that influence consumer's return behavior. Household income refers to the sum of the net income of all working-age members residing in the same dwelling unit (Besustringue et al., 2023). It often includes the income of all family members, such as wages, salaries, investment income, etc. Interestingly, this could be linked to the return behavior of family members. A survey by Power Reviews concluded that high-income households are more likely than low-income households to initiate returns (Power Reviews, 2021). Regarding the reasons for this phenomenon, the report explained that higher-income households may have more disposable income to spend on the products they want to own. If they change their mind for some reason, they want to have the option to return the item. And for low-income households, they may be primarily buying essentials online that they never intended to return (Power Reviews, 2021).

(2) Geographical differences. Customer behavior also differs in different geographic regions and may affect online retail return rates (Ahsan & Rahman, 2021). From the perspective of the size of online returns, there may be differences in major countries or regions around the world. This difference may be related to factors such

as the level of local economic development, the stage of e-commerce development, the return policy of e-retailers, logistics infrastructure, and consumer shopping habits, etc. Understanding the differences in online returns across countries can help e-retailers develop more targeted return policies.

United States: The United States is not only one of the largest e-commerce markets in the world, but also has a large scale of online returns. According to the National Retail Federation and Appriss Retail, the total U.S. return rate (including online and in-store returns) in 2021 is 16.6% (Repko, 2022), and the U.S. online return rate will jump from 18.1% in 2020 to an average of 20.8% in 2021 (NRF, 2022a). This illustrates that online returns in the US are growing. E-retailers need to be vigilant about this and control the size of online returns. Ignoring these growing returns could bring serious consequences for e-retailers. For example, return shipping costs in the U.S. reached $550 billion in 2020, a 75.2% increase from four years ago, according to a Statista report (Placek, 2022). These returns-related shipping costs could be even higher if e-retailers ignore the negative consequences of online returns. It can be seen that this problem will become more serious in the future as the volume of e-commerce transactions grows.

Europe: The European Union encourages consumers to overorder and legally return products, allowing customers to return products within 14 days of purchase for a full refund with no questions asked (European Union, 2023). This law greatly protects the rights and interests of consumers, but it may also bring about serious problems of online returns. A report showed that 52% of European consumers will initiate a return to an e-retailer if they are not satisfied (Sendcloud, 2021). Another survey showed the differences in the size of online returns across European regions (Ecommerce News, 2016): the total return rates in the Nordic and Western European regions were relatively high, at 14.69% and 14.04%, respectively. Central Europe had a slightly lower total return rate of 10.68%. The total return rates in Eastern and Southern Europe are relatively low, at 6.60% and 6.44%, respectively. Online fashion giant ASOS estimated that 25% of orders from women in the UK are returned, compared with 70% of German orders (Whittaker-Wood, 2019). Consumers from Germany return more than half (52%) of products purchased online to e-retailers, making them the most likely to change their minds in Europe (Whittaker-Wood, 2019). A survey indicated that the main reason French online shoppers return items is damaged or defective items (Yltaevae, 2023). And, this survey illustrated that one-

third of consumers return products because they did not match the product description. The figures suggest that online returns are also a thorn in the sidelines in Europe. And, in some countries in Europe, the problem of online returns is even worse.

Australia: Australia's Internet penetration rate is 85%, and 65% of customers shop online (Statista, 2022b). It can be seen that Australia is a fertile ground for e-commerce. However, online shoppers in Australia may also have higher returns rate. According to Narvar report, online shoppers in Australia are the group most likely to return items compared to consumers in countries such as the US, UK, France and Germany (Narvar, 2019); in Australia, 52% of customers would believe that returning a product is easy. A survey from Statista (Statista, 2023d) showed that when asked 'the most returned online purchases by category', the majority of Australian respondents chose 'clothing' as the answer, followed by bags and accessories, shoes, luggage, consumer electrical appliances, household applications, etc. The figures may suggest Australia has a serious problem with online returns.

China: China is the world's largest e-commerce market (Abrams, 2021). From 2014 to 2020, China has become the world's largest online retail market for eight consecutive years. This may be due to the following two reasons: First, the existing number of consumers buying online. According to statistics, China has the largest online customer base in the world, close to 850 million (Statista, 2023c). Second, the growing purchasing power of Chinese consumers. China's economy is still developing at a high speed, and the income level of Chinese consumers is continuously increasing. These two factors will enable China's e-commerce market to maintain its leading position in the future (Abrams, 2021). However, with the huge increase in e-commerce transaction volume, a large number of online returns have also followed. This may be due to fierce market competition and consumer protection laws. For example, e-commerce sites operating in China are required to provide customers with a hassle-free 7-day return service (Millward, 2014). This means that online retailers in China could be exposed to a high volume of online returns (whether opportunistic or fraudulent). JFdaily and QQsurvey investigated online returns of Chinese consumers and the survey showed that when consumers encounter problems in online shopping, 89% of the respondents made it clear that they would choose to return the products (JFdaily, 2017). Therefore, China's e-retailers are full of opportunities in online retailing, but the problem of online returns is also a serious challenge for e-retailers in the Chinese market.

India: India is the second largest economy in Asia and the second largest internet market in the world. Moreover, India has more than 400 million Internet users, surpassing the United States and ranking second in the world. India's e-commerce potential remains largely untapped and will still grow rapidly between 2021 and 2025. Because more and more e-retailers launch or expand their online stores. However, compared with mature e-commerce markets such as Europe and the United States, India's return rate is relatively high. According to statistics, in 2019, the return rate of e-commerce products in India was 27% for cash on delivery and 12% for prepaid orders (Clickpost, 2023). According to Instamojo, the return rate for online shopping in India is currently pegged at between 25-40% (Bhattacharjee, 2022). There are many reasons why India has such a high return rate. First of all, the online shopping categories that Indian consumers are most interested in are electronic products, clothing, shoes and bags, furniture, etc. In online shopping, products in these categories are consumables, and the prices are relatively low. But these categories are indeed product categories with a relatively high return rate. Second, an important part of e-commerce is delivery. Unlike buying in a physical store, consumers get the product immediately. In e-commerce, products need to be delivered to consumers. However, the transportation in India is inconvenient and the logistics network is not smooth. This means longer shipping time and consumers may initiate returns because they waited too long or changed their minds (Dopson, 2021).

(3) Product Category. Different product categories may have different return rates. Across categories, some have significantly higher return rates than other product categories. This may be related to the price, function, nature (durable or consumable) of the product category. According to Power Reviews (2021), the categories most often returned by online shoppers are: clothing (88%), shoes (44%) and electronics (43%). In e-commerce, fashion products can suffer from higher return rates. In general, the return rate of fashion products is estimated to be between 30% and 40% (Reagan, 2019), and some statistics even put the return rate of 50% in the fashion industry (Stöcker et al., 2021). The online return rate in the fashion industry is very high for three main reasons. First, there is a low degree of product standardization in the fashion industry (Difrancesco et al., 2018). Fashion is a very subjective field, and consumers often have their own unique understanding of product design. If the product design does not match the consumer's perception, preferences, or expectation, the consumer may return the product. Second, customers' demand for clothing fit

(Gallino & Moreno, 2018). Fashion products often vary in size, so consumers may buy a size that doesn't fit them. If the product size is less standardized and there are large differences between sizes, consumers may choose to return the product. Third, the importance of clothing material texture (Ofek et al., 2011). There may also be differences in the material of fashion products. If the quality of the product does not meet consumers' expectations, such as uncomfortable fabrics or poor workmanship, consumers may choose to return the product.

(4) Types of e-commerce. With the development of e-commerce, new models are constantly emerging in business practice. In addition to traditional e-commerce, there are social commerce, live e-commerce, etc. So, under different e-commerce models, what is the difference in the size of its returns? Knowing the return differences between different types of e-commerce could help e-retailers to develop more targeted return policies.

First, traditional e-commerce. Take the global traditional e-commerce giant Amazon as an example. 61% of Amazon customers found Amazon’s return process easy. This may be related to Amazon’s consistent concern about consumers' return experience. Today, Amazon’s average return rate is between 5% and 15% (Soocial, 2023). However, as mentioned earlier, the return rate depends on the category. For example, some categories such as clothing and electronics have return rates as high as 40%. Of all Amazon customers who return an item, 10% simply because don’t like their purchases, 9% because they changed their mind, and 5% because the package was late or not delivered in time (Soocial, 2023). Amazon is a typical representative of traditional e-commerce, and other traditional e-commerce companies may face a similar situation. Therefore, these data may be instructive for other traditional e-commerce companies.

Second, social commerce. Combining social media and Web 2.0 technologies, social commerce encourages online purchases and online interactions throughout the shopping process (Meilatinova, 2021). By leveraging social networks, social commerce provides useful features such as online reviews, hashtags, and profiles, encouraging customers to share personalized shopping experiences in the form of "user-generated content" (Li & Ku, 2018). In 2022, social commerce generated an estimated $728 billion in revenue worldwide and will reach approximately $6.2 trillion in 2030 (Chevalier, 2023). While social commerce is developing rapidly, its problem related to online returns is also serious. 66% of online shoppers keep

cautious after returning their products purchased from social media channels (Business Wire, 2022). This seems to suggest that once online shoppers experience a failed purchase on a social media channel, they are more likely to give up shopping on the social media channel again. Specifically, a study of 1,002 US social shoppers revealed that the experience of returning an online purchase makes most shoppers "unlikely to buy again on social channels" as well as "likely to buy directly on the brand site" (Business Wire, 2022). According to the statistic, 8% of online shoppers and 36% of experienced social shoppers returned products purchased in social commerce (Business Wire, 2022). In general, social e-commerce has great development prospects, but its returns issues cannot be ignored.

Third, live e-commerce. Through real-time interaction, live e-commerce connects customer perception and e-commerce shopping functions, creating a virtual shopping environment (Cai & Wohn, 2019). The advantage of this type of shopping is that it is novel, entertainment-driven, and highly interactive. Moreover, many streamers of live shopping have their own fans, so it is more conducive to precision marketing. When selling products by live streaming, the shopping atmosphere created by a large number of fans watching online at the same time may prompt many fans to make impulsive shopping decisions. Taking China as an example, as of June 2020, the number of users of China's live streaming e-commerce has reached 309 million. However, while live streaming e-commerce has achieved rapid growth, it is also facing a serious online return dilemma like traditional e-commerce. Although social presence and online interaction can help enhance the shopping experience and reduce customer uncertainty (Hajli, 2015), it does not seem to reduce the return rate of live e-commerce. The "2020 China Live E-commerce Industry Research Report" pointed out that the average return rate of live e-commerce is 30%-50%, which is higher than the 10%-15% return rate of traditional e-commerce (E-commerce Headlines, 2023). In China, there are a lot of negative news related to live streaming e-commerce, most of which are caused by streamers selling substandard or unusable products. During the “618 Shopping Festival” in 2022, the return rate of small and medium sellers in some clothing categories is almost 70% (E-commerce Headlines, 2023). It can be seen that if there is a problem with product quality, most consumers will not tolerate product defects because of the attractiveness of streamers or influencers.

(5) Payment method. Payment method refers to the method used to complete the payment between the customer and the e-retailer during the transaction process.

As an important part of online transactions, payment methods may affect consumer return behavior. That is, different payment methods may be associated with different return rate. According to statistics, the return rate of shoppers paying by credit card is as high as 22.78% (National Retail Federation, 2021b). This return rate is the highest among all payment methods. Interestingly, customers who paid with cash had a much lower return rate (12.69%). The lowest return rates were for shoppers who paid with a debit card at just 7.04%. The relationship between consumers' payment methods and return rates is both interesting and complex. The causal relationship between payment methods and return behavior still needs more in-depth research. However, it is expected that this phenomenon may be related to consumers' financial capabilities and spending habits. This statistic is important because it seems to suggest that e-retailers can reduce online shoppers' return behavior by encouraging online shoppers to use payment methods with lower return rates.

2.1.3 Types of Returns

The types of return refer to the classifying of different situations in which consumers need to return the products to sellers after purchasing products. Classifying return types helps to understand the complex phenomenon of returns. According to different perspectives, return types can be divided according to several dimensions. For example, it can be classified according to the reason, purpose, frequency, channel, etc. Through the classification of return types, e-retailers can better understand the reasons why consumers initiate online returns, so as to make better return processing strategies, thereby reducing unnecessary cost, and improving customer satisfaction. Previous literature has proposed classifications of various return types. This section describes these types.

2.1.3.1 Types Based on Return Legitimacy

Since the return behavior is related to the protection of consumer rights, the classification of return types can be classified according to whether the return behavior complies with the legal provisions. For example, Pei and Paswan (2018) identified two types of customer return behavior: legitimate returns and opportunity returns.

(1) Legitimate returns. Legitimate returns are defined as returns that are acceptable in mature markets (Pei & Paswan, 2018). When shopping online,

consumers have the right of withdrawal. Consumer right of withdrawal (or consumer right of cooling-off), refers to consumers with the right to cancel the purchase contract within a certain time after purchasing products or services without giving any reason or bearing any fees (Rekaiti & Van den Bergh, 2000; Sparks et al., 2014). Consumer right of withdrawal is the extension of consumers' right to know and right to choose. In many countries, consumer's right to return the products without reason is protected by law (Liberto, 2023). For example, Germany has passed the law to protect consumer's right to return. The law stipulates that from the date of receiving the product, consumers could return the unsatisfactory products to e-retailers within 14 days. Even, consumers can submit a return request without telling reasons for their returns. These legitimate returns could include the returns initiated due to defective product returns, seller's fault, buyer's remorse, or external market changes (Pei & Paswan, 2018). When the return is due to the above factors, it is not considered illegal for the consumer to initiate the return. The research also found that factors such as impulsiveness, desire for uniqueness, product compatibility, perceived risk, and social influence are associated to legitimate returns (Pei & Paswan, 2018).

(2) Opportunistic return behavior. Opportunistic return behavior primarily involves questionable behavior by customers abusing e-retailer return policies (Kaushik et al., 2020). Pei and Paswan (2018) found that factors such as unethical, self-monitoring, and social influence are associated to opportunistic returns. Opportunistic return behavior not only violate the retailer's return policy, but can also harm other online consumers. For example, opportunistic returns may cause e-retailers to increase restrictive return policy. E-retailers may therefore have more gatekeeping procedures to control the opportunistic return behavior. Other consumers with normal return requests may need to wait more time and submit more purchase information for gatekeeping activities. And, since e-retailers need to invest in measures to reduce opportunistic returns (for example, more labor or software that can help identify opportunistic returns), this could lead to higher operating costs for e-retailers and higher product prices. If the e-retailer decides to resell the returned item as an open box item, the price of the new product will increase further (Akçay et al., 2013). In summary, opportunistic returns are neither supported by law nor permitted by e-retailer returns policies. This type of return harms e-retailers and other consumers who have normal reasons to return products.

2.1.3.2 Types Based on Return Initiation

Depending on the initiation source, Rogers et al. (2002) divided returns into five categories: consumer returns, marketing (commercial) returns, asset returns, product recalls, and environmental returns. This classification is based on traditional sales, not online retailing. However, this classification is still helpful for understanding returns, and this classification also concerns consumers. Therefore, here is also an introduction to Rogers' classification of return types.

(1) Consumer returns. Consumer returns could be the most difficult of all return types for e-retailers to deal with because they are unpredictable (Rogers et al., 2002). There are many reasons why consumer returns can be difficult to predict accurately. Consumer behavior is highly individualized, and each consumer's motivation of return, willingness to return, and demand for return are affected by different factors. For example, consumers may initiate online returns for different reasons, including product quality issues, products not meeting expectations, inaccurate product descriptions, inappropriate sizes, logistics issues, and more. These individual reasons complicate accurate forecasting of online returns. Also, some consumers abuse return policies, adding to the complexity of predicting returns. Therefore, consumer returns are more difficult to predict. Since it is difficult to predict, this could affect the processing of returns (Rogers et al., 2002). For example, e-retailers may not be able to accurately predict which products will be returned in large numbers and when. Furthermore, they cannot prepare enough storage space and manpower for these returns. The reason consumers return products is often that the product is defective or the customer is not satisfied (Rogers et al., 2002). Other common reasons include fit, size, missed collection, or difficult handling (Rogers & Tibben-Lembke, 1999). In the previous section, the reasons for returns have been discussed. Regardless of the reason for returns, consumer-initiated returns have a huge impact on e-retailers.

(2) Marketing returns. Marketing returns are products that are returned from downstream locations in the supply chain to upstream locations. For example, e-retailers return seasonal items to manufacturers after the season ends (Rogers et al., 2002). These marketing returns usually occur because of “slow sales, quality issues, or the need to reposition inventory” (Rogers et al., 2002). First, slow sales are one of the common reasons for such returns. In order to capture the market, e-retailers may purchase a large number of products in advance. However, changes in market demand

are often unpredictable. For example, products that once dominated the market for a long time, suddenly saw little or no demand. At this time, sales can become extremely slow. In order to avoid inventory backlog and stranded funds, e-retailers may choose to return a large number of previously purchased inventory products to suppliers. Second, product quality problems are also an important reason for such returns. As explained in the previous section, product quality issues have always been the main reason for consumers to return products. For a product, if product quality problems are serious, downstream participants in the supply chain (retailers) are likely to return their inventory to upstream suppliers or manufacturers in order to reduce losses or maintain reputation, rather than insisting on selling to consumers. For example, a product presents a security risk due to a design flaw. Third, the need to reposition the inventory. E-retailers always stock in favor of best-selling items. When e-retailers find that certain items are not easy to sell, perhaps e-retailers will consider adjusting their inventory. To make room in inventory for easier-to-sell items, e-retailers may return some items to manufacturers, and marketing returns happen.

(3) Asset returns. Asset returns are products (assets) that a company wishes to return. This is also a common return type. Assets can be expensive, such as heavy machinery, or less expensive and reusable assets (Rogers et al., 2002). A common situation is large machinery and equipment. For example, some productive enterprises purchase an expensive and large mechanical equipment for production, and this large mechanical equipment requires regular repairs, maintenance, or replacement of parts. So, asset returns happen when these large machineries are sent back to the supplier or the manufacturer.

(4) Product recalls. A product recall is an attempt to remove a product from the market because it may have manufacturing defects, design defects, safety risks, product contamination, user abuse (Berman, 1999). When a product recall occurs, companies often issue recall announcements to the society through social media, official websites, newspapers, radio, etc., so that consumers who have purchased this product know and follow the announcement to return the product. In general, widespread product recalls are uncommon. Most of the previous product recalls were related to serious safety risks and quality problems (Rogers et al., 2002). For example, a product has a design defect or a manufacturing defect that is likely to cause harm to a consumer while using the product. Product quality issues are another reason that can lead to product recalls. Because product quality problems often lead to the failure of

normal use of the product or a shortened lifespan. Consumers may complain about this, which will undoubtedly affect product reputation and corporate reputation. In addition to safety risks and quality problems that may lead to product recalls, there is another reason that can lead to product recalls that violates relevant laws and regulations (Rogers et al., 2002). If the product does not meet the relevant regulatory standards or certification requirements, the regulatory agency may require the manufacturer to conduct a recall to comply with laws and regulations. For example, children's toys contain unsafe levels of lead. This can seriously endanger children's intelligence. Most countries have strict regulations on lead content in toys. Product recall aims at protecting the rights and safety of consumers, preventing potential injury or loss, and maintaining a company's reputation and brand image. After discovering a problem that requires a product recall, if the company can recall the product, it will send a signal to the society or consumers that it is a responsible company.

(5) Environmental returns. Environmental returns refer to product returns due to environmental regulations or related environmental protection requirements (Rogers et al., 2002). Environmental returns are usually caused by the use of harmful substances in the product or packaging materials, or failure to meet environmental standards. First, many countries have regulations that prohibit (or restrict) the use of certain hazardous substances in the manufacture of products. If a product contains a prohibited substance (or exceeds the specified limit), the company may need to recall the product and dispose of it (Gibson, 1995). Second, in addition to the product itself, environmental regulations usually impose requirements on product packaging materials. For example, many countries restrict the use of non-degradable plastics or encourage the use of recycled materials. If a product's packaging does not meet environmental regulatory requirements, it may result in an environmental return (Azzi et al., 2012). Third, many countries have also formulated energy efficiency standards for products. These efficiency standards require appliances to meet certain requirements in terms of energy consumption. If a product does not meet energy efficiency standards, it may be required to recall it. In short, the requirements of environmental regulations may have an impact on the manufacture, packaging and sales of products, so companies need to strictly abide by these laws and regulations to avoid environmental returns.

2.1.3.3 Types Based on Return Purpose

According to classification approach of Rogers and his colleges (Rogers et al., 2002), this thesis will explore "consumer returns" in all kinds of return types. But this division is still too vague. In order to be more focused, this thesis need combine the classification of return types with the background of e-commerce. Return types in the context of e-commerce refer to the different options customers have for returning products purchased online. According to the different purposes of online returns, an article related to returns management believed that return types can be divided into four types: return for a refund, return for exchange, return for store credits, and return for warranties (Fox, 2022a). By determining which types of returns to offer, e-retailers can provide online customers with the suitable return solution.

(1) Return for a refund. The refund refers to customers receive their money for returning an item, and it includes a full or partial refund (Pei et al., 2014). This could be because the product did not meet customer's expectations, the product was damaged in delivery, or for any other reason. It's said that refund is the easiest and best-known type of returns in ecommerce (Fox, 2022a). Generally speaking, when the e-retailer receives the product returned by the customer and checks that the product is in good condition, it can issue a full or partial refund. Retailers can even decide whether to charge for return shipping, depending on the reason the customer provides for the return. Some e-retailers offer a full refund service (Pei et al., 2014), allowing full refunds without additional charges (such as restocking fees). Today, a customer's return experience depends heavily on whether they can receive a refund quickly and easily. A survey found that 77% of customers are less likely to recommend shopping online if the e-retailer takes a long time to refund (Fox, 2022a). Ensuring a fast refund process may increase customer satisfaction and loyalty. Literature examined whether an instant refund service improves the online returns experience and found that the instant refund service could increase consumer satisfaction with the experience and improve other consumer responses (Martínez-López et al., 2022). While the "return for a refund" could be an easy and convenient form of return, they are not the best option for e-retailers who lose revenue due to these returns.

Refund policy can reduce customer's transaction risk. Customers hope to find a clear and fair refund policy when they visit a retailer's website or shopping app, because a refund policy can help customers reduce the risk of online shopping. In the absence of a refund policy, customers may be hesitant to make a purchase as they may

be concerned about receiving a defective or unsatisfactory product. With a refund policy, customers know they have the option to return the product if it doesn't meet their expectations. This will undoubtedly reduce the risk of uncertainty in online shopping. For example, many e-tailers offer MBG. This policy allows customers to return products that do not meet their expectations to the original seller for a full or partial refund. Customers will be attracted and encouraged by such a policy, which effectively provides customers with insurance against potential product dissatisfaction (Akçay et al., 2013). In conclusion, a refund policy can reduce transaction risk.

In recent years, some e-retailers have tried other new refund policies to reduce costs and improve customer satisfaction. For example, e-commerce giant Amazon has even promoted a new service - returnless refund. Returnless refund is when an e-retailer processes a consumer refund request and allows the consumer to get a refund without returning the purchased item to the seller (Dopson, 2023a). This type of refund is primarily for certain types of merchandise, typically small, low-value, or difficult-to-resell products. In the traditional refund process, the consumer usually needs to send the returned product back to the seller, and the seller confirms that the product is in good condition after receiving the product, and then refunds. A returnless refund may be a better option for e-retailers because it is cheaper than having customers return the product. Data shows that 11%-13% of returned products cost twice as much as their sale prices (Dopson, 2023a). By introducing "returnless refund," merchants can process refund requests more quickly and easily, increasing customer satisfaction while reducing shipping and handling costs associated with returns. For some e-commerce companies that are low-value, perishable, hard to resell or digital products, adopting "returnless refund" can help optimize operational efficiency and customer experience.

(2) Return for exchange. Exchange is a common behavior when shopping online (Keenan, 2021). About one-third of online shoppers would prefer to exchange an item rather than request a refund when faced with return options (Narvar, 2019). An exchange occurs when a consumer returns an item to an e-retailer and wishes to exchange it for the same product in a different color, size, or style, even a completely different product. Generally speaking, when consumers request an exchange from an e-retailer, they need to return the previously purchased items to the place claimed by the e-retailer (Keenan, 2021). It could be the e-retailer's warehouse, service center, or

returns processing center. After the e-retailer receives and inspects the returned product, the e-retailer will exchange it and delivery it to the consumer.

In brick-and-mortar stores, a retailer's exchange policy can help retain more customers and drive them into the store (Yang et al., 2023). In online shopping, an e-retailer's exchange policy is just as important. For online customers, an exchange can increase the match between the customer and the purchased product, as well as reduce the cost for the customer to obtain the right product (Keenan, 2021). Given the remote technical nature of e-commerce, customers cannot touch and experience products before receiving the products (Hong & Pavlou, 2014; Shulman et al., 2011; Wood, 2001). Therefore, it is uncertain whether the product matches the consumer. Consumers can only know whether the product is suitable for them after receiving the product. Once there is a mismatch, consumers may wish to exchange the product for a different color, size or style to ensure a better fit. Plus, an exchange is often more convenient than returning and then buying another item again. By exchanging the items, online consumers can spend less time, effort, and money to obtain suitable products.

For retailers, exchange can help e-retailers retain customers and drive additional purchases (Nshift Returns, 2023). First, exchange services are a strategy in business practice to retain online customers. The ultimate goal of consumers is to buy their favorite products at an appropriate price. Exchange can help online consumers reduce the uncertainty of matching, and in turn help online consumers achieve this purpose. If an e-retailer does not offer an exchange service, consumers may turn to other e-retailers to buy. Second, cross-selling become possible when consumers choose to exchange products (Kumar et al., 2008). Cross-selling involves offering customers additional products or services related to their initial purchase (Ngobo, 2004), with the aim of increasing revenue and customer satisfaction. During the exchange, consumers may see additional products (e.g., identical products, substitutes with similar functionality, other different products). Customers who request an exchange may discover and buy more other products. Sometimes, customers may choose to upgrade their original product or choose a higher-level product when exchanging items. Also, effective cross-selling of multiple products or services increases customer retention because customer switching costs increase with cross-purchasing (Kumar et al., 2008). Additionally, e-retailers can use exchange opportunities to offer promotions and encourage customers to make additional

purchases by recommending products to customers or offering consumers special offers.

(3) Return for store credit. A store credit is one kind of credits issued by a retailer as an alternative to refunds or cash back in online shopping (Dopson, 2023b). Some e-retailers issue store credit to consumers that can be used for future purchases. When a consumer chooses to return an item to an e-retailer, the customer does not necessarily receive a refund, and they may receive a store credit. Store credit could provide several advantages or benefits to online customers and e-retailers.

Store credit can provide customers with the convenience, flexibility and reducing return cost. Compared with applying for a return and refund, consumers who choose to return for store credit often experience a simpler, faster, and more convenient service process. Additionally, store credit gives consumers more choices. For example, store credit enables consumers to freely use it in multiple online shopping scenarios provided by e-retailers (many e-retailers jointly launch store credit program that even allows consumers to buy across platforms between these e-retailers). Lastly, e-retailers often offer incentives to encourage consumers to use store credit. For example, ThredUp offers consumers free return shipping (e.g., free shipping insurance) if they choose to earn store credit instead of a refund (Sharma, 2021). Consumers can also decide to use store credit for current purchases, or accumulate it based on personalized shopping needs in order to obtain greater benefits on future purchases.

For e-retailers, store credit increases customer retention by giving consumers a reason to return to that retailer. Customer retention refers to a series of activities and actions that enterprises take to enable customers to continue to repurchase their products or services by reducing customer churn (Dassanayake & Herath, 2020). It is a measure of ability to retain customers over time. It can also reflect or predict customer engagement, customer satisfaction, electronic word of mouth, and repurchase behavior, etc. It has been suggested that 80% of sales actually come from 20% of existing customers (Dassanayake & Herath, 2020), and acquiring a new customer is five times as expensive as retaining an existing one (Caldwell, 2020). Therefore, customer retention is critical to the success of a business. And store credits could help to retain customers, so e-retailers should care about the introduction and use of store credits.

(4) Return for warranty claim. This type of return occurs when the consumer requests the return of a product that is still covered by the warranty policy (perhaps because the product is defective or damaged), and the manufacturer is responsible for repairing or replacing the product (Fox, 2022a). A warranty is a promise (or contract) from a manufacturer to a consumer that allows the consumer to return a product for repair or replacement within a specified period of time (Kenton, 2022). There are several types of warranties in online shopping, such as extended warranties agreements, third-party warranties, accidental damage and treatment plans, and more (Fox, 2022a). Regardless of the type of warranty, when a customer initiates a warranty return, the product needs to be transferred from the customer to the manufacturer. When initiating such a return, the customer need check the warranty policy of the product, and then prepare some necessary materials (may include purchase receipt, original packaging of the product, warranty contract, accessories, etc.). Depending on the warranty policy, consumers can choose to have it repaired, replaced or refunded.

In this section, the types of returns are discussed. This is related to the two studies in this thesis. On the one hand, the classification introduced in this section is divided according to the purpose of the return initiated by the customer. Such a classification of return types helps to understand the two studies in this thesis (i.e., return credits and purchase-risk notices). On the other hand, some of the points presented in this section inspired the research related to return credits (although these are two completely different types of credits). In practice, as an e-retailer, it is crucial to be familiar with the different return types. By understanding these different return types, e-retailers can develop comprehensive returns policies and procedures to meet customers' specific needs. This will help ensure a smooth and satisfying returns experience, which in turn can help increase customer satisfaction and loyalty. However, simply knowing the return type is not enough. It’s important to know more about return methods and process. The return method and return process are detailed in the next two sections.

2.1.4 Methods of Returns

The method of return in e-commerce refers to how customers return items they have purchased online. When a customer wants to return an item, the customer needs to know how to initiate and complete the return. For example, a customer may be

required to initiate an online application through a shopping app and fill in a series of information (such as a reason for return). Even, the customer may be required to pay the return fee. As customers look for ease and flexibility in returns, various methods of return have emerged to meet their needs. Currently, there are currently many ways to return products, such as door-to-door pickup, post office, BORIS (i.e., buy-online-and-return-in-store), etc. Different customers may prefer different return options, so offering multiple options can help streamline the process and increase customer satisfaction. This section discusses these methods of return.

2.1.4.1 Different Ways to Return Products in B2C E-commerce

Due to the variety of return needs, a single return method could not fully meet the customer's expectations or requirements for return. A report stated that 90% of online shoppers show a clear preference when it comes to returns (Sendcloud, 2021). Most of customers may expect a variety of convenient, fast, and low-cost return options. To meet customer return needs, 62% of retailers have offered more than one return option about 10 years ago (Charlton, 2014). At present, with the development of technology and the improvement of services, e-retailers have provided more return methods to satisfy customers. When a customer chooses to return a purchased product, offering customers multiple options of return methods could be a competitive advantage for e-retailers. On the one hand, customers may have different preferences for the convenience, timeliness, and flexibility of returns. For e-retailers, offering flexible return options for consumers matter in online shopping (Sendcloud, 2021). By providing flexible return options, e-retailers can meet customers' return needs, thereby providing customers with a better online shopping experience. For example, some customers may prefer to return an item at a brick-and-mortar store near their home, while others may prefer to have a courier pick up the return at door. On the other hand, a convenient, fast, and low-cost method of return can help e-retailers to present a responsible and customer-friendly brand image to customers. One of the benefits of online shopping for customers is the ease with which they can switch between different e-retailers. Moreover, customers always tend to choose those e-retailers with good return service. By offering a variety of return methods, e-retailers can demonstrate their attitude toward customer return needs, thereby building a positive brand image. As a business practice, most e-retailers will respect customers' need for

multiple return options (Keenan, 2021). This section is intended to advance the discussion of the methods of returning products to retailers.

(1) Door-to-door pick-up. It's reported that about 36% of online shoppers prefer return packages to be collected from the shopper's home/work place (Sendcloud, 2021). Door-to-door pick-up means that the e-retailer or logistics service provider arranges for the courier to go directly to the address declared by the customer to collect the returned product. This method allows customers to return products without going to the physical store in person, but customers wait at home (or office) for the courier to arrive and take the returned products. Since this was the only option available when returns management was born, door-to-door pick-up is considered a more traditional method of returns (Venosta & Temperelli, 2020). From the perspective of third-party logistics (3PL), the general principle of door-to-door pick-up is similar to door-to-door delivery in forward logistics. The difference is that instead of the package being delivered to the customer, the courier picks up the returned product from the customer. Specifically, after the e-retailer has reviewed the customer's return application, the e-retailer can call the courier (some e-retailers set up the door-to-door pick-up or home collection option in shopping App, allowing customers to choose an appointment pickup time in the options), and the courier will arrive within a certain period of time that the customer declares and picks up the returned product.

Advantages: Door-to-door pickup has many advantages and is the common return method used by most consumers. First of all, door-to-door pickup is very convenient (kumari, 2023). Consumers only need to call the e-retailer or make an appointment online, and the courier will come to pick up the package at the agreed time. Therefore, this method provides convenience to consumers - it can help consumers complete returns in a time-saving and labor-saving manner (kumari, 2023). Second, for some large products such as furniture, TVs, refrigerators, etc., door-to-door pickup can not only reduce the troubles of consumers, but also reduce the risk of products being damaged on the way. Because these large products often require special packaging materials and packaging technology. Third, for some special groups, such as the elderly and the disabled, door-to-door pickup is more important. These special groups are unable to travel due to physical or physiological reasons, and door-to-door pickup can help them complete the return process. Fourth, the traceability of the return process. After the courier checks and collects the return, the courier will

give the consumer a return receipt. Consumers can track returns based on the information on the receipt. For online shoppers, this means consumers can rest easy knowing if a return arrived safely at the e-retailer. In short, door-to-door pickup provides a seamless solution for transporting goods from one location to another (kumari, 2023).

Disadvantages: While there are many advantages, this return method also has disadvantages. First, if returning a product through door-to-door pickup, consumers need to negotiate a pickup time with the e-retailer or logistics service provider. However, finding a consistent time may not be easy. Second, after determining the pick-up time, consumers often need to wait at home for the courier to pick up the products. Sometimes, the wait time may be longer. It can also be a mental burden for consumers. Third, door-to-door pickup usually requires more resources (including manpower, time, fuel, etc.), so door-to-door pickup can be expensive. If the e-retailer doesn't offer free returns, or if the consumer doesn't purchase shipping insurance, the consumer typically has to bear the shipping costs. This could be a financial burden on consumers. Fourth, for many consumers, privacy is also a problem to consider. Because they need to provide personal information for door-to-door pickup. Also, some consumers may be concerned about strangers entering their personal space.

(2) Collection and delivery point (CDP). A CDP is a location or facility provided by a logistics agency as a hub for fulfilling product deliveries and collecting customer returns (Xu et al., 2011). To increase efficiency and provide sustainability to the system, the location of the CDP needed to maximize accessibility to potential users (Oliveira et al., 2019). Therefore, CDPs are usually located in areas that are easily accessible by consumers. Returning through CDP involves shipping the product to a location specified by the e-retailer. It is common practice for e-retailers to provide customers with prepaid shipping labels to affix to their packages (Easyship, 2023), which they then send to CDP. After receiving a returned product, the e-retailer needs to inspect the product to make sure it is in original condition and then process the refund for the customer. According to Rebound, up to 47% of customers choose to return purchased products through CDP (SaleCycle, 2020). If it is based on whether there is manual participation in the management on site, CDP can be divided into two types: attended or unattended (Xue et al., 2019).

First, attended CDP. “Attended” means that the collection and delivery points are managed manually (Xu et al., 2011). The attended CDP could be directly owned

and operated by third-party logistics agencies, such as post offices and express companies. In addition to logistics agencies, other agencies (such as supermarkets, bars, book stores, and laundry stores, etc.) can also sign agreements with third-party logistics agencies to operate CDP service. Returns via post office are the most popular type in attended CDP. It's reported that about 45% of online shoppers prefer to have their packages sent to a delivery point (post office, parcel store) when returning an item (Sendcloud, 2021).

Advantages: First of all, many brick-and-mortar stores are available as CDP options. For example, supermarkets, gas stations, bars, bookstores, pharmacies, post offices, and laundromats (Oliveira et al., 2019). This provides more options for operating a CDP. Especially considering that CDP needs to be established in areas with concentrated population (Kedia et al., 2019). Second, for these physical stores, CDP can serve as a way to convert potential customers into actual customers. Even though people come to a CDP with the intention of returning an item, that purpose does not prevent them from becoming a customer of the business operating the CDP. Companies operating CDPs can convert these customers through product displays, promotions, coupons, etc. Third, the CDP method is also friendly to the environment to a certain extent. Because the reduction of travel distance means that the use of transport vehicles will also be reduced, thereby reducing vehicle exhaust emission and pollution (Buldeo Rai et al., 2019; Kedia et al., 2019). And there are often a lot of harmful substances in the car exhaust. Fourth, CDP could provide more convenience than other return methods in terms of return time and route planning. Because customers can combine CDP locations with their daily travel routes. For example, customers can return their purchases on their way to or from get off work, thus giving online customers more choices (including time, location, and method of return).

Disadvantages: There may be some benefits from increased traffic saturation and optimization of travel distances. But CDPs may also bring disadvantages to some customers. First, the economic cost. There may be costs incurred in bringing returns back to CDP. For example, the cost of gas for driving. For some customers, this may become an additional financial burden. Second, time cost. Unlike door-to-door pickup, customers may need to drive their own cars to bring returns to these CDP centers. This may take some time from the customer. Third, transportation risks. While the customer is taking the returned item back to CDP, there is a chance that the item may

be damaged in transit. In short, for different customers, CDP may have both advantages and disadvantages.

Second, unattended CDP. With the development of automation technology, various unattended CDPs began to appear in business. Among them, the most common unattended CDP is the smart locker (Xu et al., 2011). Smart lockers have been widely used in reverse logistics of e-commerce and are popular for their convenience. Compared to other last-mile delivery options, research showed that smart lockers have advantages (Song & Gamborg Nielsen, 2017). According to Rebound, up to 28% of customers choose to return purchased products through smart lockers (SaleCycle, 2020). A study showed that convenience, reliability, corporate image, service quality, privacy security are the factors that influence customers to use smart lockers, and these influences are mediated by transaction cost and perceived value (Ali & Rafiq, 2021). This research finding may also apply to other types of unattended CDPs and logistics service providers can improve return service accordingly.

Advantages: First of all, the opening time of unattended CDP is generally unlimited, and customers who need to return can use it at any time. Unattended CDP provides customers with a 24/7 return service, and customers can store returned items in CDP (for example, smart lockers) at their own convenient time, regardless of the business hours of logistics agencies. As a result, customers who want to return an item can have more time or more flexibility to process their return. Second, customers do not need to contact other workers during the return process. The unattended CDP system simplifies returns logistics by automating the process. Since 2019, under the background of the global outbreak of the epidemic, the contactless return method is more popular among customers who need to return. Third, unattended CDP may be more cost-effective (Punakivi, 2003). Compared with return methods that require manual participation, unattended CDP has the advantage of lower operating costs. For merchants, setting up an unattended CDP can reduce labor costs in the return processing, because returned items can be stored directly in the cabinet without additional manual processing.

Disadvantage: The unattended CDPs also have some disadvantages. First, unattended CDPs are often constrained by their own facilities. For example, the dimensions and weight of the returned product need to comply with smart locker requirements. Smart lockers may not accommodate oversized or heavy returns.

Second, the location of your unattended CDP is very important to success. These locations must be areas of high population density (Song & Gamborg Nielsen, 2017). This poses a significant challenge to the operational capabilities of unattended CDP operators. Third, security issues. Because it is unattended, CDP facilities are likely to encounter some security issues. For example, vandalism of lockers results in the loss of returned items. In short, while unattended CDP provides economical, convenient, and automated returns, it also has some disadvantages.

(3) Buy-Online-and-Return-in-Store. Although e-retailers offer free shipping for product returns, 44% of respondents still prefer in-store returns (Intelligence, 2021). Buy-online-and-return-in-store (BORIS) is one kind of service that integrates the purchases and returns process, allowing consumers to buy products online and return them to a nearby brick-and-mortar store or other drop-off points. Online customers could benefit from more services without paying additional fees such as return logistics, and can receive their refunds faster (He et al., 2020). As an important omnichannel strategy, BORIS can be commonly observed in business practice. 62% of shoppers are more likely to shop online if they can return an item in-store (Patel, 2020). In addition, e-retailers usually offer convenient returns through brick-and-mortar stores, avoiding the burden of packaging and shipping products back to e-retailers (Landin & Harrysson, 2015).

BORIS is important to both e-retailers and customers. On the one hand, nearly two-thirds of shoppers are more likely to shop online if they can return their purchase to a physical store (Soocial, 2023). On the other hand, offering in-store returns means some customers may exchange items or purchase other products. In addition, BORIS services can also help retailers integrate after-sales services for their online and store channels. Given the convenience of BORIS, approximately 88% of the top 100 retailers in the US have started using BORIS (Leberman, 2015). For online customers, BORIS is also a good choice and experience. Cost avoiding and speed of returns is the most common reason for those choosing to return items purchased online to a physical store. For example, when a customer is disappointed with an item, the customer can go directly to the store for an exchange or return, which means saving lots of time and getting the refund right away.

Advantages: First of all, 79% of online shoppers expect free shipping (Patel, 2020). However, offering free returns for online customer returns is very expensive. When customers choose BORIS, e-retailers can save on shipping costs while still

maintaining customer satisfaction (Patel, 2020). Second, the BORIS model allows consumers to return items at the nearest physical store. This means that customers can see their returns being picked up by store associates, and therefore do not have to worry about their returns being lost. And, store associates can process returns as soon as the product arrives at the store. Not having to worry about lost returns and being able to process returns on the spot can reduce the psychological burden on customers. Third, for e-retailers, offering in-store returns means some customers may buy something else (Patel, 2020). The BORIS model encourages shoppers to visit brick-and-mortar stores, thereby increasing in-store traffic and potentially increasing add-on and cross-sell opportunities. Also, sales associates in brick-and-mortar stores can interact with customers to offer purchase recommendations. Fourth, instant refunds. When returning an item in a physical store, the merchant can process the refund immediately, and the consumer can get the refund on the spot, avoiding the delay of waiting for an online refund. Previous research has proven that instant refunds are very important for enhancing the customer experience (Martínez-López et al., 2022). BORIS is very attractive to customers because they can get the refund immediately after the inspection.

Disadvantage: First, when e-retailers offer BORIS to online customers, it makes returns easier for some customers. So, with such an easy way to return items, customers who would otherwise shop in-store may turn to online shopping. More consumers shifting from brick-and-mortar stores to online stores may increase the average return rate of products. Second, BORIS may increase the difficulty of management. Combining online purchases with physical store returns can add to the complexity of day-to-day management. For example, the normal operation of BORIS often needs to ensure the seamless connection of various systems and processes, which is a great challenge for operators. In addition, the returned goods need to be rearranged and re-shelved in time, otherwise it may lead to inaccurate inventory, which also poses a serious challenge to inventory management. Third, the BORIS model may not be suitable for certain products, especially large, fragile, or heavy items. Because customers need to return to the store by themselves, some special items may be difficult for customers to handle, such as repackaging and shipping. For such items, it is best to use door-to-door pick-up.

2.1.4.2 What Factors Influence a Customer's Choice of Return Methods?

According to previous research, the factors influencing consumers' decision-making behavior can be divided into two categories: non-situational factors and situational factors (Zarei et al., 2020). Among them, non-situational factors are “the general and persistent characteristics of an individual or an object” (Zhuang et al., 2006), which mainly include consumer characteristics, product characteristics and retailer characteristics. Situational factors can be categorized into physical environment, social environment, temporal perspective, task definition, and customer’s antecedent state (Gensler et al., 2007). When a consumer chooses to return an item, these factors can influence the consumer's choice of a particular return method.

(1) Non-situational factors. In non-situational factors, the factors that affect the choice of customer return methods mainly include three aspects: product attributes, consumer characteristics, and retailer characteristics.

First, the method of product return depends on the nature and category of the product. Depending on the attributes of the product to be returned (including material, shape, size, etc.), customers may need to choose different return methods. For example, if a customer is returning a large desk, a smart locker might not be a good option. Because the size of the desk can far exceed the size of the smart locker. As another example, when consumers want to return seafood products, smart locker is not a good choice. Since most smart lockers do not have refrigeration functions, these seafood products are likely to spoil. Therefore, consumers need to choose the return method according to the attributes of different products.

Second, consumer characteristics include demographic and psychological characteristics, which may affect which channel consumers choose to return. Consumer demographics are external factors (Wu, 2003), which can be used to describe and distinguish different groups of consumers. These characteristics usually include age, gender, family structure, education level, hobbies, occupation, income level, geographic location (Wu, 2003). For example, older consumers may be more inclined to return products via door-to-door pick-up, while younger consumers may prefer BORIS returns. Consumer psychological characteristics refer to the attributes such as personality traits, personal attitudes and beliefs of consumers in the process of purchasing and consuming (Oketch et al., 2020). Some common psychographic characteristics of consumers also include cognition, perception, emotion, attitude, motivation, needs, personal values, brand awareness, shopping experience, etc. For example, consumers may value environmental protection in the consumption process.

When they have to return an item, they may choose to return it in a way that they think is the most environmentally friendly.

Third, the retailer's return channel is also a factor that affects how consumers choose to return products. The return channel refers to the approaches that consumers can use when they want to return or exchange products. Consumers' diverse needs for return services require e-retailers to provide a variety of return channels. For example, offering both in-store returns and pick-up options. Consumers choose different return channels according to their needs, but return services may be different online and in-store (Xie et al., 2023). Therefore, consumers can choose the appropriate method of return according to their own needs and the characteristics of the return channel. In general, the convenience, diversity, transparency, return fees, and service quality of return channels will all affect consumers' choice of return methods. For example, consumers often consider whether the return channel is free and the flexibility of the return policy. In a McKinsey & Company survey, the difference in processing costs between the most expensive and cheapest channels averaged $5 to $6 (McKinsey & Company, 2021). If the return channel requires consumers to pay additional fees or has strict return conditions, consumers may choose other cheaper or more flexible options. For another example, if an e-commerce company has a wide business coverage, it can implement BORIS services with other business partners (which can be logistics service providers or local service providers). Amazon Returns Center provides BORIS service and allows customers to return items at designated physical stores, including Kohl's, Whole Foods Market, and UPS Store (Tyko, 2023). In short, the retailer's return channel will affect consumers' choice of return methods.

2. Situational factors. Situational factors cover more in online returns. Zarei et al. (2020) has pointed out deeply the situational factors that affect customer's choice of return methods. Their research identified several important situational factors that could influence customer's return behavior. The following discussion is based on their research.

First, the physical environment may influence a customer's choice of return methods (Zarei et al., 2020). As one of the most common situational characteristics, the physical environment includes many factors, such as weather conditions, geographical distance, store atmosphere, etc. (Belk, 1975; Nicholson et al., 2002). It makes sense that physical environmental factors can influence a customer's choice of return method. Because the physical environment is the basic condition of decision-

making in the customer's life, the customer needs to choose an action plan that suits him according to these conditions. For example, a customer may choose to return an item from a store that is closer to them because they want to avoid the hassle of being too far away (Zarei et al., 2020). For another example, in hot weather or severe cold weather, consumers are likely to be more willing to choose the method of door-to-door pickup to return the product. All of these can illustrate that the physical environment can affect consumers' choice of return methods.

Second, social interaction may influence consumers' choice of return method (Zarei et al., 2020). Social interaction refers to the interaction between individuals or groups that constitute a society, and it encompasses various verbal and nonverbal communications, such as words, movements, facial expressions, and gestures (Giddens, 1984). Research in sociology and psychology suggested that social interaction plays an important role in social life (e.g., Berger et al., 1972; Frith & Frith, 2001; Turner, 1988). Because social interaction helps people establish social relationships, share experiences, gain social identity, and it also has a positive impact on people's psychology health. In modern society, social interaction can mainly be accomplished through face-to-face socializing, social media, instant messaging, online discussion communities, etc. In daily life, consumers usually interact with surrounding social supports (such as family, friends, colleagues, etc.) to obtain necessary information so that customers could feel that they have made a right purchasing decision (Raghunathan & Corfman, 2006). When initiating a return, consumers tend to choose the better return method supported by social support. Because better interactions of social support can help customers reduce many negative factors related to perception, emotion or psychology, such as perceived risk, anxiety and stress (Borges et al., 2010). For example, a customer might think it's best to return an item in a brick-and-mortar store, where the waiter can not only communicate face-to-face, but also seem friendly.

Third, the availability of logistics may affect the customer's choice of return method (Zarei et al., 2020). Logistics availability refers to the feasibility of providing logistics services for customers who need to return products at a specific time and place. Logistics availability reflects whether the e-retailer has enough logistics resources, facilities and services to meet consumers' shipping needs (in this section, consumers' logistics needs for returns). When customers initiate returns, customers usually try to find logistics that are more convenient for them (Belu & Marinoiu,

2014). Therefore, whether the delivery location of the logistics channel is convenient is also a factor that consumers consider when returning products. If the logistics service coverage is wide and the delivery location is convenient, consumers are more likely to choose to use this logistics channel to return the products. As part of their overall service, many e-retailers now offer conveniences to customers to help customers complete returns smoothly. For example, an e-retailer might partner with other brick-and-mortar stores, logistics providers, etc., and allow online customers to return items at the brick-and-mortar store on the way home from get off work. This method can not only reduce the logistics cost caused by online returns, but also reduce the air pollution caused by additional transportation.

Fourth, the definition of purchasing task may affect the customer's choice of return methods (Zarei et al., 2020). Purchasing tasks refer to the specific goals that customers need to complete when purchasing a product or service. Purchasing tasks may include functional tasks, social tasks, experiential tasks, and symbolic tasks, etc. To make readers understand these four types of tasks more clearly, table 2.2 is presented in this subsection. It can be seen that each task is accompanied by different cognitive and motivational characteristics according to the purchase situation (Chocarro et al., 2013). Depending on the purchase task, consumers may have different preferences for return methods. Taking a common functional task as an example, gift shoppers tend to return items at stores for quick returns and refunds, and to avoid any inconvenience caused by other options (Gehrt & Yan, 2004). It can be seen that the purchase task can also affect consumers' choice of return methods.

Table 2.2 Definition of task types

Task types	**Definition**
Functional tasks	Functional tasks refer to consumers buying products or service to meet their specific functional needs. For example, consumers buy houses to meet their accommodation needs.

Social tasks	Social tasks involve purchasing activities associated with social interactions. For example, when a friend celebrates his birthday, buy a gift for a friend.
Experiential tasks	Experiential tasks refer to consumers buying for pleasure, enjoyment, or experience. For example, a customer buys tickets to a concert or travel.
Symbolic tasks	Symbolic task is to demonstrate identity, social status, or individual personality. For example, buying a particular brand of luxury goods.

Fifth, the antecedent status may affect the customer's choice of return methods (Zarei et al., 2020). Antecedent status, including emotional or physical conditions, not only have a significant impact on a customer's purchasing decision (Belk, 1975; Kardes et al., 2011), but also on a customer's decision to return an item. For example, lonely customers may be inclined to choose to return an item in-store for more human interaction or human support. For time-pressed customers, they may be inclined to opt for the less cumbersome return option. Because it allows them to solve the problem as soon as possible and save time. Conversely, if customers have the time, they are more likely to save money by choosing an affordable return option. In addition, the physical condition of the customer is also critical in choosing the return method. Physically, a person's previous state indicates the person's awareness of bodily sensations or reactions. If a customer is in better health, they may be more inclined to return an item in person at a physical store. Because this can avoid the cumbersome return process. When customers feel unwell, they may be more inclined to choose convenient return methods, such as using door-to-door pick up to send products back, so as to avoid unnecessary travel and physical exertion. It can be seen that whether it is emotional or physical, the previous state will affect the customer's choice of return method.

Sixth, time-related factors will affect the customer's choice of return method (Zarei et al., 2020). The operating hours of the various return channels may vary, so it is reasonable to assume that the operating hours of the return channels may have an

impact on how customers select return options. Customers tend to seek more convenient options when it comes to logistics (Belu & Marinoiu, 2014). Therefore, they can choose the more convenient option according to the business hours of various return channels and the deadline for online returns. Also, another time-related factor is time pressure. Time pressure in online returns refers to customers' perception of time available to complete return tasks (Gehrt & Yan, 2004). When customers are short on time, customers will significantly change their behavior to save time (Gehrt & Yan, 2004). For example, time-pressed customers are more inclined to seek a quick and convenient way to return products. Therefore, factors such as the business hours of the return channel and the time pressure of customers will affect the customer's choice of return method.

2.1.5 Process of Returns

The process of returns refers to all the steps that a customer have to take from purchasing to returning, and receiving a refund from the e-retailer (Mohan & Karpagam, 2020). A typical process of product return includes five steps: the customer initiates a return request (In most cases, consumers need to initiate a return from the original website or app), the e-retailer approves the return request, the product is returned, e-retailer confirms product received, and the e-retailer refunds. A return process aims to meet consumers' needs for product returns and provide a standardized method to handle the returns. For e-retailers, this is critical to their business success, because returns policies and processes are a major source of competitive advantage (Janakiraman et al., 2016). For customers, a clear and effective return process can meet their needs for returns and improve their satisfaction.

Research showed that if the e-retailer’s returns process is complex, slow, or inconvenient, customer dissatisfaction will escalate and customers are less likely to buy from the same e-retailer again (Griffis et al., 2012). On the other hand, with a smooth returns process, e-retailers have the opportunity to reduce negative customer experiences through positive return service (Jain et al., 2015). Thus, previous studies highlighted that a clear and well-defined returns process can be a value driver as it provides peace of mind to customers before making any online purchasing decisions

(Mollenkopf et al., 2007). The following section will discuss the key steps in the returns process.

2.1.5.1 Key Steps of Online Returns Process

After receiving their products, customers may refuse to keep their products for various reasons (such as damaged items, mismatched size, missing accessories, late delivery, etc.), thus starting the return process. Different e-retailers may adopt different return procedures, which may be related to the retailer's size, operating capacity, product characteristics, return policy, etc. Generally speaking, a typical return process could include five steps: return initiation, seller review, product return, seller confirmation, and refund received (see Figure 2.1). Next, this subsection describes each step in the returns process.

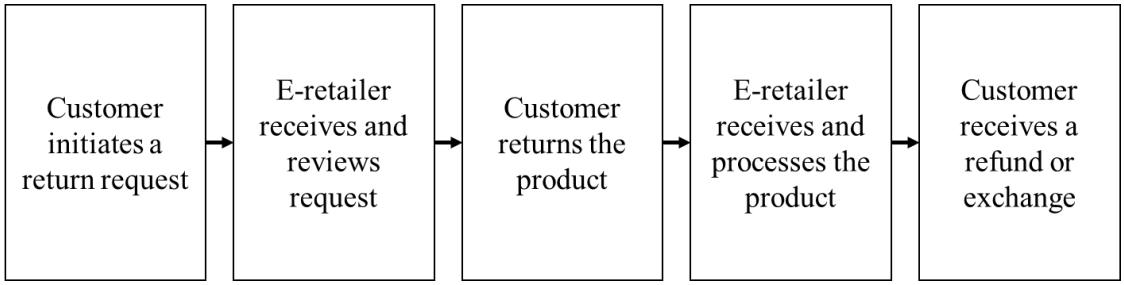

Figure 2.1 Key steps of online returns process

Step 1: The customer initiates a return request. Before initiating a return request, customers need check the e-retailer's return policy. In fact, the previous section explained that about 60% of customers check the policy before making a purchase (Soocial, 2023). By viewing the return policy, customers could know the details related to online returns, such as return conditions, return deadline, return fees, return methods, etc. After this, the customer could submit a return request to the e-retailer. Return requests can often be initiated through the e-retailer's website, app, or customer service department. At this point, the e-retailer may ask the customer to complete an electronic application form. The content of the form may contain important information such as order number, reason for return, desired resolution, etc. Sometimes e-retailers may ask customers to provide evidence (such as pictures of

damaged items). For e-retailers, they hope that customers can try their best to provide comprehensive evidence to prove the necessity and legitimacy of the return.

Step 2: E-retailers review customer return requests. This process is also often referred to as gatekeeping (Rogers et al., 2002). When an e-retailer receives a return request from a customer, the e-retailer needs to understand the reason for the customer's return and check the evidence. The review aims to ensure that the customer's return application is reasonable. The e-retailer determines whether to approve a customer's return request based on its own return policy, the reason for the return provided by the customer, and evidence of the return (such as pictures or videos of product damage). If the return reason provided by the customer does not comply with the return policy of the e-retailer, or if the customer cannot provide the necessary evidence, then the e-retailer is likely to reject the customer's return request. If all goes well, the customer's return request will be approved. This step is very important because it is the basis for the rest of the steps that follow.

Step 3: The customer returns the product to the e-retailer. Before the customer initiates a return request, the customer first needs to ensure that the product is in good condition. If the product is damaged due to the customer's carelessness, the customer may not be able to get a refund. The customer should then package the product (including accessories, product brochures, labels, etc.) according to the e-retailer's requirements. Typically, when a customer initiates a return, the e-retailer will tell the customer how the product should be packaged, which shipping method to use, and the costs associated with the return (based on the reason for the product return and whether the customer has ever purchased shipping insurance). The e-retailer will also provide the tracking number to customers who initiate returns so customers can monitor the progress of their returns at any time. Ultimately, customers make sure the return arrives at the e-retailer's claimed location (could be a returns processing center or a 3PL, etc.). Additionally, customers may have different return options depending on the e-retailer's policies and the availability of return methods. For example, customers can send returned products to the nearest post office, physical store, return collection point, etc.

Step 4: E-retailers receive and process returned products. After receiving a returned product, e-retailers often have employees manually inspect it (ReturnLogic, 2023). The purpose of the inspection is to ensure that the product being returned is in the same condition as when it was shipped to the consumer. If the product is in a

different state (such as damaged or missing parts), the e-retailer can refuse to accept the returned product or charge the consumer a return fee. If the product is in good condition, the e-retailer will process the return and offer a refund or exchange. As for refund, exchange or other methods, it depends on the option selected by the customer when filling out the return request. To increase the transparency of the return service, customers can usually track the status of the refund/exchange based on the tracking number assigned by the e-retailer. Customers can also communicate with the retailer's agent if they encounter a problem during the process. For example, a customer may wish to exchange an item after initiating a return for a refund.

Step 5: Customer receives refund or exchange. As customers care about the speed of their refunds, most e-retailers regularly update the return status through the app based on the processing progress. After the return is processed, the e-retailer will promptly refund or exchange the product to ensure a satisfactory experience for consumers. In recent years, a service known as "instant refund" has been on the rise (Martínez-López et al., 2022). Reputable buyers will have an online instant refund channel (the instant refund channel is a consumer privilege granted to consumers based on their past purchase and return records). This privilege allows customers to receive a refund before the product is formally returned through the shipping service. However, the instant refund service is based on a good customer reputation. For customers with a high return rate, the instant refund service may not be applicable. Retailers may need to decide whether to give a certain customer the privilege of an instant refund based on the customer's past purchase and return experience.

2.1.5.2 Characteristics of an Effective Returns Process

While most e-retailers have a return process, many e-retailers have a return process that only meets customers' basic return needs. In e-commerce, increasing market competition has prompted e-retailers to provide better return processes to meet customer demand for an excellent return experience. Previous literature has shown that effective returns management not only increases retailers' revenue levels (Mukhopadhyay & Setoputro, 2004; Petersen & Kumar, 2010), but also reduces various costs associated with returns (Blackburn et al., 2004). Generally speaking, a good return process should have the characteristics of transparency, fairness, flexibility, speed, and convenience, etc.

(1) The returns process should be transparent and fair. First, improving the transparency of return information helps e-retailers manage users' product return behavior (Ambilkar et al., 2022a). Because transparency means that customers can easily track the progress of returns, from initiating return requests to providing final solutions. A highly transparent return process (including the introducing of return terms, such as deadlines, packaging requirements, shipping costs, refund methods, etc.) will make customers feel that the process is simple, clear, and efficient. Second, fairness in the returns process may involve objective evaluation and disposition of returned products in accordance with the e-retailer's returns policy. A fair return policy is very important to the customers as it helps them to return the product if any problem arises, thus encouraging them to purchase the product without fear of possible loss (Lind & Tyler, 1988). In conclusion, customers value transparency and fairness in the returns process.

(2) The return process should be flexible and convenient. Different return reasons may require different solutions, such as refunds, exchanges, or repairs. Therefore, e-retailers should design a flexible and convenient return process to ensure an easy return. According to research by Splitit, 52% of consumers avoid online purchases due to fear of difficult return process and it rises to 67% among millennial respondents (Reuters Events, 2020b). Therefore, the return process should be more flexible and provide customers with more convenient options. The flexible and convenient return process allows customers to initiate returns online, print return labels, choose their preferred return method (e.g., door-to-door pickup, in-store return, post office, etc.), track return status, and more. These flexibility and conveniences of the return process allow for different return reasons and return needs, thereby providing service value to customers.

(3) Refunds should be fast and reliable. A fundamental attribute of e-commerce shopping is that customers experience longer waiting time during online returns (Hübner et al., 2016). Generally, e-retailers issue refunds as soon as returned items are received and inspected. However, some e-retailers could be very slow to issue refunds to customers. This is contrary to the customer's desire or need to receive a refund as soon as possible. Another possibility is that the refund amount was incorrect. Whether it’s a delayed refund or a refund mistake, it can lead to a loss of customer trust, which in turn can affect future repurchases. Therefore, after the e-retailer checks the returned product and confirms that it is in good condition, it is

necessary and important to transfer the correct refund to the online customer as soon as possible. Previous literature has explored the impact of instant refunds on consumers. The literature believed that instant refunds are very helpful to improve customer experience (Martínez-López et al., 2022). Therefore, e-retailers should value the speed and reliability of refunds.

2.1.6 Impacts of Returns

Online returns can significantly impact e-commerce businesses (Chang & Guo, 2021a; Griffis et al., 2012; Stambor, 2022; Walsh et al., 2016). On the one hand, offering a return service helps e-retailers build relationships with customers. Previous studies have shown that return services are highly predictive of online customer satisfaction, and customer satisfaction with return services will significantly affect customer trust in retailers (Javed et al., 2020). On the other hand, the negative impact of returns cannot be ignored. For example, previous literature indicated that product returns are a key cost driver eroding online retailers' profits (Walsh et al., 2016; Yang et al., 2022). According to a Pitney Bowes survey of U.S. online retailers, online returns cost the 21% of the order value (Stambor, 2022). In fact, online returns don't just negatively impact e-retailers' profits, but other ways as well. In this section, we will discuss the negative impact that mass returns will bring on products, retailers, customers, the environment, etc.

2.1.6.1 Impacts on Returned Products

Returns will affect the product itself. According to National Retail Federation, consumers returned $428 billion worth of products in 2020 (National Retail Federation, 2021a). Unfortunately, these returned products are either sold at a discounted price (Barbee et al., 2021) or may be disposed of as garbage (El-Fadel et al., 1997; Lindsey, 2016). It can be seen that the return will first have a huge impact on the product itself.

First, the commercial value of a returned product may not be the same as a new, unsold product due to differences in product attributes. The returned product may have been unpacked and opened for trial use, and may have traces of use to some extent. The number and severity of using traces depends on how the customer has tried the product. Especially in certain product types (such as clothing, shoes, electronic equipment, etc.), returned products may be more affected. If a returned item

is in poor condition, has damaged packaging, or traces of use issues, the e-retailer may not be able to resell it at the original price or in new condition. According to a Gartner survey of 300 retailers, only 48% of returned merchandise can be resold at full price (KPMG, 2017). Over time, the depreciation of returned products can further reduce the profit margin that a seller can expect (Yang et al., 2022).

Second, some products may face the fate of being destroyed after being returned. E-retailers go through various processes to select products that can still be resold, repaired & resold, or recycled. And those that cannot be resold or recycled will be destroyed and filled. According to Environmental Capital Group, 20,000 tons of returned products end up in landfills every year (Lindsey, 2016). In particular, certain products are closely related to safety and hygiene. For safety or hygiene reasons, e-retailers may need to destroy such products rather than add them back to the online store. These categories mainly include foods, cosmetics, personal care products, pharmaceuticals and more. If these items are returned, they are generally destroyed for security reasons. Destroying such products can ensure safety and hygiene on the one hand, and can also establish a good brand image for retailers on the other hand. For example, China's e-commerce giant JD destroys a large number of returned alcohol or food every year. However, all product destruction and landfilling result in waste and environmental pollution.

2.1.6.2 Impacts on E-retailers

For e-retailers, online returns can have serious impacts on their costs, operations, customer retention, product rating, store rating, reputation, and more. For example, returns resulting from poor customer experience may indirectly damage customer satisfaction and loyalty, weaken the e-retailer’s reputation, and reduce customer lifetime value (O’Neill & Chu, 2001; Petersen & Kumar, 2009). These impacts will seriously threaten the market competitiveness of e-retailers, and even endanger the survival of e-retailers. So, e-retailers take seriously the impact of online returns on their business.

(1) Cost. Previous literature illustrated that online returns could entail various direct and indirect costs (Asdecker, 2015). Product returns are typically seen as a headache for e-tailers because of the associated high costs (Li et al., 2021). Some common costs include shipping, inspection, repackaging, restocking, repairs, disposal, and more. Previous literature also indicated the cost function for returns may include

the cost of customer service, product replacement (or repair), lost market share, or goodwill from mishandling returns (Ahsan & Rahman, 2021). Even when items are returned in good condition, the entire return process is still costly. A survey reported that return shipping alone will cost $550 billion in one year (Segran, 2019). Moreover, when products are returned, e-retailers must arrange employees to inspect the returned products, which increases labor costs. The total cost is even higher if the e-retailer needs to dispose of the returned product at a discounted price or as garbage. Additionally, online returns impact a retailer's customer acquisition costs. Returns mean the deal doesn't close, and the e-retailer's previously invested customer acquisition costs (such as advertising costs) may go to waste. Previous literature also indicated that the increase in return rate has negatively impacted the cost structure of e-retailers, which has reduced the gross profit margin of e-retailers (Wachter et al., 2012). In conclusion, online returns drive up various costs for e-retailers and jeopardize their profits.

(2) Day-to-day operation. The impact of online returns on day-to-day operations has drawn the attention of e-retailers. About 57% of e-retailers reported that processing returns negatively impacts their day-to-day business (Arabian Business, 2021). For example, when customers want to return a product they bought online, they send the product back to the e-retailer. Afterward, the e-retailer needs to conduct a detailed inspection of the returned product. This inspection process may not be handled by automation or robots, which means e-retailers have to spend a lot of time and effort (ReturnLogic, 2022). E-retailers could have devoted their time and effort to more valuable activities. Plus, returned products are often eligible for resale, so these returned products can be added to current inventory. However, this also means that e-retailers must consider possible returns when making decisions about inventory management. This could make it more difficult for e-retailers to manage their day-to-day operations. For example, bracketing shopping may create inventory shortages for e-retailer (Fox, 2022b). Bracketing involves customers purchasing multiple similar products at one time (which the e-retailer needs to remove from inventory), most of which will later be returned by the customer to the e-retailer. This makes it much more difficult for e-retailers to track inventory and predict replenishment needs.

(3) Customer retention. Customer retention is considered one of the key objectives of relationship marketing. It refers to a customer's preference, trust,

attachment, and commitment to a brand or enterprise, and the willingness to recommend the brand or enterprise to others (Hanaysha, 2017). According to one report, most returns are caused by incorrect product description information, incorrect size, damaged/defective product, long shipping time, etc. (Fox, 2022a). In this case, on the one hand, the consumer does not get the product they expect, on the other hand, the consumer needs to spend additional time and effort to deal with the return, which is very likely to lead to consumer dissatisfaction. Every return and refund could destroy consumers' satisfaction. At this point, if the customer again becomes dissatisfied with the e-retailer due to the return service, a service failure known as "double deviation" occurs. Double deviation refers to the recovery failure (i.e., return service failure) after an initial service failure (i.e., product failure or product delivery failure), resulting in a deviation of the customer's expectation of a frictionless service experience not once but twice (Bitner et al., 1990). Double deviation of service failure can lead to serious consequences, the most serious of which is jeopardizing customer retention.

(4) Product and store ratings. If the product is sold through Amazon, Taobao, etc., the return may also affect the rating of the product and the online store. Products sold on the platform are usually given a weightage based on the sales. This weightage may affect the number of times the product is shown. Those products that are often shown to customers are generally high-quality products. However, if a product is returned frequently, the product will be given a lower weightage. For example, if a product sold on Amazon has a return rate of more than 10%, the product may be banned to sell on Amazon. The more serious consequence is that the account of the online seller may be deducted some penalty points, or even banned. Additionally, a high return rate will affect the refund rate of the online store, and the return rate is closely related to the store level of the online store. If an online store has a large number of returns, this may trigger an alarm mechanism on the e-commerce platform. This online store may be considered to be selling counterfeit products or have major defects in product quality. Then, the e-commerce platform will not show the online store's products to potential customers, so as not to affect the reputation of the e-commerce platform.

(5) Damaged reputation. Online returns may create negative electronic word of mouth (e-WOM). The e-WOM refers to “any positive or negative statement made by potential, actual or former consumers about a product or company, which is made

available to a multitude of people and institutions via the Internet" (Hennig-Thurau et al., 2004). Customers often return products because they are not satisfied with the product. In addition to the risk of losing a customer when a customer returns an item due to dissatisfaction, the e-retailer may also suffer from negative reviews left by customers in online reviews system. Previous literature indicated when consumers return products, they are more likely to write online reviews and these reviews are more negative than reviews after non-returned purchases (Sahoo et al., 2018). Serving as an important reference for other online customers in making their purchasing decisions, these negative reviews may deter other potential online customers from purchasing. More importantly, these online comments tend to remain in the comment system for a long time and are difficult to eliminate, which means that the impact may be permanent or long-term.

2.1.6.3 Impacts on Consumers

Online returns affect not only the product itself and the retailer but also the customers themselves. For customers, in addition to the return fees charged by e-retailers, return costs may be directly or indirectly related to the time, effort, and psychological burden associated with returns (Gu & Tayi, 2015). For example, customers expend more time and effort when purchasing and returning products online than in-store (e.g., it takes time and effort to purchase, receive, and return a product). As a result, consumers bear more of the psychological burden associated with purchasing and returning products, in addition to paying the return fees charged by e-retailers (Ahsan & Rahman, 2021). In China, frequent returns on the e-commerce platform may have a direct impact on the customer's instant refund function, shipping insurance discounts, and so on. Some other common influences include: customer reputation, types of refunds, product recommendations, etc.

(1) Risk of not getting a full refund. Depending on the e-retailer's return policy and the results of inspection of the returned product, the customer may receive a full or partial refund of the price paid to purchase the product (Chu et al., 1998). As a result, customers may sometimes only receive a partial refund. Partial refunds are sometimes charged under other forms or names. For example, some stores may charge a restocking fee for returned products (Difrancesco & Huchzermeier, 2020; Shulman et al., 2009). This restocking fee can be a percentage of the purchase price or a flat fee.

Also, some online stores may offer store credit instead of a refund (credit can only be used at that store).

(2) Risk of needing to pay for return shipping. Regardless of the return method used, shipping will incur a cost. These costs ultimately need to be paid by a specific individual or organization. According to the return reason and the retailer's return policy, the shipping cost of the return may be paid by the retailer, the customer himself, or the insurance company (if the customer purchases shipping insurance or the seller gives the buyer shipping insurance). If the return is due to the customer's own reasons, the customer needs to pay for the return shipping fee. For most customers, this may be an expense that they are not willing to pay.

(3) Customer reputation. In e-commerce, both the retailer and the customer acquire a reputation (positive or negative) for their actions in buying or selling. Online returns can affect not only the reputation of the product and the retailer, but also that of the customer. For example, on Taobao, if customers frequently return products, the customer's purchase reputation value (called “Taoqi value”) will drop. It has been reported in the news before that many customers will "buy" multiple clothes online, and they will take pictures during their travel and upload to their social media with these new clothes. Eventually, they return all or most of the clothing they purchased (Kozlowska, 2018). In this case, the e-commerce platform is likely to determine that the customer's return behavior is malicious. A customer who is judged to be maliciously returning products may be punished (for example, reducing the customer's shopping reputation weightage or increasing the customer's purchase restrictions). Amazon has also taken severe action against the serial returners, with penalties for serial returners even including closing their accounts.

(4) Risk of not being able to purchase or use the shipping insurance. Nowadays, various shopping platforms often cooperate with insurance companies. One of the cooperation projects is that customers can purchase shipping insurance at a lower price. This type of shipping insurance can be used to cover shipping costs when a customer needs to return an item. However, if a customer has a high return rate, the insurance company may consider that customer's order to be a high return risk. The insurance company may blacklist the customer. Then, the customer cannot purchase or enjoy the shipping insurance service provided by the seller. This means that customers may be required to pay for shipping costs when returning an item at their own risk.

(5) Risk of not getting better product recommendations. With the application of the intelligent recommendation system, the shopping platform can more accurately recommend the products that customers want to buy. However, for customers who frequently return products, shopping platforms may use different recommendation strategies. Taking Taobao as an example, if a customer has a high return rate, Taobao may give this customer a label related to the high return rate. For customers who are labeled with such labels, the intelligent recommendation system may not recommend high-rating stores or high-quality products when pushing products. Because, for shopping platforms and sellers, it is easy to cause waste to recommend high-rating stores or product resources to such buyers with a high return rate. Furthermore, many e-retailers are unable to accurately determine whether customers with high return rates are return fraudsters.

2.1.6.4 Impacts on Environment

Product returns are not only costly (Samorani et al., 2019; Yan & Pei, 2019) but also negatively affecting the environment (Dutta et al., 2020; Pålsson et al., 2017). With the development of remote shopping technology and the improvement of customer experience, consumers seem to participate in more shopping online, which is both easy to buy and easy to return. However, the environmental impact of the popularity of e-commerce seems to be ignored by consumers. At present, both scholars and managers agree that e-commerce has indeed brought significant negative impacts to the environment. Research indicated that even if the current rate of product returns remained the same, the consequences of product returns would have a very serious negative impact on the environment (Dutta et al., 2020; Pålsson et al., 2017). For example, the carbon footprint of online shopping can be staggering. These carbon emissions are jointly determined by factors such as the total amount of e-commerce transactions, product return rate, and return processing methods. Furthermore, the average ecommerce return rate is as high as 30% (Ecwid, 2020). A large number of returned products may be destroyed and buried in the ground. This has caused serious waste on the one hand, and has also caused environmental pollution on the other hand. For example, this filled garbage can contaminate groundwater. As the pandemic shuts physical stores and heightens consumer anxiety, e-retailers are highlighting free returns as part of an effort to make online shopping convenient. This has undoubtedly

further contributed to the increase in e-commerce returns, which will remain above pre-pandemic levels through at least 2026 (Canaves, 2023).

(1) Pollution from transport. Online returns require logistics companies to collect products from different locations. Frequent and long-distance transportation will undoubtedly increase a lot of energy waste and carbon emissions. A returns logistics company called Optoro found that the transportation of returns inventory in the United States generates more than 15 million tons of CO2 emissions per year (Bennett, 2021). These large emissions of carbon dioxide may cause incalculable impacts on the environment. Many logistics agencies are reducing this negative impact by planning return logistics properly. For example, some logistics agencies use intelligent planning systems to reduce the total amount of transportation, and some logistics agencies use more environmentally friendly transportation methods (e.g., using drones or robots for delivery).

(2) Pollution by packaging. The e-commerce packaging market will be worth $66.51 billion by 2030 (Fortune Business Insights, 2023). It can be seen that the packaging market is booming with the rise of e-commerce. This is because the nature of remote transactions dictates that products need to be packaged for delivery to customers. However, the extra packaging can bring negative consequences. While e-commerce packaging helps ensure safe delivery, substantial packaging waste remains a concern (Escursell et al., 2021). First, additional raw materials are required to produce these packages. Traditional e-commerce packaging mainly uses cartons, envelopes, plastic wrap, plastic bags, tapes, and foam padding (Chueamuangphan et al., 2020). It takes a lot of resources to produce these things. Second, the process of producing these packages consumes a lot of energy (such as oil, electricity, etc.) and generates more greenhouse gas emissions. Third, after the customer receives the products or the retailer receives the returns, the packages are always discarded. Discarded packaging is often more ecologically damaging. In countries with poor management, many delivery packages are discarded after being unpacked by customers. In short, additional packaging not only consumes resources and energy, but also poses a threat to the environment.

(3) Pollution from landfills. Jonathan Byrnes, a researcher in transportation and logistics and a senior lecturer at the Massachusetts Institute of Technology, believed that lower-priced items (usually under $40) tend to be thrown away (Bhattarai, 2021). This means that potentially a large number of items will be

disposed of. For example, according to Environmental Capital Group, 20,000 tons of returned products end up in landfills every year (Lindsey, 2016). This is an astonishing number! This type of post-return destruction is very common for certain product categories. For example, clothing is a product with a high return rate. When shopping online, customers tend to buy clothes in different sizes, styles and colors (i.e., bracketing shopping). After receiving their purchases, customers typically keep one piece and return the rest (Hartmans, 2022b). However, even if the item is in good condition when the buyer hands it over to the courier, shipping it back may damage the item. Sometimes e-retailers realize that throwing away a returned item is the most cost-effective way to dispose of it. Because adding the item back to the online store requires paying for cleaning, packing, repairing, etc. Relatively speaking, it may be less costly for some low-value products to be directly incinerated or filled up as garbage (Bhattarai, 2021). In these cases, even though the returned items may still be intact, they end up in landfill or incineration. However, the garbage that is incinerated, destroyed and filled in the ground will bring other hazards, such as polluting groundwater resources.

2.2 Return Management in Online Shopping

The popularity of online shopping has brought great convenience for online consumers, but it has also brought returns management challenges for e-retailers. Returns management in e-commerce faces many serious challenges. For example, the cost of returns, the complexity of the return process, and fraudulent returns all pose challenges for return management. To deal with these challenges, returns management needs to be optimized. Effective returns management can bring many benefits to e-retailers. For example, reduce costs, increase profits, improve reputation, increase repeat purchases, etc. Additionally, by effectively responding to online returns, e-retailers can gain a second chance to satisfy their customers who initiate returns due to dissatisfaction or other return reasons (Wachter et al., 2012). Some important issues related to returns management will be discussed in this section, such as the concept of returns management, returns management policies, and the challenges faced by returns management. These contents will provide supporting knowledge for the research involved in this thesis.

2.2.1 Concept of Return Management

When it comes to online returns, providing consumers with a satisfying returns experience is critical to the success of online sellers (Martínez-López et al., 2022). Returns management has been an increasingly popular topic in the literature on supply chain management and has been a research focus of many marketing scholars (Ahsan & Rahman, 2021; Rogers et al., 2002), both in professional business and academic journals. Previous literature defined returns management as a specialized part of logistics that focuses on the movement and management of products after they have been sold and delivered to online customers (de Araújo et al., 2018).

Effective returns management is important for e-retailers because online returns can reduce profitability (Zhao et al., 2020), impact relationships with customers, and damage e-retailers' reputations (Mollenkopf et al., 2007). Better returns management can reduce costs while increasing customer loyalty (McKinsey & Company, 2021). Survey shows over 60% of customers read the terms of return policy before buying online (Soocial, 2023), and returns could be the top concern of consumers before completing a purchase. Therefore, how to manage returns is critical for both retailers and customers. In order to meet customer needs and protect corporate interests, return management aims to effectively manage and handle the process of customer returns, involving policies, measures, and procedures for reducing product returns (Rogers et al., 2002). From the perspective of the participants involved, returns management involves all participants involved in the customer returns process, whether it is the manufacturer, retailer, distributor or customer. From the perspective of purchase stages, return management is widely used in all stages of online shopping: pre-purchase, purchase, and post-purchase. In terms of management scope, return management includes activities such as product return, repair, refurbishment, recycling and disposal (Rogers et al., 2002). Next, this section will discuss the definition of return management in previous literature, and further discuss the relationship and difference between return and return management, the importance of return management, and what is effective return management.

2.2.1.1 What is Returns Management?

Given the importance of returns management, numerous previous studies have focused on returns management and defined returns management in various research contexts. For example, better known and heavily cited is the definition by Rogers and

his colleagues (Rogers et al., 2002). The definitions of returns management in these literatures are broadly similar, but there are some differences. Some literatures emphasize the procedural nature of returns management, while others emphasize that returns management is composed of various activities. This section collects the literature that once defined what returns management is, and compares the similarities and differences of these definitions in order to deepen the understanding of this critical concept.

Table 2.3 Definition of return management

Literature	**Definition**
Othman et al. (2019)	Returns management is defined as the process of returning products from consumers to e-retailers, including damaged, unwanted or defective products.
Mathu (2021)	Return management refers to the return process of products from customers to sellers in the supply chain when final consumers return their products.
Rogers et al. (2002)	Returns management is the part of the supply chain management process by which returns-related activities (including returns, reverse logistics, gatekeeping and avoidance) are managed within the retailer and among key supply chain members.
Jiang et al. (2022)	Returns management is defined as the process by which a customer returns a product to a retailer.
Desai and Rao (2019)	Returns management is a process within supply chain management, and this process manages all activities related to returns, reverse logistics, gatekeeping and avoidance.

The definitions of the above literature all recognize that returns management is the processes and activities related to product returns, logistics information, reverse logistics, supply chain management, etc. However, there are also differences in the above literature. Othman et al. (2019) emphasized that returns management is a process of dealing with returns. Mathu (2021) emphasized the return flow of products from consumers to businesses. Rogers et al. (2002) emphasized returns management as four main activities (i.e., returns, reverse logistics, gatekeeping, and avoidance). Jiang et al. (2022) emphasized returns management as a process that assumes the function of transferring products to retailers. Desai and Rao (2019) have the same definition of returns management as Rogers et al. (2002).

Based on the above definitions, returns management may have both process attributes (that is, returns management is a continuous process involving planning, operation, control, and supervision) and functional attributes (that is, returns, reverse logistics, gatekeeping, and avoidance). In this thesis, these important concepts will still be used. At the same time, the research in this thesis also believes that most of the previous definitions of returns management emphasized the post-event management of returns. Returns management should start at or before the customer starts their shopping journey. For example, some preventive return avoidance to reduce customer returns. This is consistent with "avoidance" in the definition of Rogers and his colleagues (Rogers et al., 2002). The research on returns management by Rogers and his colleagues is relatively early and authoritative, and their research is also widely cited. This thesis continues to use the definition of returns management by Rogers and his colleagues.

2.2.1.2 Differences Among Returns, Returns Management and Reverse Logistics

While the terms "returns," "returns management," and "reverse logistics" are often used interchangeably, they refer to distinct processes or activities in the management of returned products. Returns refer to the activity of a customer returning a product to an e-retailer for various reasons, such as dissatisfaction with the product, damage during shipping, or incorrect product delivery, and more (Bleich, 2023). Returns management is the process of managing product returns, which includes activities such as inspection, sorting, grading, repair, repackaging, and restocking of returned products (Rogers et al., 2002). Reverse logistics will be used when a product travels from the customer through the supply chain back to the suppliers. Reverse logistics

refers to the products flow from customer to e-retailer or producer (Zouari, 2019). It includes the series of operations that initiate at the consumer level with the collection of products, and terminate with the re-processing of these products at remanufacturing facilities (Alshamsi & Diabat, 2015).

The difference between these three concepts is: 1) Purpose: returns are to meet consumer needs or solve problems, such as refunds, exchanges, or repairs; return management aims to help e-retailers reduce return costs, maintain daily operations, optimize customer experience, and retain online customers; reverse logistics aims to recover value from products and reduce waste, while ensuring the efficiency and sustainability of the return process (NetSuite.com, 2021). 2) Scope: return is the behavior of consumers returning goods to e-retailers, focusing on the interaction between consumers and online retailers; return management is a series of measures and processes adopted by e-retailers when handling returns, including receiving, processing, storing and disposing of returned products (Rogers et al., 2002); reverse logistics covers return-related logistics processes and activities in the entire supply chain, such as collection, transportation, etc. 3) Subject: Return is the activity of a consumer choosing and initiating a return; return management is the activity of an e-retailer that processes return and manages the return process; and reverse logistics involves multiple actors, including consumers, e-retailers, logistics providers, and others. Reverse logistics is a coordinated and collaborative process throughout the supply chain.

2.2.1.3 Importance of Return Management

Due to the unique nature of remote transactions, online returns are inevitable (Keenan, 2021; Lindsey, 2016). However, e-retailers need to have online returns forecasting in their business as returns can have a significant impact on their business. With the popularity of online shopping, various factors including an increase in online orders are driving the exponential growth of returns. E-retailers generally agree that returns management has become an important part of how they fulfill orders. Moreover, improper returns handling or control will directly affect the company's return costs (Stuart et al., 2005), daily operations (Rao et al., 2014), brand reputation (Walsh et al., 2016), customer satisfaction (Lysenko-Ryba, 2017), and environment (Li et al., 2021). From the perspective of weakening the negative impact of returns, this has also prompted e-retailers to pay attention to returns management. On the positive side of

returns management, effective returns management can bring many benefits. Returns management, for example, can help e-retailers find ways to reuse, resell or recycle raw materials that would otherwise end up in landfills (Lindsey, 2016). So, returns management not only helps improve profit margins, but also helps e-retailers improve their environmental reputation. In conclusion, returns management is very important for e-retailers.

(1) Returns management can enhance customer confidence (ClickPost, 2022). Customer confidence refers to the degree of optimism and trust that customers have in certain products or services offered by a seller (Suzuki & Miah, 2022). Effective returns management builds customer trust because it demonstrates excellent customer service. Due to the higher risk of buying (Wood, 2001), online shopping often requires sending trust signals to customers. For example, generous returns management policies can be used to convey confidence and reduce customer perceived risk (Karlsson, 2020). Specifically, returns management can increase customer confidence in brands, products, services, and ultimately help e-retailers make potential customers into actual buyers (ClickPost, 2022). This is attractive to e-retailers. Additionally, customer confidence in an e-retailer often needs to be built through a series of successful transactions, including returns processing. For example, it may be easier for customers to build confidence if the e-retailer can provide a clear and transparent return policy, easy and convenient return process, timely communication. Because these measures can help customers understand the return requirements, process, and even ease the anxiety of online customers when returning products (customers may be anxious because they do not know whether the return request can be approved and the progress of the refund).

(2) Return management can increase customer value. Previous literature pointed out that offering return service can increase customer value (Chircu & Mahajan, 2006). Customer value refers to customers' perceptions of what they receive and in return for what they sacrifice (Zeithaml, 1988). Effective returns management clearly increases customer value. First, returns management reduces the risk for customers shopping online. Return management allows customers to inspect and even experience products after they receive them, with the option to return them. That is, returns management provides online customers with protection against the risks of online shopping. Second, returns management can reduce transaction costs for customers. Because efficient and convenient return management can reduce

customers' time, effort and other costs associated with returns. This could help bridge the gap between online shopping and brick-and-mortar shopping, thereby providing value to customers.

(3) Returns management is a very valuable source of information about customer behavior and their expectations (Lysenko-Ryba, 2017). As a result, manufacturers and e-retailers can use returns management to understand customer behavior and expectations, and better improve products and services (Minnema et al., 2018). In particular, effective returns management can provide feedback on the quality of their products or services because returns management allows e-retailers to understand what led to returns (Stock et al., 2006). These feedbacks are an important basis for e-retailers to improve their services. For example, e-retailers need to recheck their product descriptions if a product generates a high volume of returns because it was "not as described." If the return is due to a size mismatch, the e-retailer needs to provide more accurate size guidance. In conclusion, by analyzing returns management data, manufacturers and e-retailers can improve their products and services (Nshift Returns, 2023), as well as increase customer satisfaction.

2.2.2 Participants in Return Management

Effective returns management requires collaboration among participants to ensure the returns process runs smoothly and meets the expectations of all parties. Returns management typically involves multiple participants such as manufacturers, suppliers, retailers, consumers, etc. The specific participants may vary according to the industry, company size, and business process. Examining the roles of these participants is necessary and important as they directly or indirectly affect the cost, efficiency and quality of returns management.

(1) Consumers. As the initiator of returns, consumers play a crucial role in returns management. First, online shopping has a higher uncertainty and risk of returns (Hong & Pavlou, 2014). Therefore, consumers need to understand the company's return policy and process, including return conditions, return methods, refund methods, etc. According to surveys, most customers (about 60%) check the return policy before making a purchase when they purchase in online stores (Soocial, 2023). Second, if the consumer does not initiate a return request, the return process will not start (it is rare for a manufacturer or e-retailer to voluntarily recall a product). To submit a return request, consumers typically need to initiate the return according to

the company's stated methods (Kukolj, 2020), such as through a shopping app. Third, consumers need to provide reasons and evidence for the return. Generally, proof of purchase (such as an invoice or receipt) is required when a customer returns an item. Most e-retailers require customers to provide the reason for the return, as well as evidence such as photos or videos of the product. Fourth, after receiving the refund, consumers need to check whether the refund is correct. If consumers have any questions about the money they have received, they need to communicate with customer service in a timely manner. Fifth, consumers may complain when initiating returns. Customer complaints can be frustrating, but they are also a valuable resource to help improve the product or service (Stone, 2011). By effectively handling customer complaints during the return process, e-retailers can identify customer pain points, reduce customer churn, build brand reputation, and more (Franklin, 2022). And, e-retailers can use consumer feedback to find ways to enhance the customer experience.

(2) Retailers. Once a customer initiates a return, the e-retailer becomes the next participant in the returns management process. First of all, after a consumer initiates an online return, the e-retailer needs to deal with the return request according to the return policy (Patel, 2023). To be precise, e-retailers need to verify the authenticity of consumers' purchases and check whether the returned products meet the return conditions, such as the reason for the return, purchasing proof, return deadline, and so on. Second, if the consumer's return complies with the return management policy, e-retailers need to provide product exchange or refund services to meet consumers' reasonable demands (Kukolj, 2020). For e-retailers, refunds are not the best option, and e-retailers may offer exchanges or encourage consumers to choose other alternative products. Third, e-retailers need to inspect and evaluate the condition of the returned product according to the returns policy (Kukolj, 2020). These inspection and evaluation activities aims to sort the product according to its condition for resale, repair or disposal. As inspection and evaluation activities are trivial and cannot be automated, this can be one of the more time-consuming and effort-intensive activities in the returns process. Lastly, e-retailers also need to track returned products in a returns management system and provide consumers with updates on the return status.

(3) Manufacturers. Although the product is sold by the e-retailer, the product is produced by the manufacturer. Manufacturers play an important role as participants

in returns management. First, manufacturers need to strictly monitor raw materials and production processes to ensure that the products meet the quality standards (Insight Quality Services, 2021). It is the responsibility of manufacturers to provide consumers with qualified products. Substandard products can cause serious business problems, such as increased returns, negative reviews, and customer complaints (Insight Quality Services, 2021). However, a common reason for online returns is that the product is defective. According to a survey conducted by Power Reviews in 2021, 65% of products are returned because they are damaged or defective (Power Reviews, 2021). Second, manufacturers and e-retailers often collaborate to establish the most efficient returns management process (Inbound Logistics, 2014). Since the return policy or process may involve the manufacturer, the e-retailer may need to discuss the details of the return policy and process with the manufacturer. It will even include the conditions, quantity, time, method, cost and other details of the return, as well as how to deal with the returned products. On the one hand, the participation of manufacturers can make the return policy or process more perfect, and on the other hand, it can also provide more solutions to solve consumers' problems. Third, manufacturers need to be involved not only in return policy, but also in returns management collaboration, such as addressing handoff points, value-added processes, partner responsibilities and how to fulfill these responsibilities (Inbound Logistics, 2014). For instance, when a returned product needs to be repaired or replaced, the manufacturer should handle the returned product. By evaluating the condition of returned products or identifying the reasons for returns, manufacturers can improve products and services to reduce online returns due to quality issues.

(4) Shipping carriers and third-party logistics providers (3PL). Research highlighted the trend toward the use of dedicated third-party logistics providers (distribution centers) for returns collection and processing (de Araújo et al., 2018). Shipping carriers generally refer to companies or individuals that provide cargo transportation services and deliver packages from shippers to customers (Singh, 2023). The shipping carrier usually has transport qualifications and related means of transport, such as trucks, ships, planes, etc., and is responsible for the protection and safety of the products during transport. A third-party logistics provider (3PL) is an agency that specializes in providing logistics services to customers (TechTarget, 2018). A 3PL service can be a single provider (e.g., shipping or warehouse storage), or a system service provider that can handle supply chain management. 3PL's services

cover the entire logistics process, including warehousing, transportation, sorting, packaging, distribution, and after-sales support (Blume Global, 2019). By outsourcing logistics to a 3PL, companies can benefit from expertise and economies of scale, reducing logistics costs and risks.

(5) Customer service representatives. A customer service representative is a position or job role that is primarily responsible for communicating with customers to resolve customer issues (Mouawad & Kleiner, 1996). In returns management activities, customer service representatives usually communicate with consumers through channels such as telephone, email, or online chat to answer questions from consumers and provide return support (Taylor, 2021). In fact, the role of customer service representatives goes beyond answering simple inquiries or reassuring angry customers; they are also expected to perform the combined functions of logisticians, technicians and salespeople (Szpekman, 1992). First, customer service representatives can answer questions for consumers about return policies. For example, they can answer consumers' questions about return conditions, return deadlines, return methods, refund methods, etc., and help consumers understand return policies, as well as make correct return decisions. Second, when a consumer initiates a return, the customer service can assist the consumer to submit a return application. They could check the purchase information in real time, such as product information, order number, reason for return, etc. At times, returns could be complicated for customers, which may require a professional customer representative to help consumers through the return process. Third, customer service representatives can promptly answer consumers' inquiries about the progress of returns, such as return logistics. Consumers care about the progress of returns. They want the return process to be transparent so they can track the progress of the return and get a refund in a timely manner (Martínez-López et al., 2022). Fourth, when a consumer chooses to return a product, the customer service representative may be the first communication channel that the consumer thinks of and the easiest to choose. Therefore, customer service representatives may need to coordinate with internal departments, logistics companies, and other relevant parties to ensure a smooth return process. In conclusion, customer service representatives play an important role in returns management, and they not only directly face customers, but also bear complex job roles.

(6) Recycling companies. Recycling refers to the breaking down of products into raw materials (Paço et al., 2021). Recycling has many benefits. For example,

recycling clothes can reduce space requirements in landfills, as well as reduce energy consumption (including water resources), reduce pollution, and the need for dyes, among other benefits (Söderholm & Ekvall, 2020; Worrell & Reuter, 2014). In return management, recycling companies refer to companies that specialize in recycling returned products. Its main business is to collect, sort, process, recycle and dispose of returned goods in order to minimize the environmental impact of returns and maximize the value of returns (Startups, 2008). First, recycling companies collect returns, both sorted and unsorted, from e-retailers. There may also be a 3PL involved in this process (responsible for transferring the return to the recycling company). Second, recycling companies need to process recyclables, such as sorting, dismantling, recycling, etc. Recycling is usually through a melting process (Paço et al., 2021). For recyclables that may pollute the environment, recycling companies will adopt corresponding environmental protection methods. Take electronic waste, for example. Electronic waste consists of a variety of materials, including hazardous materials, potentially valuable materials, and other useful materials (Lucier & Gareau, 2019). Recycling companies often use various physical and chemical methods to extract useful materials from them. Third, recycling companies may also try to restore the value of recyclables. For example, recycling companies might repair or refurbish items that can be resold and put them back on the market. That is to say, recycling companies may also have some functions of refurbishment or maintenance companies. In conclusion, recycling companies can extract value and reduce pollution from recyclables through a series of specialized processes.

2.2.3 Return Management Policies

With the rapid growth of online returns and their rising importance in the retail market, academic interest in returns management policies has increased significantly (Abdulla et al., 2019). Due to the nature of online shopping, e-retailers receive more product return requests than traditional brick-and-mortar stores, so online retailers need to be prepared for returns processing (Ahsan & Rahman, 2021). Returns management policies are not only a key tool for e-retailers to handle online returns, they are also an essential part of e-commerce business operations.

Return management policy is a set of rules that demonstrates how customers can return products purchased from an e-retailer and get their money back (Janakiraman et al., 2016; Oghazi et al., 2018; Pei et al., 2014). In early commerce,

some large merchants started offering their own return policies to attract more shoppers. Subsequently, some countries also began to introduce relevant laws, stipulating that merchants must provide return policies to protect consumers' rights and interests (Mackie, 2023). At the same time, some merchants are constantly improving their return policies to increase customer satisfaction and loyalty. For example, previous investigations found that the transparency and speed of refunds can make the difference between happy and disappointed customers who request a return (Narvar, 2019). According to the same investigation, the top reason for being satisfied with online returns is that the process is quick and easy (58%), and knowing the status of the return process is the second most important factor (34%) for a positive experience (Narvar, 2019). So, many e-retailers are working hard to improve the transparency of their return policies, the speed of return processing, the convenience of the return process, and so on. At present, the return management policy has become the basic relationship between e-retailers and consumers. Next, why return policy is so important will be discussed.

2.2.3.2 Why Return Policy Matters?

Online returns are not an e-retailer's favorite part, but they are an important part of online shopping that cannot be ignored. Efficient return service can be seen as a second chance for service recovery in online shopping to make up for online customer dissatisfaction with the overall purchasing experience (Mollenkopf et al., 2007). Furthermore, research showed that e-retailers can view returns for online customers as a value-added activity rather than a cost (Ahsan & Rahman, 2021). This is because, online customers who have a positive return experience significantly increase repeat purchases and loyalty, unlike customers who have no return experience (Griffis et al., 2012). Positive experiences with retailers' return services are mainly reflected in their return policies. Return policies can be recognized as a market signaling mechanism that allows e-retailers to signal service commitment to online customers, thereby promoting the trust of online customers (Oghazi et al., 2018). Return policies are important to both e-retailers and customers.

First, a refund policy is often seen by customers as a guarantee of good product quality (Li et al., 2013a). If an e-retailer makes it clear that customers can get an easy refund for product quality issues, customers may be more confident in the quality of their products (Wood, 2001). Additionally, customers may worry that once

they need return their purchases in online transactions, they will face complicated gatekeeping steps or even not be able to get a refund. Therefore, in order to build trust and retain customers (loyalty), e-retailers often display their return and refund policies clearly (Tyagi, 2021). For example, the world-renowned supermarket Walmart prominently displays its refund policy in several different places on its website. Conversely, if customers can't find these policies, they may distrust the e-retailer and switch to a competitor that offers a better return policy.

For customers, 1) management decisions about return policies, along with many other operational considerations, can affect consumer behavior at every step in the shopping process (Abdulla et al., 2019). In addition to price, product, and brand reputation, return policy is also an important factor in a customer's decision to buy. Previous literature indicated that e-retailer's return policy can have a tangible impact on consumer behavior before a purchase is made (Abdulla et al., 2019). According to a survey of online shoppers, 67% of shoppers check the return policy page before making a purchase (Kiniulis, 2021b) and 50% of online shoppers abandon a purchase due to a lack of return channel options (SaleCycle, 2020). Return policies can help e-retailers attract new customers, build customer trust, and increase sales because consumers are more inclined to buy when they know their return rights. 2) A return policy usually answers most of the common questions customers may have before or after purchasing a product. Therefore, clear, fair, and effective returns policies can reduce online shoppers' uncertainty during the shopping process, which ultimately reduces unnecessary communication and disputes. 3) A return policy with different attributes could lead to differing consumer moral recognition, moral judgment, moral intensity, and intentions toward fraudulent return (Chang & Yang, 2022). So, how consumers perceive returns and whether they are fraudulent will be affected by the return policy.

For e-retailers, 1) a return policy is a risk reliever often used by retailers to increase consumer demand (Greatorex & Mitchell, 1994; Janakiraman et al., 2016). Another literature indicated that e-retailers use return policies both as a mechanism to decrease purchase risk associated with products and as a means to signal product quality (Abdulla et al., 2019). Therefore, an effective return policy can help e-retailers boost online shopper's confidence and increase sales. 2) Previous research considers returns management not only as a cost but also as a tool to improve customer service (Anderson et al., 2009; Petersen & Kumar, 2009). In order to attract hesitant

customers to make a purchase decision, especially under the competitive pressure of online retailing, many online retailers/sellers may offer full (or nearly full) refunds (Yang et al., 2022). 3) Additionally, a clear return policy helps manage customer's expectations (Akçay et al., 2013). Return policies tend to manage customer expectations by clearly stating their return terms (e.g., return conditions, return deadlines, return fees, and return methods, etc.). Making customers aware of these returns-related policies before or during the shopping process can help reduce misunderstandings and unnecessary disputes. 4) Return policies also help deter fraudulent returns by setting restrictive requirements (Chen et al., 2023). Fraudulent returns have long been an e-retailer's nightmare. For example, products that are damaged by the consumer themselves are generally not eligible for return. However, some consumers have taken advantage of the retailer's free return policy to fraudulently return these damaged products (Harris, 2010). E-retailers pay dearly for fraudulent returns because they are difficult to track and prevent. A restrictive returns policy may be beneficial in reducing fraudulent returns and thus the losses associated with them.

Previous research proposed that customers derive their expectations from initial standard of a product (or service) and form perceptions of the standard by experiencing product (or service) performance (Oliver & Burke, 1999). Under this context, if customers perceive an online retailer's return policy to be inconsistent (or inaccurate, opaque, unfair, etc.), customers' perceived risk will increase (Kirmani & Rao, 2000). Increased perceived risk discourages online shoppers from placing orders. If e-retailers are to mitigate this potential risk, they must provide customers with clear and precise expectations of a customer-friendly return policy (Bonifield et al., 2010). Next, we'll explore the components of a return policy, which are the foundation of providing a clear and precise customer-friendly return policy.

2.2.3.2 Key Components of a Returns Policy

A return policy is an agreement between an e-retailer and a consumer, which stipulates under what circumstances consumers can return products, as well as the specific methods and procedures for returning products. Return policies can positively influence a customer's decision to purchase a product from a retailer (Bonifield et al., 2010; Mollenkopf et al., 2007). Therefore, e-retailers need to know every detail of the return policy. From the perspective of composition, the return policy is not a single

item, but a series of contents composed of multiple parts. Therefore, this subsection focuses on the components of a return policy. The following are the key components of a returns policy.

Table 2.4 Key components of a returns policy

Components	**Definition**
Return conditions	The return conditions refer to the requirements that customers need to meet to apply for a return according to the return policy of the e-retailer.
Return deadline	A return deadline is a time limit set by an online retailer within which a customer can request a return for a specific reason, and returns will not be permitted after this period.
Return method	Return method refers to how customers return items they have purchased online.
Refund method	Refund method is the way by which the money is credited to the customer when the product is returned.
Shipping charges	Shipping charges (return shipping fees) refer to the shipping cost of the product when the consumer returns the product.
Exclusions or non-returnable items	Exclusions or non-returnable items are items that cannot be returned after being sold according to the return policy.
Customer responsibilities	Customer responsibility is the additional materials that the customer needs to submit or present in order to complete the return (e.g., photos of the product being damaged).

(1) Return conditions. In retail practice, return condition is one of two key factors in determining the leniency of a return policy (Heiman et al., 2001; Jeng, 2017). The return conditions refer to the requirements that customers need to meet when applying for returns according to the return policy of the e-retailer (Heiman et al., 2001). For example, e-retailers need to clarify whether customers are allowed to return opened or used items. Generally speaking, the conditions that allow application for return usually include: product quality problems (such as damage, defects), products that do not match the description (such as size, color, function, etc. are significantly different from the description), products that are sent wrong or missing, and packaging damage. For some special products, such as food, pharmaceuticals, cosmetics, etc., online retailers may not allow returns. Because the safety of these returned products cannot be guaranteed. In addition, some digital products (audio or video, etc.) may not be eligible for the return policy. Return conditions are the key content that e-retailers check in their gatekeeping activities.

(2) Return deadline. Return deadline is another key factor in determining how generous a return policy is (Heiman et al., 2001). Most e-retailers have a deadline for returns, after which consumers may no longer be eligible to initiate a return. E-retailers have mostly different policies regarding return deadlines. Most of them have return deadlines based on product categories or rules of experience. These deadlines can be as long as a year or as short as a week. According to a survey, 62.58% of online consumers expect that e-retailers could allow their returns within 30 days of purchase (Dopson, 2021). As mentioned earlier, certain products are not allowed to be returned even after they have been sold (for example, some medicines and food). Previous research explored the impact of return deadlines on returns. For example, shortening the return period, may have the counter-intuitive effect of increasing return rates (Janakiraman & Ordóñez, 2012). In short, e-retailers will set return deadlines to protect their own interests, and at the same time, it is convenient for customers to complete the return procedures within a reasonable time.

(3) Return method. The return method refers to the channel and method for consumers to complete the return and obtain the corresponding refund (Song & Gamborg Nielsen, 2017). E-retailers need to explain to consumers the available methods for returning products. For example, options to deliver the item, ship it back to the physical store, BORIS, etc. Since each e-retailer is different in size, return policy, operations, return process, etc., specific return methods may vary from e-

retailer to e-retailer. To ensure greater cost-efficiency, many e-retailers have begun exploring the possibility of consolidating returned products into one central collection point (Liu, 2014; Min et al., 2008). This could give e-retailers a competitive advantage by offering better returns. In conclusion, the return method is an important part of the return policy.

(4) Refund method. A refund method is the means by which money is credited to the consumer who requests a return (Martínez-López et al., 2022; Spera, 2022). Common refund methods used by e-retailers include refund by the original payment method, refund by the balance (If the consumer has a balance in the retailer's online store, the e-retailer can refund directly to the consumer's balance so that the consumer can use it for the next purchase), refund by cash, refund by credit, bank transfers, and transferring refunds to third-party payment platforms (Spera, 2022). Which refund method to use depends on the return policy of the e-retailer and the choice of consumers themselves. In addition, the refund method is related to how quickly consumers can receive their refund. For example, if a consumer chooses to receive a cash refund, they may need to visit an e-retailer's physical store. However, refund by the balance, refund by credit, and bank transfers, etc. may be used to complete refund remotely. Now, a new refund practice known as "instant refunds" allows consumers to get their money back immediately after initiating a return (Spera, 2022), which means consumers can get the refund before the seller receives and inspects the return (Martínez-López et al., 2022). For some consumers, this kind of instant refund is very attractive, because they don't have to worry about refunding.

(5) Return shipping fee (or restocking fee). Return shipping fee refers to the shipping cost of the product when the consumer returns it (Li et al., 2021). Clarifying who is responsible for return shipping is necessary, as it is a concern for both consumers and e-retailers. E-retailers also differ in how they handle return shipping. Some e-retailers may offer prepaid return labels (Shipping Easy, 2022), while others may require customers to pay for shipping. Generally speaking, if consumers need to return products due to product quality problems, the return shipping costs will be borne by e-retailers. If the return is due to the customer's own reasons, then the return shipping fee will usually be borne by the customer. Another study related to return shipping found that it is reasonable for e-retailers to pay return shipping when actual returns are low, and it is reasonable for customers to pay return shipping when actual returns are high (Zhao et al., 2020). One article reported that 79% of online consumers

expect free return shipping, yet only 49% of e-retailers offer this free service (Callarman, 2019). Additionally, in order to avoid the risk of paying the return shipping fee, a product called return shipping insurance is sold by insurance companies (Li et al., 2021). Return shipping insurance will pay for return shipping when a return occurs. When the transaction is about to be completed, return shipping insurance will be displayed and consumers will be told the benefits of purchasing return shipping insurance. It's also possible for generous e-retailers to purchase their return shipping insurance and send it to customers.

(6) Exclusions or non-returnable items. E-retailers need to clearly inform consumers which products cannot be returned when selling products. For example, clearance sale items may not be allowed to be returned (Xu, 2020). If consumers are not informed in advance, disputes may arise. This is an unnecessary hassle for both e-retailers and consumers. Generally speaking, non-returnable products mainly include three categories: first, products involving health and safety (Xu, 2020). For example, food, pharmaceuticals, cosmetics, personal care products, etc. These products are closely related to the health and safety of consumers. If these products are allowed to be returned, e-retailers may not be able to ensure that the products are still safe. If the safety of the product cannot be confirmed, the product cannot be resold. Second, digital products. Digital products generally refer to those products that can be produced and transmitted through electronics channels (Ma et al., 2019). Common virtual products include: digital film and television products (such as TV series that can be downloaded and watched), digital music (such as music in Apple Music), virtual game items (such as virtual props, equipment, skins, etc.), e-books (such as e-books in Kindle), software programs (such as computer games), etc. Due to the physical nature of virtual products, most e-retailers may not support consumers returning such products. Because once consumers receive virtual products, it is difficult for e-retailers to ensure that consumers do not copy products. Third, customized products are usually not eligible for return (Xu, 2020). A customized product is a recognition of the uniqueness of the customer as an individual (Surprenant & Solomon, 1987). Customized products are often produced according to the unique needs or conditions of consumers (e.g., a suit tailored to the consumer's figure). If the consumer returns the product, it means that the product could be difficult to sell.

(7) Customer' additional responsibilities. When consumers initiate a return, they may have other additional responsibilities. First, e-retailers may ask consumers to provide some necessary documents. These necessary documents are usually the original proof of purchase (Ambilkar et al., 2022a), such as the receipt, invoice or order confirmation, etc. By checking the original proof of purchase, e-retailers can confirm whether consumers have actually purchased the product, thereby ensuring the legitimacy of the return process. Second, by checking the consumer's original proof of purchase, the e-retailer can see the money that should be refunded to the consumer. So, this activity helps ensure the accuracy of refunds. Finally, some e-retailers may require consumers to provide the original packaging and labeling of the product (Kang, 2023). Original packaging and labels ensure that returned products remain intact and safe during the return process. For example, a product that has been opened from its outer packaging is likely to be damaged in transportation.

2.2.3.3 Classification of Return Policy: Lenient vs Restrictive

Return policies are generally characterized in terms of their leniency, which refers to the convenience and ease with which consumers are allowed to make their returns (Janakiraman et al., 2016). Some e-retailers have remarkably lenient return policies that allow any return for any reason, at any time, and provide a full refund of the price paid. Less lenient retailers impose restrictions, such as restocking fees, return deadlines, and even rejecting return requests for certain products altogether (Abdulla et al., 2019).

Despite the high cost of processing returns, e-retailers are increasingly offering lenient return policies. Due to the nature of online transactions, e-retailers often have more accurate product information than consumers. To reduce consumer concerns about hidden information, e-retailers could employ lenient return policies to try to signal high product and service quality (Zhang et al., 2017). In addition, Research in support of offering lenient return policies argued that lenient return policies could bring much more benefits for e-retailers. For example, Fornell and Wernerfelt (1987) illustrated that a lenient return policy can often enhance the customer experience, increase customer loyalty, and generate positive word-of-mouth. Ketzenberg et al. (2020) indicated that e-retailers often offer lenient (consumer-friendly) return policies to reduce customers' perceived shopping risk and increase demand. Through a meta-analysis of 21 papers, Janakiraman et al. (2016) found that leniency, on the whole,

increased purchases more than returns. Some companies integrate returns as an integrated stage of the sales process, sending customers products that exceed expectations and encouraging returns. For example, Zappos, Nordstrom, and Patagonia facilitate and even encourage customer-initiated returns to build customer's brand loyalty.

However, e-retailers face many serious challenges in online returns, which may force e-retailers to reconsider the value of offering lenient and hassle-free returns policies (Ketzenberg et al., 2020; Kohan, 2022). Previously, e-retailers offering easy returns rested on a fundamental assumption: consumers would not abuse the lenient return policies. However, according to a survey, nearly 20% of customers may violate this assumption by purchasing products with the intention of returning them after satisfactory use (Rosenbaum & Kuntze, 2005). Another literature reported that almost 18% of online shoppers engage in this practice (Piron & Young, 2000). Several retailers, including Target, Home Depot and Saks, have re-evaluated their lenient return policies due to fraudulent returns. Some e-retailers may reduce return rates by adopting restrictive return policies, such as charging return fees. However, previous research suggested that tightening or loosening policies by e-retailers will have an impact on customers' purchasing behavior (Haarlander, 2001; Passy, 2002). Increasing return restrictions will bring its own risks, and the greatest of which is customer churn, since easy return policies are part of the overall value proposition offered by retailers (Dholakia et al., 2005). Therefore, e-retailers need to balance between offering return policies that are too strict and returns that are too lenient (Wang et al., 2013). Specifically, e-retailers need to adjust the dimensions of return policy leniency to maintain a balance between building customer loyalty through free returns and incurring losses due to opportunistic returns (or fraudulent returns). Based on previous literature, return policies can be classified as being lenient or restrictive along five dimensions (Janakiraman et al., 2016).

(1) Time leniency. A lenient return policy allows customers return a product within a specified deadline if it doesn't meet their expectations (Abdulla et al., 2019). However, the market price of a product may be time-dependent. The longer the product is in the hands of the customer, the more the value of the product may decrease (Mollenkopf et al., 2007). So, the time-related factors could be used as a restrictive factor in the return policy. Return policies usually include a return deadline. This means that if the customer needs to return the product, he needs to initiate an

application within a certain period of time. According to the a report, 62.58% of online shoppers expect e-retailers to allow for returns within 30 days after purchasing (Finan, 2023). And, most e-retailers do offer customers a one-month return window. Yet, 5% of online shoppers say that they return online orders more than 30 days after buying them. Previous research has examined the determinants of return deadlines. For example, a study showed that the product life cycle and consumer return rate play crucial roles in the optimal time leniency decision. When the return rate is low, the e-retailer offers an indefinite return deadline. Otherwise, the optimal length of the return deadline depends on the product life cycle (Xu et al., 2015). While e-retailers often use return deadlines as one of their restrictive return measures, previous research has found that longer return deadlines may also have benefits. For instance, one study revealed that the e-retailer's order quantity and profit increase in time leniency (Ülkü & Gürler, 2018). Other studies showed that higher time leniency is associated with a higher willingness-to-pay for product (Heiman et al., 2015; Suwelack et al., 2011). The longer an e-retailer offers a return deadline, the more lenient the return policy is perceived by consumers.

(2) Monetary leniency. A lenient return policy might allow for a refund of the full amount the consumer paid for the product, while a strict policy might allow for a refund of only a portion of the price the consumer paid (Pei et al., 2014). Previous research suggested that monetary leniency will affect customers' attitudes and decision-making behavior. Research suggested that monetary leniency can stimulate liking toward a retailer's return policy (Posselt et al., 2008) and decrease post-return regret (Bower & Maxham, 2012). In general, many academic studies have shown that higher monetary leniency results in favorable customer behavioral intentions and actions from a retailer's perspective (Gelbrich et al., 2017; Hjort & Lantz, 2016; Pei et al., 2014). Some other studies indicated that monetary leniency affects both purchase and keep or return decisions, such as Su (2009), Shulman et al. (2009) and Akçay et al. (2013). According to these studies, online customers will keep the product if the valuation is higher than the refund they get from the e-retailer. This implies that during a purchase decision, the customer relies on his/her expected utility, which is a function of the product valuation and refund amount. Under this approach, higher monetary leniency also implies a higher return probability. Generally, a policy of full refund is considered more lenient by online shoppers.

(3) Effort leniency. As for effort, early literature first proposed the concept of "hassle" (Davis et al., 1998). Hassle involves the customer effort required to initiate a return request and ultimately complete an online return. Manufacturers or e-retailers can adjust the level of "hassle" to affect consumers' return behavior (Su, 2009). For example, does the customer need a form when requesting a return, or does the customer have to contact a specific person to authorize the return. It's said that most retail stores reduce returns by imposing some level of hassle on returns (Davis et al., 1998). Subsequent research has explored the effects of effort leniency. For example, literature suggested that effort tolerance can positively influence customer ratings of the convenience about returns services (Heim & Field, 2007), the perceived value of return service (Mollenkopf et al., 2007), and MBG credibility (Suwelack et al., 2011). Other research has shown that effort leniency can also influence certain emotional responses. Effort leniency, for example, can increase return satisfaction and can reduce expected regret (Mollenkopf et al., 2007; Suwelack et al., 2011). In conclusion, those return policies that do not have too much "hassle" are more likely to be perceived by online shoppers as having more effort leniency.

(4) Scope leniency. Scope leniency refers to the range of products that customers are allowed to return, that is, whether the types of products eligible for return are limited (Lesonsky, 2016). Coverage and durations of different return policies vary significantly across e-retailers (Posselt et al., 2008). For example, products purchased on promotion sale may not be eligible for return. Although scope leniency is very important, the relationship between scope leniency and various consumer behaviors is not studied extensively (Abdulla et al., 2019). A literature showed that a wider scope of leniency can improve online shoppers' perception of product quality and reduce purchase decision time (Wood, 2001). Another literature illustrated that when retailers provide pre-purchase recommendations, higher scope leniency leads to higher product valuations by customers. But when retailers don't offer recommendations, it can lead to lower product valuations for customers (Kim & Wansink, 2012). In general, a return policy with a wider scope is perceived as more lenient by online shoppers.

(5) Exchange leniency. While some e-retailers are able to offer cash refunds, others are not. They may offer store credit or an exchange for returned items. Exchange leniency refers to an e-retailer's flexibility in offering options for returned products, such as cash back or store credit. One study argued that exchange leniency

may be effective in enhancing perceived image of e-retailers but may not be a signal of product quality (d'Astous & Guèvremont, 2008), and this study also demonstrated the importance of exchange leniency in return services. However, it has also been suggested that exchanging leniency does not appear to be as important as other dimensions of return leniency. For example, a study showed that exchange leniency is not a significant predictor of customers' ratings of a retailer's ease of return service (Heim & Field, 2007). Generally speaking, return policies that allow cash refunds tend to be considered more lenient for online shoppers.

In summary, leniency in the above five dimensions is a tool for e-retailers to control the leniency of returns management policies. By controlling the leniency of the five dimensions, e-retailers can develop returns management policies that suit their circumstances (for example, lenient or restrictive returns). For example, higher monetary, time, effort, scope, and exchange leniency leads to a higher perceived quality of a returns service (Abdulla et al., 2022). E-retailers can adjust the level of leniency in these aspects if they wish to improve the perceived quality of service for online shoppers regarding returns. Another example, previous research suggested that e-retailers who meet certain conditions could benefit from lenient return policies. Specifically, these conditions include that the customer cannot obtain significant short-term benefits from the product, that cross-selling profits are high, and that the salvage value of returned products is high (Davis et al., 1998). Another literature indicated that, adopting a lenient return policy also needs to consider the impact of brand familiarity and product category (Jeng, 2017). Lesser-known retailers benefited more from lenient return policies than well-known retailers. If e-retailers do not take into account the moderating effects of brand familiarity and product category, a generous return policy could often become an overinvestment (Jeng, 2017). In short, e-retailers need to flexibly choose the degree of leniency according to their own circumstances, so as to maintain a balance between expanding online sales and reducing online returns (Halzack, 2021).

2.2.4 Return Management Process

As a tool of sustainability, the return management process is gaining much importance in supply chain management. The main purpose of having a return management process is to recover product value and save various costs by handling returned products efficiently (Posazhennikova et al., 2010). Another study indicated that the

returns management process could significantly and positively influence consumer's repurchase behavior (Griffis et al., 2012). As the number of online returns increases, an effective returns management process is becoming more and more important for e-retailers.

2.2.4.1 Differences Between Returns Process and Returns Management Process

In the context of business operations, the returns process and the returns management process are related but distinct concepts. It is easy for readers to confuse these two concepts, because on the one hand, both concepts involve online shopping returns, and on the other hand, some of the contents of the two may overlap to a certain extent. These two concepts are introduced in different chapters of this thesis. In order to avoid misinterpretation, it is necessary to distinguish these two concepts.

As mentioned in the previous sections, the return process refers to all the steps involved in processing a product that a customer decides to return (Mohan & Karpagam, 2020). This process typically includes initiating a return, shipping the product back to the seller, inspecting the return, and refunding the customer. However, the return management process is a broader concept than the return process. Returns management is a supply chain management process that drives internal and external supply chain participants to engage in a series of operations related to returns, reverse logistics, gatekeeping, and avoidance (Rogers et al., 2002). It can be seen that the return management process covers the entire process of return processing. Because the returns management process includes not only the physical process of returning an item, but also managing customer expectations, tracking returns data, managing inventory levels, and ensuring customer satisfaction. As pointed out by Rogers et al. (2002), the proper implementation of the returns management process can not only effectively manage the reverse product flow, but also reduce unnecessary returns in the first place.

2.2.4.2 Key Activities of Return Management Process

Previous studies have provided deep insights on the key activities that should be included in the returns management process. These studies divided the return management process into stages or activities in detail. For example, Rogers et al. (2002) suggested that return management process comprises the "activities associated with returns, reverse logistics, gatekeeping, and avoidance across key members of the

supply chain". A study found that product return management process activities can be grouped into four stages: receiving, processing, sortation, and disposition (Stock & Mulki, 2009). Several studies believed that a returns management process should include five essential activities: avoidance (or mitigation), gatekeeping, collection, sorting, and disposal (Hjort et al., 2019; Rogers & Tibben-Lembke, 1999). Another literature identified six process stages of the return management process, namely customer return request, return logistics, processing and sortation, inventory control, repair and refurbishment, and final disposition (Bernon et al., 2011). Most notably, the "disposal" activity mentioned by all the above literature is often disaggregated into sub-activities such as resell, remanufacture, recycling, landfill, etc. (de Brito & Dekker, 2003). The most widely used is to decompose the returns management process into five essential activities. This thesis also follows this method of dividing the returns management activity into five sub-activities.

(1) Avoidance. In the context of returns management, the term "avoidance" refers to some retailers' strategy for minimizing the total size of returns or the impact of returns on their business (Hjort, 2010; Lambert, 2004; Rogers et al., 2002). As can be seen from this definition, the purpose of avoidance is to reduce the number of returns and associated costs, including the cost of processing returns, restocking, and potential damage to brand reputation. E-retailers have discovered some effective avoidance measures from business practices, and these avoidance measures may involve controlling product quality, improving product descriptions, guiding size selection, providing remote support, etc. "Avoidance" is characterized by preemptive detection and resolution of return issues, that is, these measures can often reduce online returns by resolving problems before they become returns. Without these avoidance activities, e-retailers could experience a high volume of online returns, resulting in increased costs as well as negative customer complaints.

(2) Gatekeeping. Gatekeeping activities are very important in online business (Hjort, 2010). Gatekeeping is the screening of return requests and returned items (Rogers et al., 2002). It involves the decision that e-retailers need to make in returns management to limit the number of items allowed to enter reverse logistics (Gardine & Reefke, 2019; Rogers et al., 2002). The function of gatekeeping activities is to ensure that only eligible returns are accepted and processed, thereby reducing the risk of fraud returns or abuse of returns policies. 1) Gatekeeping is the entry point of products into the reverse logistics system (Rogers et al., 2002) and the main content of

gatekeeping activities is to determine whether the returned product can continue to the next step of the return process. Therefore, gatekeeping is a pre-emptive activity in online returns and is the basis for other subsequent activities (such as inspection, repair, and disposal. If the gatekeeping fails, other subsequent return process will become confused. 2) While gatekeeping activities are often applied at entry points, gatekeeping can actually be applied at multiple locations in the full returns flow (Rogers et al., 2002). Without effective gatekeeping activities, e-retailers may accept fraudulent returns and opportunistic returns, resulting in financial loss. However, research has found that e-retailers often lack the resources, manpower, and facilities to enforce gatekeeping, which can increase returns processing costs for e-retailers compared to traditional retailers (Griffis et al., 2012).

(3) Collection. Collection refers to the process of gathering returned products from customers and transporting them to a designated location for processing or disposal (Daaboul et al., 2014). Previous literature indicated that collection activity involves two stages: the pick-up of the returned product and the transportation of the returned product (Lambert et al., 2011). This can be done by the e-retailer, a third-party logistics provider, or the customer themselves. For example, under the BORIS model, customers can purchase products online and return them at physical stores designated by e-tailers when they need to return them. It depends on several factors including the structure of the company, the complexity of the product, the reason for the return, and the geographical area (Lambert et al., 2011). The role of collection activity is to ensure that online returns are shipped to the appropriate facility. The risk of improper collection is that returns may be lost during collection (or misplaced), causing additional hassle, expense, or delay. To implement the collection activity, various measures can be taken. For example, e-retailers can establish a clear return process for online customers, set up a central location to receive online returns, or contract with a logistics company to collect online returns.

(4) Inspection. The purpose of the inspection activity is to identify any damage, defect or other problem that may affect the value of the returned product (Amazon, 2022). However, inspection of returned products is often a labor-intensive activity. For example, employees need to look carefully for any signs of damage that could affect the resale value of the product. This process basically cannot be automated, so it takes a lot of manpower, time, and effort. It is this process that greatly increases the cost of reverse logistics. In the inspection activities, it mainly includes the following

three aspects: First, check the integrity of the returned goods (that is, whether the accessories and components of the original product are complete). For example, if a customer purchases and returns a laptop, the electronics retailer needs to check that the laptop is complete with cables, power adapters, manuals, etc. Second, e-retailers need to test the functionality of those returned products. By testing the functionality of returned products, e-retailers can ensure that returned products are as good as they were before they were sold. Products that no longer function properly need to be sent for repair or disposal. Third, if the product does not work properly, the cause and responsibility need to be determined. For example, if damage is found during an inspection, the employee will assess whether the damage was caused by the customer. Based on the results of the inspection, the e-retailer will determine whether the returned product is eligible for a refund or exchange.

(5) Sorting. E-retailers need to decide what to do with returned products during the sorting phase. The most common rule is that returned products need to be accurately sorted by type and quality (Gunasekara et al., 2023). Sorting is the process by which e-retailers evaluate returned products to determine how to proceed. This categorization reduces uncertainty about the quality of returned products, thereby allocating online returns to various value recovery processes (Gunasekara et al., 2023). This activity typically involves determining the subsequent disposition of the returned product after assessing its condition, such as resale, repair, refurbishment, and landfill, etc. Good sorting activity can help e-retailers get the most value from returns. Conversely, improper sorting activity can prevent e-retailers from capturing value from returned products. For example, e-retailers may mistakenly send returned products that still have recycling value to landfill, resulting in lost revenue or additional costs. Therefore, it is imperative for e-retailers to properly sort returned products to minimize the costs associated with returns.

(6) Disposal. When products are returned, they may be classified as either resalable or non-resalable. Resalable products can be put back into inventory and sold again, while non-resalable products may need to be disposed of. Disposal is the exit of the reverse logistics system, and it typically refers to the final disposition of returned products that are deemed unsuitable for resale or reuse (Lucier & Gareau, 2019; Paço et al., 2021). Disposal activities will determine which value recovery options or combinations generate the most value (Gunasekara et al., 2023). There are several options for disposal, including recycling, donation, liquidation, and landfill (Lambert

et al., 2011). Table 2.5 details these disposal methods. Disposal is important for e-retailers. First, by properly handling online returns, e-commerce retailers can reduce the economic losses caused by online returns. For example, by partnering with recycling companies, e-retailers may extract valuable materials from returns that have to be destroyed. Second, returned items often require additional inventory space and can tie up valuable dollars for e-retailers. Through the disposal process, inventory space will be freed up and storage costs may be reduced.

Table 2.5 Options for disposal

Options for disposal	**Explanation**
Recycling	Recycling is a series of processes through which useful materials are extracted from returned products. The goal of recycling is to recover useful material from products and to reduce pressure on the environment.
Donation	Donation means donating returned products to individuals, organizations or charities in need free of charge. Donations help improve the living conditions of groups in need.
Liquidation	Liquidators specialize in acquiring unsold inventory, returns or out-of-season products. Liquidators acquire product and then dispose of it (including repackaging, relabeling and reselling).
Landfill	Landfilling is the process of burying returned items that cannot be reused or resold. These items break down underground and releases harmful substances. Therefore, this is an unsustainable way of doing things.

2.2.4.3 Quality of Returns Management Process

As a critical part of returns management, the quality of the returns management process can have a significant impact on operational efficiency and profitability. Previous literature pointed out that return is a kind of service failure, and consumers may have been dissatisfied with the product or service before returning the product (Holloway & Beatty, 2003). If consumers are dissatisfied with the return service quality again during the return process, it may lead to serious consequences. For example, lower consumer satisfaction and even customer churn. Therefore, it is necessary to clearly evaluate the factors of returns management process in order to improve service quality. The following factors can be used as a yardstick to evaluate the quality of return service process.

(1) Fairness. Online consumers may have different experiences with different return management processes, resulting in varying levels of online consumer satisfaction (Cassill, 1998). Consumer satisfaction depends on whether consumers believe that they are treated fairly by e-retailers during the return process (Mccoll-Kennedy & Sparks, 2003). It can be seen that whether the return policy is fair is an important basis for consumers to judge the quality of the return management process. For example, customers may feel unfair if the return process requires customers to fill out multiple forms, provide redundant information, contact multiple customer service representatives, or not get a refund for a long time. When customers feel that the return policy is unfair, they may be dissatisfied (Ahsan & Rahman, 2016). Therefore, the quality of the return management process is related to the fairness of the return policy perceived by consumers.

(2) Transparency. Given the uncertainty of product prices, demand, and quality, e-retailers must increase information transparency to manage online customer returns (Ambilkar et al., 2022a). Information transparency in return management process means that e-retailers provide sufficient, accurate and clear information to online consumers during the return management process, so that consumers can follow the processing information of online returns. For many consumers, e-retailer returns management can be an opaque activity. For example, when a consumer initiates a return and ships it back to an e-retailer, it is difficult for them to know where the return is or how far it has been processed. However, with an increased focus on the service experience, consumers are increasingly placing greater emphasis on transparency in the returns management process. Online customers expect transparent returns from e-retailers, which means e-retailers need to provide visibility

into every part of the returns management process (Yerpude et al., 2018). For example, they may want to know how their returns are being processed at any given moment. Consumers may feel that the returns management process is reliable if it is more transparent. Now, many e-retailers provide online customers with integrated services such as purchase, exchange and return through Apps. When consumers need to return a product, they can often check the progress of the return processing at any time through the Apps.

(3) Flexibility. Flexibility in the returns management process is very important to online consumers (Bai & Sarkis, 2013). First, consumers may perceive online shopping as risky if the returns management process lacks flexibility. Because in an inflexible returns management process, it may take additional time or effort for the customer to return the item. For example, an inflexible return policy may fail to provide diverse return channels, which may cause inconvenience for customers to return products. Second, if the returns management process is flexible, it may mean that customers will have more return options. For most online shoppers, returns are not the goal. They may want to be able to have other alternative options, such as exchanges, credit points, etc. To address these consumer concerns, e-retailers should make their returns management process more flexible. Literature indicated that flexibly authorizing returns for customers and providing an easy way to return products is an important part of good customer service (de Leeuw et al., 2016; Dwyer, 2012). For example, for some low-value products, consumers do not need to go through cumbersome application steps and processing procedures during the return process. In addition, consumers can choose different return methods, such as post-office mailing, returning to the physical store, or arranging for door-to-door pickup. In conclusion, flexibility can effectively reduce the uncertainty of online returns, thus benefiting both customers and e-retailers (Bai & Sarkis, 2013).

(4) Speed. Service speed has always been an important criterion for consumers to evaluate the service quality of e-commerce. Now, the customer service landscape is no longer just about delivering high-quality service, but also about speed and efficiency (Brialey, 2020). When customers decide to return an item, they usually expect the problem to be resolved quickly. If returns are processed slowly, customers may be dissatisfied. Conversely, improving returns processing responsiveness minimizes the time it takes to resolve customer issues, which increases customer satisfaction with returns service (Brialey, 2020). Additionally, most consumers want

to receive their refund as soon as possible after initiating a return (Martínez-López et al., 2022). If an e-retailer is slow to issue refunds, consumers may become dissatisfied and not make future purchases. In fact, for e-retailers, fast processing is also very important. Most returns are time-sensitive, and e-retailers therefore need to make processing decisions as quickly as possible in the returns process (Blackburn et al., 2004). So, processing returns as quickly as possible benefits both online consumers and e-retailers.

In conclusion, the returns management process should be fair, transparent, flexible and fast. Online shoppers value these service qualities and expect e-retailers to provide returns management processes with these characteristics. E-retailers should focus on the quality characteristics of these returns management processes and commit to providing returns to consumers in accordance with their published policies. These service characteristics help to increase online shopper satisfaction toward return service, thereby encouraging repeat purchases.

2.2.5 Main Challenges in Current Return Management Practice

Return management is an important part of supply chain management, which has a significant impact on the e-retailer's operation, cost, reputation, and customers' online buying experience. With the growth of product returns, return management is becoming a critical challenge for e-retailers (Ahsan & Rahman, 2021). With the popularity of online shopping, returns management faces increasing uncertainty. Challenges associated with online returns are expected to increase year by year (Independent, 2023). Regarding the challenges in returns management, scholars have conducted a lot of research. For example, the interdisciplinary nature is recognized as one of the reasons returns management is challenging (Frei et al., 2020). Because return management involves multiple fields such as product design, manufacturing, marketing, and supply chain. This section aims to summarize the main challenges in the practice of returns management.

(1) Processing time of returns. Processing time of return could be a significant challenge in returns management. When customers need to return their purchases, they may spend much more time dealing with the return process and return service logistics (Ahsan & Rahman, 2021). The increasing market competition requires e-retailers to quickly handle the return process, inspect returned items, and process customer refunds. Generally speaking, in the return management process, the time

related to return processing mainly includes logistics time, inspection time and refund time (ReturnLogic, 2023). First, consumers need to send the products to the e-retailer, and the e-retailer needs to wait for the products before refunding or exchange them, which requires a certain logistics time. The length of logistics time depends on lots of factors, such as logistics distance, the method of collecting the returned products, and shipping methods. Second, e-retailers need inspect the quality and integrity of returned items, to check if they can be resold (ReturnLogic, 2023). This process is usually done manually. As a result, inspection time takes up a significant portion of returns processing time. The length of inspection time mainly depends on the factors such as the quantity of returned products, types of returned products, inspection procedures, and inspection equipment, etc. Third, the e-retailer needs to refund to the consumer if refund processing is required and this also takes some time (ReturnLogic, 2023). Refund time can be affected by a variety of factors, depending on the refund policy, refund process, and payment methods, etc. All of these factors will affect the return processing time. Consumers could become dissatisfied if e-retailers take too long to process returns. Therefore, returns processing time is recognized as a significant challenge in online returns management.

(2) Lack of information transparency. E-retailers must increase information transparency to manage product returns from online customers (Ambilkar et al., 2022). Transparency in returns management means that e-retailers provide consumers with clear, accurate, and timely return information when processing online returns, so that consumers can understand the handling progress of return requests. Consumer demand for transparency in returns management is manifested in many ways, including returns policy, returns process, status tracking, refund processing, and more. Online customers tend to place a high value on return transparency and transparency in the returns experience is critical to customer retention (McKinsey & Company, 2021). For example, a lack of transparency in returns management can prevent online shoppers from tracking the return logistics process. For returns requiring refunds, e-retailers should promptly process and provide refund status updates to online shoppers. Transparent chargeback processing can reduce consumer anxiety. In conclusion, increased transparency in returns management can reduce misunderstandings, increase efficiency, and improve customer satisfaction. However, due to technical, capital, operational and other reasons, the return process of many e-retailers still cannot

provide enough transparency for online shopping consumers. Therefore, the customer need or need for returns transparency is a challenge in returns management.

(3) Handling complex return requests. In the return processing process, consumers may make many different return requests and e-retailers need expertise or skills to handle consumer return requests. And, e-retailers must ensure that return value is maximized on the one hand, while maintaining customer satisfaction on the other. This is a very challenging task. Specifically, handling complex return requests can be challenging due to the following reasons: First, consumers may return products for multiple reasons (Nel & Badenhorst, 2020). These different reasons may include product quality issues, items not as described, wrong size, wrong color, etc. Different return reasons require different return processing methods, which increases the complexity of handling return requests. Second, different consumers may have different appeals or demands toward online returns. For example, some consumers only need an exchange, while others may insist on getting a refund. It also adds to the complexity of handling return requests. Third, the cumbersome processing process increases the difficulty of returning products. Return management involves multiple activities, including return request, request review, return processing, refund, etc. For some complex return requests, multiple rounds of communication may be required, which can make the return processing process more cumbersome and time-consuming. In conclusion, complex return requests are a serious challenge for e-retailer's returns management.

(4) The unpredictability of online returns. The unpredictability of online returns mainly comes from the differences and uncertainties of factors related to online returns. The factors related to online returns include the reason for return, the quantity of return, the place of return, the time of return, etc. The differences within each factor are often large. For example, customers who initiate returns may live in different parts of the city. Moreover, there are high uncertainties in these factors. For example, e-retailers cannot predict where customers who live will initiate returns. Returns often come from many different unknown locations and end up funneling to a processing center (Nel & Badenhorst, 2020). These differences and uncertainties contribute to the unpredictability of online returns. Although several studies have attempted to model the propensity to predict product returns (e.g., Fu et al., 2016), accurate predictions are still difficult. In short, e-retailers cannot predict which customers will return items, how many will be returned, and where returns will be

initiated. Therefore, the unpredictability of online returns is somewhat unavoidable. This unpredictability is one of the challenges of returns management, as it presents e-retailers with many problems that are difficult to control. First, unpredictable returns make it difficult for e-retailers to accurately estimate inventory levels and demand, potentially leading to overstock or understock issues (Lindsey, 2016; Nel & Badenhorst, 2020). Second, fluctuation in online returns could have a shock to e-retailers' supply chains. This not only increases logistics costs for e-retailers, but also creates other delivery risks. In conclusion, unpredictability is one of the challenges of returns management.

(5) Opportunistic returns and fraudulent returns. E-retailers tend to use lenient return policies to stimulate customer demand and boost sales revenue. A generous return policy may increase online sales, but that will only increase profits if the rate of product returns doesn't rise dramatically (Wood, 2001). And, lenient policies are not only costly to implement, but also highly susceptible to abuse by customers (Ketzenberg & Zuidwijk, 2009). This can be a dilemma for e-retailers. On the one hand, customers who really want to buy the product may return it for various reasons (such as size mismatch, duplicate order, etc.). For these customers, the return policy can reduce the uncertainty in the transaction and thus reduce the risk of consumer shopping. On the other hand, some opportunistic or fraudulent returners may abuse these generous return policies. Opportunism is the use of subterfuge (dishonest means) to achieve an end for personal gain (Pei & Paswan, 2018; Williamson, 1981). For example, some customers buy a lot of clothing and use the clothing for photoshoots during the vacation. When the vacation is over, they return it all. And, thanks to a generous return policy, a lot of the return shipping costs are covered by the e-retailer. Worse than an opportunistic return is a fraudulent return. For example, a fraudulent customer orders an expensive product and returns another, less expensive product. This is typical fraud. To combat opportunists and fraudsters, online retailers must find proper return avoidance measures to reduce losses.

(6) Competitors. The pressure from market competitors is not only reflected in the sales of products, but also challenges the e-retailer's return management (Nel & Badenhorst, 2020). Previous literature pointed out that return policies can intensify competition among retailers (Padmanabhan & Png, 1997). An obvious example is the growing number of e-retailers offering free returns, which seem to have become service standard for online shopping now (Callarman, 2019). A key motivator for e-

retailers to offer free returns is customer demand in online shopping (Kohan, 2022). According to a customer online shopping survey report, 96% of respondents think "free shipping" is important, and 76% of respondents think "free return" is important (Power Reviews, 2021). It can be seen that most online shoppers want free shipping and free returns. E-retailers who can better meet the expectations of online shoppers can gain a greater competitive advantage. For example, these services may mean more customers, higher satisfaction, higher sales, and a better reputation. In order to cope with fierce market competition, more and more e-retailers have to follow this trend to attract potential customers. So, the action from competitors is also one of the challenges of retailers' returns management.

Chapter III Return Avoidance in Online Shopping

3.1 Concept of Return Avoidance

Return avoidance refers to finding some way to minimize the need for customers to return products (Castek et al., 2022; Hjort, 2010; Hjort & Ericsson, 2010; Rogers et al., 2002). Previous literature indicated that “Returns management is the part of supply chain management that includes returns, reverse logistics, gatekeeping and avoidance” (Rogers et al., 2002). Another literature illustrated that return avoidance is perhaps the most effective way to reduce return costs (Hjort & Ericsson, 2010). Building on previous research, this thesis hopes to advance the research related to return avoidance in online shopping.

The purpose of avoidance is to apply some approaches to minimize returns requests (Lambert, 2008; Rogers et al., 2012) or reduce online returns by selling products in such a way (Hjort, 2010). By successfully implementing returns avoidance, online returns will not be sent backward. Therefore, returns avoidance distinguishes returns management from reverse logistics (Rogers et al., 2002). With the rapid development of e-commerce, the concept of return avoidance has been more widely used and deeply studied. For example, many e-retailers introduced online evaluation systems and customer feedback mechanisms to understand customers’ real needs on products (Zaki et al., 2021) and solve customer problems in a timely manner, thereby reducing customer online returns. In the fashion industry, the "360° view" digital technology can greatly improve online customer’s satisfaction and reduce online returns (Stöcker et al., 2021). In addition, some e-retailers also utilize data analysis techniques and machine learning algorithms to predict customers' purchasing behavior and consumer preferences (Gkikas & Theodoridis, 2022; Thiebaut, 2019; Ucuzoglu & Hagel III, 2020). This can help e-retailers make sales strategies in advance to better meet customer needs and reduce online returns. In short, return avoidance has become a common strategy in e-commerce. It can help e-retailers reduce return-related costs and improve customer satisfaction, profitability and competitiveness (Zhao et al., 2020). Therefore, exploring effective ways to avoid returns is one of the keys to the commercial success of e-retailers.

3.1.1 Characteristics of Returns Avoidance

Return avoidance, as one of the contents of return management, has its own characteristics. For example, there are different return avoidance measures at different stages of the shopping journey. These characteristics are critical to the commercial success of an e-retailer. So, e-retailers need to be aware of these characteristics of return avoidance when developing return policies or managing online returns. In general, there are the following characteristics:

(1) Online shopping return avoidance measures can cover all stages of the customer journey: before, during, and after the purchase. These stages correspond to different types of measures that help reduce product returns: information provision, product presentation, and customer service (Stöcker et al., 2021). First of all, in the pre-purchase stage, e-retailers should provide customers with the information availability (e.g., accurate, complete and consistent product information) to support consumers in finding products (Stöcker et al., 2021; Vasić et al., 2019). Providing the right information can help e-retailers eliminate customers' fears about products or shopping online (Deeter-Schmelz et al., 2001). Additionally, this could also reduce the uncertainty in online purchasing, which in turn helps customers make informed purchasing decisions. Second, during the purchase stage, e-retailers need to provide customers with the necessary assistance in the shopping process (Stöcker et al., 2021). For example, enhancing the visual appeal and realism of online products (Boland, 2021). This can help customers better understand how the product will look and feel in real life, thereby reducing the feeling of mismatch after the customer receives the product. Or provide customers with instant size guidance through online customer service to reduce the risk of size mismatch. Third, in the post-purchase stage, e-retailers can employ appropriate avoidance strategies to encourage consumers to keep their products (Stöcker et al., 2021). For example, give customers coupons to encourage customers to keep the purchased products when they want to return products. In conclusion, in different shopping processes, e-retailers can use different return avoidance strategies.

(2) Complexity is one of the intrinsic properties of the returns avoidance. On the one hand, e-retailers can avoid returns according to the three stages of pre-purchase stage, purchase, and post-purchase (Stöcker et al., 2021). Return avoidance measures at these stages may involve many factors, such as product quality control,

return policy, technology application, logistics management, customer service, which could provide valuable diversity for avoiding returns. On the other hand, the diversity of these choices also seems to imply complexity. Complexity theory holds that in a diverse system, each component may affect other parts in unpredictable ways, thereby increasing the overall complexity of the system (Koopmans, 2017). Because e-retailers have to consider how to avoid returns from various factors, this may increase the difficulty of selection and implementation. For example, since each e-retailer sells different products, different products may not be eligible for the same return avoidance measures. Previous literature indicated that lenient return policies and ever-shrinking product lifecycles lead to rapid product obsolescence and mass returns (Min et al., 2008). Also, product maturity and product variety are negatively associated with return probability (Shang et al., 2019). This requires e-retailers to make different measures of return avoidance according to the characteristics of different products. In addition, the characteristics of the customer groups that each e-retailer targets may also be different (for example, age, education level, economic status, etc.). E-retailers need to make their return avoidance according to the characteristics of different consumers. Therefore, both the formulation of the avoidance strategy and the implementation of the strategy are very complicated.

(3) Although return avoidance can cover all stages of the customer's shopping journey, previous research and current practice tend to implement preventive return avoidance at the pre-purchase stage (Walsh et al., 2014). In this sense, return avoidance is preventive, as they aim to prevent returns by taking steps before they occur (Castek et al., 2022). By taking preventive steps before purchasing, e-retailers can reduce the intention or behavior of customers to return products. For example, low-quality products and services reduce customer satisfaction and lead to frequent returns, while high-quality products and services can satisfy the customer and reduce the number of returns (Caramela, 2023; Li et al., 2013b). Product returns due to product quality issues can be prevented by implementing strict product quality management, including raw material inspection, manufacturing process control, and final product testing. It’s said that defective products account for 59% of all reasons returned by customers (Whittaker-Wood, 2019). In addition, it can also provide accurate, detailed and clear product information (including descriptions, specifications, features, functions, etc.), which can help customers make correct purchase decisions

(Vasić et al., 2019) and reduce returns caused by products that do not meet expectations. All of these return avoidance measures are preventative.

(4) E-retailers need to strike a balance between customer satisfaction and operating cost (Wang et al., 2013). While offering a lenient return policy can improve customer satisfaction, it can also increase operating costs. Therefore, e-retailers need to find ways to avoid returns and meet customer demand without reducing profitability. For example, while reducing returns may reduce the cost of processing returns, returns avoidance measures may also increase costs in other areas (including product improvement, customer support and after-sales service, etc.). E-retailers need to evaluate the costs and customer satisfaction, and find a balance to ensure that avoiding returns is efficient and economical. Second, there is a need to strike a balance between offering a lenient return policy and the ability to handle returns (Leeuw et al., 2016). Literature illustrated that offering a lenient return policy for online customers could mean more online returns (Lesonsky, 2016). The influx of online returns to e-retailers means more labor and processing. Not every e-retailer has a strong return processing capability, which is likely to have an impact on the daily operations of e-retailers. Finally, e-retailers also need to make a balance between the availability and effectiveness of returns avoidance measures. Measures to avoid returns should be available and effective. For smaller businesses, some return avoidance measures may be effective (for example, fraudulent return prediction and tracking systems), but are not available because they are expensive. For large-scale enterprises, some return avoidance measures may be available (for example, providing as many online customers service as possible to guide customers to choose), but this measure may not meet the development needs of large-scale enterprises. Easy, simple, and available return avoidance measures are only valuable and meaningful if they are effective.

3.1.2 Function of Return Avoidance

Product returns are a major challenge for e-retailers because they incur significant costs (Asdecker, 2015), reduce customer satisfaction (Walsh & Brylla, 2017), erode profitability (Hjort & Lantz, 2016; Zhao et al., 2020), and damage reputations (Walsh et al., 2016). Clearly, e-retailers want to avoid product returns as much as possible. Returns avoidance is a strategy that aims to reduce the number of product returns (Rogers et al., 2002). The most immediate function of returns avoidance is to reduce

returns. For example, reduce customer returns by improving product quality, design, packaging, delivery, etc. It can have several benefits for both the e-retailers and the customers. Besides reducing returns directly, it also has some important indirect functions.

(1) Return avoidance reduces costs associated with returns. The primary function of return avoidance is to help e-retailers reduce product returns (Rogers et al., 2002). This means returns avoidance can help e-retailers reduce various costs associated with online returns. Returns processing is a very costly process for e-retailers as the process consumes a lot of efforts, money and time (de Brito & de Koster, 2003; Gustafsson et al., 2021; Stock et al., 2006; Stuart et al., 2005). By employing return avoidance strategies to reduce returns, e-retailers can reduce the shipping, handling, inspection, reprocessing, and disposal associated with returns (de Brito & de Koster, 2003). For example, returns processing requires many activities, including receiving returned products from customers, repackaging, sorting, and redistributing products back to warehouses. These process activities may require a lot of cost, such as the cost of manpower, material resources, financial resources, and time cost.

(2) Return avoidance reduces the risks associated with returns. Online returns can pose a number of risks for e-retailers. One of the functions of return avoidance is to protect the interests of e-retailers by reducing these risks. First, returns avoidance can reduce uncertainty in online transactions, thereby improving the accuracy of returns management. For example, if an e-retailer implements effective return avoidance measures, the number of online returns will decrease. Ultimately, it will be easier for e-retailers to control the inventory. Second, by reducing online returns, e-retailers can reduce unnecessary risks in the warehousing process. A common example is that a product returned to a warehouse may be damaged due to storage issues. For example, electronics can be damaged by moisture. This may pose a risk that the product cannot be resold. Third, return avoidance measures can reduce the risk of reputational damage. The high volume of online returns not only erodes e-retailers' profits (Comstock, 2020; Yang et al., 2022; Zhou & Hinz, 2016), but also damages e-retailers' reputations (Waldorf, 2021). For example, Taobao in China used to be flooded with counterfeit and counterfeit products and resulted in a large number of returns. In the minds of Chinese customers, Taobao is still synonymous with cheap and low-quality products. This is damaging to the reputation of the Taobao brand or

its parent company, Alibaba. Plus, research showed that an online retailer's reputation is a powerful tool for reducing product return rates. If the e-retailer's reputation suffers, it could mean more online returns (Walsh et al., 2016). With return avoidance measures, the number of returns associated with this can be reduced, thereby safeguarding the reputation of the e-retailer.

(3) Return avoidance can improve customer satisfaction. While the purpose of return avoidance is to reduce the occurrence of returns, effective return avoidance measures can also improve customer satisfaction. A common practice to reduce customer returns and increase customer satisfaction is to provide a better shopping experience or problem resolution. For example, increasing the transparency of online information not only increases the likelihood of product selection (Veltri et al., 2023), it is also a common method of avoiding returns. Customers place a high value on shopping transparency (Schäfer, 2023). E-retailers can provide accurate, detailed and clear product information during the shopping process, increasing shopping transparency. This information can help customers make better decisions before purchasing (Vasić et al., 2019), thereby increasing customer satisfaction. Additionally, providing timely, friendly, and effective customer support not only reduces online returns, but also improves customer satisfaction.

(4) Return avoidance can reduce waste and environmental pollution. First, return avoidance reduces waste. Returned products need to be repackaged, which increases packaging material waste (Invisible Commerce, 2023; Li et al., 2021). Additionally, many products may be destroyed when returned. These products consume a lot of raw materials, energy, time, and money in the manufacturing process. Once these products are destroyed, it means a huge waste (Nikiema & Asiedu, 2022). By avoiding returns, e-retailers can reduce waste. Second, return avoidance measures can reduce environmental pollution to a certain extent. For example, online returns require logistics to transport returned products, a process that generates a lot of pollution (UN Environment Programme, 2017) and consumes energy (Chang et al., 2021). If e-retailers are able to reduce the number of returns through return avoidance measures, they can reduce energy consumption and thus reduce the negative impact on the environment.

3.2 Current Return Avoidance Methods

The purpose of returns avoidance is to prevent (or minimize) online returns before the product enters the reverse flow and product processing (Lambert, 2008). This has greater value and advantages than dealing with returns after they occur. Online returns will decrease as the factors that lead to returns are eliminated in advance (Castek et al., 2022; Hjort & Ericsson, 2010). Return avoidance thus help e-retailers save a lot of time, money and effort. Otherwise, e-retailers need to pay a higher price to eliminate the negative impact of returns after they occur. Therefore, how to implement effective return avoidance measures in online shopping has always been an important issue that managers pay attention to. To this end, previous literature has explored specific measures on how to avoid returns. For example, to control online returns, some e-retailers impose restocking fees or introduce restrictive return policies (Difrancesco & Huchzermeier, 2020). Other studies indicated that e-retailers should provide customers with sufficient and appropriate product information to prevent (or at least reduce) product returns (Gelbrich et al., 2017; Stöcker et al., 2021). These studies enrich the returns avoidance toolbox and provide insights for e-retailers to reduce online returns.

In addition to the above research, previous research also proposed many other return avoidance measures. In fact, return avoidance can reduce the likelihood of a product being returned to an e-retailer by addressing the cause (or factors) of customer dissatisfaction and uncertainty during the shopping process. This thesis categorizes the measures proposed in the previous literature according to the consumer's shopping journey (i.e., pre-purchase, during the purchase, and post-purchase). Consumers have different characteristics and behavior patterns in the pre-purchase, purchase, and post-purchase stages. E-retailers can reduce online returns by having different returns avoidance methods at different stages of the purchase. This helps to better understand return avoidance.

3.2.1 Return Avoidance in Customer’s Pre-purchase Stage

Return avoidance measures in the pre-purchase stage are measures taken by e-retailers to reduce online returns before customers make a purchase decision. In the pre-purchase stage, consumers realize that they have a need to be satisfied. They may actively search for product information from online resources with personalized shopping motivations or needs. For example, consumers may comprehensively

consider factors such as price, origin, shape, size, color, function of products before making a purchase decision. This information will play an important role in consumers' shopping decisions. If the quantity and quality of information cannot meet the decision-making needs, consumers are likely to make unsatisfactory or even wrong shopping decisions, which will eventually lead to returns.

(1) Information disclosure. E-retailers strives to provide online customers with sufficient and appropriate information to prevent (or at least reduce) product returns (Gelbrich et al., 2017; Stöcker et al., 2021; Vasić et al., 2019). Information disclosure means that sellers provide customers with timely, accurate, clear, and comprehensive product information, so as to help customers make better purchasing decisions. Information disclosure can be used as a return avoidance measure because it reduces the likelihood that customers will return a product after they purchase it and find that it does not meet their expectations or needs (Hjort, 2010). For example, a large number of online returns are caused by product fit in the fashion industry. While this cannot be completely avoided in remote trading, it is still possible to minimize the uncertainty of product fit. Previous literature pointed out that the uncertainty of product fit is considered to be mainly affected by information asymmetry and product familiarity (Hong & Pavlou, 2014). Information disclosure may reduce information asymmetry and increase customer familiarity with products. Previous literature also suggested that customers who receive more product information are likely to experience higher satisfaction, which means fewer product returns (De et al., 2013; Sahoo et al., 2018; Schulz et al., 2019). Methods to expand information disclosure include providing timely, accurate, clear, and comprehensive product information, such as prices, materials, production process, technical specifications, functions, quality certification, warranty policies, etc. In addition, providing product-related pictures, videos, demonstrations, as well as customer-related consultations, suggestions, or feedbacks, all help customers better understand the product. For example, Home Depot allows customers to ask questions directly about a product and displays those questions on the product page, ensuring customers can find any information that isn’t already on the page. This is an example of an e-retailer using disclosure as a return avoidance measure.

(2) Restrictive return policy. Restrictive return policy is effective in fighting opportunism of online returns (Davis et al., 1998; Hess et al., 1996; Ülkü & Gürler, 2018). The restrictive return policy means that the e-retailer imposes certain

restrictions or conditions on customer's return, so as to reduce the customer's motivation or behavior to return the product (Bahn & Boyd, 2014). A restrictive return policy can be used as a return avoidance measure because it may increase customers' costs (e.g., time, money, and efforts, etc.), thereby reducing customers' willingness to return. Restrictions set by e-retailers can come from many aspects, such as return conditions, return fees, return deadlines, and refund method, etc. Some of these restrictive return measures are considered punitive measures. For example, deducting a certain percentage of the refund amount. Such return fees become penalties imposed by e-retailers on consumers who initiate online returns (Shulman et al., 2009). When consumers believe that return cost is too high, consumers may choose to keep less-than-ideal products. The most restrictive return policy could be to close the user's account and prosecute the fraudster through legal channels. For example, Amazon has a tough policy against return fraudsters, which involves closing the Amazon accounts of those identified as return fraudsters. In summary, online returns can be reduced by indicating a restrictive return policy to customers before they place an order.

(3) Improve product quality. There are many types of product quality issues that lead to returns. For example, product defects, missing parts, or decay. Research showed that product quality is closely related to returns (Li et al., 2013a). Product quality could be a key factor that may decrease customer satisfaction and lead customers to return a product (Lin et al., 2020). Poor product quality can also result in products being damaged in shipping process, which can lead to returns. Returns can be reduced if manufacturers and e-retailers can ensure product quality are at their best before they are sold and shipped (Rogers et al., 2012). Improving product quality means manufacturers need to take steps during product design, manufacturing, inspection and packaging to reduce product defects, damage and inconsistencies. This can be used as a return avoidance measure as it reduces the likelihood of online customers returning products due to receiving substandard products. Ways to improve product quality include improving technology, updating equipment, optimizing raw materials, and establishing a strict, standardized, and scientific quality management system. All of this helps improve product reliability and ultimately reduces customer returns due to product quality issues. In short, by improving product quality and performance, customer returns due to quality issues can be reduced (Hjort, 2010; Li et al., 2013a; Rogers et al., 2002).

3.2.2 Return Avoidance During Customer's Purchase Stage

In the purchase stage, consumers decide to place an order to purchase products after searching, comparing and evaluating. At this stage, consumers are more concerned about the online shopping experience, including whether the purchase process is smooth, whether online customer service is effective, and whether mobile payment is safe, etc. During the purchase stage, e-retailers can still reduce online returns by reducing the factors that lead to customer dissatisfaction or uncertainty. For example, some e-retailers are using digital technologies to reduce customer returns. Digital technology can enhance the visual appeal and authenticity of products on online platforms, which can help customers better understand how products look and feel in real life.

(1) Introduce advanced technologies such as big data, cloud computing, artificial intelligence, and augmented reality, etc. Advanced technology is being massively introduced into e-commerce or online shopping. Technology usage can reduce the transaction costs of returns and increase the effectiveness of returns management processes (Serkan Akturk et al., 2018). Technology can help e-retailers provide customers with more information, more choice, and more convenience when it comes to online shopping and returns. For example, virtual fitting technology can reduce product returns in online purchases (Shang et al., 2017). Modiface uses artificial intelligence to provide virtual fitting room technology for Sephora to increase the probability of purchase and reduce the probability of returns (Gallino & Moreno, 2018). Augmented reality allows customers to see what a product will look like in their own environment or on their own bodies. Artificial intelligence allows customers to get personalized recommendations based on their preferences or previous purchases. Chatbots allow customers to get instant answers to their questions or concerns. All of these digital technologies can help customers reduce uncertainty in the shopping process, thereby reducing returns. Additionally, there are two technology-enabled measures designed to reduce the return abuse: customer profiling and product tracking (Akturk et al., 2021). A customer profiling system identifies opportunistic customers by using their personal identification and transaction history. In contrast, a product tracking system identifies fraudulent returns by recording each transaction of a product through the use of unique identifiers. In addition, the

development of big data and artificial intelligence technology has promoted precision marketing (Ucuzoglu & Hagel III, 2020). This helps e-retailers use data mining techniques to segment and profile customers, thereby providing products that better meet customer needs, preferences and budgets, and ultimately reduce returns. All of these technologies could contribute reduce online returns.

(2) Try-before-you-buy policy. More and more customers tend to experience the product before paying in online shopping (Messer, 2021). To ingratiate this consumer trend, e-retailers have introduced a policy known as try-before-you-buy policy (Damen, 2023). This policy allows online shoppers to select products on the shopping site and then choose to "pay later" at checkout (Messer, 2021). When an e-retailer receives an order from a customer, the e-retailer will first send the product to the customer. After receiving the products, customers need to log into the shopping site and pay for the products they want to keep. Conversely, if customers don't want to keep the product, they can choose to return the product. By a try-before-you-buy policy, consumers can gain more hands-on experience with product quality, functionality, and suitability before purchasing. This can reduce uncertainty at the time of purchase and increase consumer satisfaction with the product. Warby Parker is probably the best-known company to use the try-before-you-buy model (Messer, 2021). For example, Warby Parker has launched a "try-in at home" program. The program allows online shoppers to test five eyeglass frame for free within five days. Jackson & Xu (2022) believed that product scarcity could enhances consumers' willingness to accept products in the "try-before-you-buy" model. And their findings also encourage e-retailers to increase customer’s acceptance intention by advertising their scarcity (including product scarcity and price scarcity), rather than creating barriers for consumers to avoid returns (Jackson & Xu, 2022). However, with the development of technology, "try-before-you-buy" does not necessarily mean that the product must be delivered to the customer first. For example, augmented reality could be used to provide a virtual "try-before-you-buy" experience. Smink et al. (2019) indicated that augmented reality technology enables consumers to try products on their face or surroundings in real time, which helps to provide consumers with a "try-before-you-buy" experience when shopping online. Their results showed that augmented reality technology enhanced perceived informativeness and enjoyment of the shopping experience compared to non-AR product demonstrations (Smink et al.,

2019). Their research provides an impetus for e-retailers to offer virtual try-before-buy experiences.

(3) By helping customers better match the products they buy online, e-retailers help customers make better purchasing decisions and avoid product returns (Saad El Deen, 2023). No one will be familiar with all the products in this world. For many product categories, the customer's product knowledge is likely to be insufficient. Getting shopping advice from professionals may be an effective way to avoid lack of product knowledge. Product knowledge refers to the extent to which consumers know and understand a product, which can be measured by purchases, usage, and the amount of information stored in memory (Lin & Chen, 2006). Previous research believed that incomplete product knowledge is one of the reasons customers have psychological discord after purchase, and this will cause customers to initiate returns (Lee, 2015). It can be seen that the customer's product knowledge plays an important role in the purchase decision. So, providing professional advice to online customers can also be an important measure to avoid returns. This is because professional advice from e-retailers reduces the mismatch between customers and products. Taking the fashion industry as an example, efforts related to reducing returns are being able to keep up with fashion trends and recommend the best options to customers (Russo & Cardinali, 2012). For online retailers, it is important to have good product knowledge in order to effectively communicate the value of a product to potential customers. This not only helps to increase sales but also helps reduce returns.

(4) Online transaction ethics. Research indicated that e-retailers' online transaction ethics help them gain customer trust and commitment, as well as directly reduce fraudulent returns (Chang & Guo, 2021b). Online transaction ethics refers to the ethical norms that e-retailers should abide by in the process of online shopping and online transactions. There are four dimensions, namely, privacy, security, non-deception, and fulfillment, that can be used as criteria by which customers measure the ethics of an online retailer's transaction (Roman, 2007). Customers will trust online retailers when they perceive that the service provided by the retailer meets these dimensions (Chang & Lu, 2019; Elbeltagi & Agag, 2016). Conversely, if an e-retailer violates these ethical requirements, online shoppers cannot trust the e-retailer. For example, e-retailers may tend to use exaggerated product descriptions in order to increase product attractiveness and boost sales. When consumers discover that a product is not what the e-retailer claims, they may mistrust the e-retailer and initiate a

return. Therefore, e-retailers can improve in these ethical dimensions, and take gaining customers' trust as a return avoidance measure. For example, e-retailers should commit to protecting and truly caring about the data privacy of online customers. If e-retailers illegally access or abuse customers' online behavior data, this could lead to loss of customer trust and more online fraudulent returns.

3.2.3 Return Avoidance in Customer's Post-purchase Stage

In the post-purchase stage, consumers evaluate whether the product performs as expected. General speaking, consumers are likely to be satisfied and less likely to return a product if they believe that product performance exceeded their pre-purchase expectations. However, cognitive dissonance can arise when consumers discover that the product after purchase does not match their expectations. Individuals experience negative emotions following cognitive dissonance, and individuals tend to mitigate these emotional responses by reducing dissonance in some way (Cancino-Montecinos et al., 2020). This means that cognitive dissonance may drive consumers to take actions, such as returning items, to alleviate feelings of inconsistency and restore psychological balance. So, in the post-purchase stage, e-retailers can still take some measures to encourage customers to keep the product and reduce online returns. Numerous studies have explored return avoidance measures that can be used in the post-purchase stage.

(1) Gatekeeping. E-retailers tent to set various conditions, restrictions or approval procedures in the return process to control consumers' return. This is called "gatekeeping". Gatekeeping is the e-retailer's screening of online shoppers' return requests and returned items (Hjort, 2010). This means that retailers need to make decisions to control the volume of returned products going into reverse logistics (Rogers et al., 2012). The content of gatekeeping activities may include checking whether the reason for the return is legitimate, whether the original packaging is intact, whether the return deadline is exceeded, etc. On the one hand, gatekeeping eliminates the costs associated with returning products that should not be returned (Rogers et al., 2012). By setting conditions or restrictions, e-retailers can filter out opportunistic or fraudulent returners who abuse return policies. On the other hand, return gatekeeping may cause dissatisfaction and resistance from consumers (Rogers et al., 2012). For example, an e-retailer may require customers to provide original proof of purchase.

And the customer may discard the shopping proof the moment they get the product (in fact, this is very common). These requirements can frustrate customers. Although there are pros and cons, gatekeeping is still a commonly used measure in avoiding returns. Successful gatekeeping allows e-retailers to control and reduce return rates at the most cost-effective frontier (Rogers et al., 2012). Because, the entry point into reverse logistics is the optimal point to eliminate unnecessary costs by screening unauthorized returned products (Rogers et al., 2012). Gatekeeping activities are essential for online shopping (Hjort, 2010), e-retailers could benefit from gatekeeping to control online returns.

(2) Online reviews and feedback. One of effective ways to help reduce returns is to encourage customers who have made a purchase to leave their own reviews on the products they purchased (Halzack, 2021). Online reviews are an effective mechanism that online retailers can use to ensure customers get the right choice (Lindsey, 2016). A survey indicated that two-thirds of shoppers believed that if they were able to check online reviews, images, and videos submitted by other consumers, they would be less likely to return the items (Power Reviews, 2021). According to Sahoo et al. (2018), online product reviews can affect the likelihood of a product return by reducing product uncertainty. They found that the availability of more reviews and more “helpful” reviews resulted in fewer product returns. Another study also confirmed that online product reviews reduce product return rates because customers can better evaluate products from online reviews (Walsh & Möhring, 2017). For example, customers will describe the pros and cons of an item and discuss whether the product description is accurate. These reviews generated by customers can reduce the uncertainty of customers when shopping. However, it has also been shown that overly positive online product reviews can sometimes create a gap between customers' perceived expectations of product quality and the actual product. This could lead to dissatisfied customers, which increases online returns (Minnema et al., 2016). Overall, online reviews can be used by e-retailers to avoid returns when used wisely.

(3) Improve after-sales service. Online returns are not only about service restoration, but also a business opportunity (Chambers, 2021). Excellent after-sales service can increase customer satisfaction and reduce returns (Hjort, 2010; Lindsey, 2016). First, customers may choose to return products because they cannot assemble or use the product. Thus, e-retailers can provide remote guidance to online shoppers

as they handle complex products such as computers or printers (Rogers et al., 2002, 2012). With live chat and support, customers may try to resolve issues before the returns process starts. Second, if the product has quality problems or damaged, providing repair services can prevent the customer from initiating a return. Returns are not an end in themselves for consumers. The purpose of consumers is to meet their own needs or solve problems. The more common one is providing repair services, usually for complex or expensive products. Third, returns don't have to be the only option. E-retailers can offer more options to satisfy customers. When returns are unavoidable, e-retailers can still guide customers and negotiate the best outcome for both parties (Castek et al., 2022). For example, e-retailers can encourage customers to complete transactions through the exchange process rather than refunds.

(4) Optimize logistics services. Logistics service plays an important role in online returns. Returns due to damage in shipping have been discussed in the previous sections. To reduce logistics-related returns, e-retailers implement a number of logistics-related measures. First, once a product leaves a warehouse or fulfillment centre, the product is out of the seller's control. However, sellers can prevent unforeseen issues by ensuring better packaging. If the packaging is not done properly, the product may cause damage during delivery, which can lead to dissatisfied customers (Fu et al., 2016). The solution is to choose a more appropriate packaging method. For example, choose sturdy boxes and make sure the product is packed securely in the box. Second, customers often want to receive their online purchases as quickly as possible, so shipping speed is important. Especially for time-sensitive products (for example, holiday gifts and fresh food, etc.), the speed of shipping will be more important to customers. Research indicated that if there is an inconsistency between an e-retailer's promise to deliver an order in a timely manner and actual delivery, there is a high likelihood of product returns (Rao et al., 2014). Third, customers often need to predict the arrival time of products in advance in order to be ready to receive them (or some urgently needed products, such as pharmaceuticals). If a customer needs a product and the product doesn't arrive in time, the product will most likely be returned. Because by the time the product arrives, the customer no longer needs it (Cannon, 2023). If the seller clearly marks the delivery time on the product page, it will help the customer to judge whether the order can be placed. Amazon is very good at reducing returns by improving logistics services. Amazon will not only tell online shoppers when they will receive their items, but also how

much time they have left to place their order. This helps online shoppers estimate the delivery time. Fourth, research showed that delivering all the products in an order together (even if it means delayed delivery of some items) reduces the likelihood of returns (Amorim et al., 2023). The importance of shipping speed has been discussed before. But Amorim et al. (2023) showed that speed of delivery is not as important to customers as the convenience of receiving everything they order at once. E-retailers can take inspiration from these studies to reduce online returns.

(5) Brand reputation. Brand reputation refers to consumers' attitudes toward an e-retailer's brand as good and reliable (Hasan et al., 2009). Brand reputation is very important in market competition and business success. On the one hand, customers who are familiar with the brand show higher satisfaction and purchase intention (Kaya et al., 2019). On the other hand, a good brand reputation is an intangible asset that can build consumer trust. Not only that, research showed that brand reputation reduces return rates, and return motivation is the boundary condition for this relationship (Walsh et al., 2016). It can be seen that for customers with certain return motivations, reputation can be used as one of the tools to avoid returns. There are many ways to strengthen an e-retailer's brand reputation. For example, brand reputation can be enhanced through advertising, public relations, and high-quality products (Hasan et al., 2009). However, previous research also suggested that the strength of the relationship between reputation and product returns is influenced by purchase frequency, retailer type, and customer gender (Walsh et al., 2016). Therefore, e-retailers not only need to consider the return motivation, but also consider the influence of other factors. In conclusion, brand reputation is an important asset for e-retailers. It not only helps e-retailers establish a competitive advantage in the market, but also helps e-retailers reduce online returns.

(6) Internal or external collaboration. First, internal collaboration can reduce online returns. Product defects or quality problems are mostly due to the manufacturer's product design or quality management problems. To reduce returns due to product defects and product quality, departments within a manufacturer can collaborate to find the problem and improve the product. For example, Black and Decker used to integrate the returns process with product development to learn from returns how to develop better products, improve ease of use, and minimize future returns (Rogers et al., 2002). Second, external collaboration can reduce online returns. Product consistency is critical to avoiding returns (Rogers et al., 2002). From market

research, product design, manufacturing to sales, a product has to go through multiple participants (such as raw material suppliers, manufacturers, distributors, etc.). These actors are responsible for product consistency. By partnering with external participants, e-retailers can reduce online returns. For example, in the fashion industry, many online returns are due to size mismatches. If raw material suppliers, manufacturers, distributors and e-retailers have inconsistent understanding of product size, consumers may order the wrong size. To reduce the number of returns, e-retailers need to work with external participants to use size guidelines for all products in a consistent manner.

(7) E-retailers can reduce product returns by controlling the delivery time (Pandey & Sharma, 2019). In business practice, many online retailers try to please customers by delivering customer's purchase faster (Collier & Bienstock, 2006; Ibarra, 2014). However, this may not always be successful. Even if the e-retailer sends the product to the consumer as quickly as possible, the consumer may still choose to return the product. Previous studies have noticed this phenomenon and explored it. Pandey & Sharma (2019) showed that e-retailers can use the sunk time fallacy to reduce online returns. The sunk cost fallacy states that once money, time, or effort has been invested, people are more inclined to continue an endeavour (Arkes & Blumer, 1985). The time spent waiting for a product reduces its chances of returning it as consumers try to justify their time and effort (Lala & Chakraborty, 2015). Pandey & Sharma (2019) introduced strategies to control returns through delivery time for different product types. Their research categorized products into three categories, hot products, new products, and products with mixed customer reviews. The results of the study suggest that online returns can be reduced by shortening the delivery time, or delaying the delivery time (Pandey & Sharma, 2019).

3.2.4 Other Methods of Return Avoidance

In addition to the above methods, the literature also explores other different returns avoidance methods. These approaches may involve new research elements such as omni-channel selling, product life cycle, time cues, customer cognitive dissonance, etc. These return avoidance methods offer a unique perspective on reducing online returns. E-retailers can use these research findings to reduce online returns.

(1) Product life cycle and the number of substitutes can influence consumer return behavior. Literature indicated lenient return policies and ever-shrinking product lifecycles lead to rapid product obsolescence and a high volume of returns (Min et al., 2008). Research also showed that both product maturity and variety are negatively associated with return probability (Shang et al., 2019). First, where a product is in its life cycle is a factor that e-retailers need to consider when deciding on return avoidance measures. The product life cycle generally refers to the entire evolution process of a product from entering the market to exiting the market (Zhao et al., 2011). E-retailers need to evaluate all products to differentiate the life cycle of different products. And, e-retailers can sell more products with higher lifecycle maturity, which can reduce online returns (Shang et al., 2019). Second, the number of competing substitutes. As the variety of products increases, customers may conduct more detailed comparisons between products, thereby reducing the uncertainty of fit. Through the mechanism of uncertainty reduction, more varieties increase customer's confidence to make the best choice, thereby reducing the return probability (Shang et al., 2019). Therefore, e-retailers may also need to consider the number of competing substitutes for the products being sold. By controlling the number of substitutes for the products they sell, e-retailers can avoid returns. In conclusion, product life cycle and the number of substitutes can affect consumer return behavior. E-retailers can adapt their return avoidance measures based on the above research findings.

(3) Present time clues. Time cues play a crucial role in human communication by helping humans understand time in different frames and contexts (Delaney, 2022). Research illustrated that presenting time cues can be used to reduce product returns and this mainly happens by amplifying customers' perception of time pressure and alleviating their psychological discomfort (Lee & Yi, 2022). So, e-retailers can avoid online returns by presenting time cues. If managers can convert the implicit time cost into tangible cost by providing time clues, online customers will hesitate to return their purchases (Lee & Yi, 2022). This finding is significant because this study found a relationship between time cues and online shoppers' return intentions. E-retailers can effectively reduce online returns by adding time cues.

(4) Since consumers are likely to use returns as a means to reduce cognitive dissonance, e-retailers can reduce returns by proactively reducing consumers' cognitive dissonance (Powers & Jack, 2015). Cognitive dissonance is a situation in which consumers have conflicting attitudes, beliefs, or behaviours (Wang, 2022).

Generally speaking, cognitive dissonance is the result of comparing purchased products with alternatives immediately after purchase (Powers & Jack, 2015). If consumers rate the results of such comparisons poorly, it can lead to consumers feeling emotionally uncomfortable (Elliot & Devine, 1994). Other studies hold the same view that cognitive dissonance results in a feeling of mental discomfort and changes in attitudes, beliefs, or behaviours to reduce discomfort and restore balance (Mcleod, 2022; Wang, 2022). Cognitive dissonance mainly includes the emotional dissonance and product dissonance. Research found that both dimensions (i.e., emotional dissonance and product dissonance) are positively associated with product return frequency (Powers & Jack, 2015). Therefore, e-retailers need to gain insight into the cognitive dissonance of customers and take measures to reduce the cognitive dissonance of customers, so as to avoid returns.

3.3 Challenges of Current Return Avoidance Methods

As an e-retailer's strategy to deal with online returns, the role of return avoidance measures is crucial in online shopping. The previous chapters have elaborated on its importance. Among them, the most important function of return avoidance is to help e-retailers reduce online returns. Academics or managers have explored many measures related to return avoidance. However, implementing measures to avoid returns is not without its challenges. E-retailers need to deal with complex factors and difficulties such as cost, technology, law, customer psychology, and so on.

3.3.1 Cost Challenges

One of the challenges comes from cost. For e-retailers, processing online returns is costly, and avoiding online returns can be costly as well. To reduce online returns, some common costs include money, time, effort, etc. The size or structure of these costs may be related to the extent to which e-retailers wish to reduce returns. E-retailers need to choose the most appropriate return avoidance measures according to their own strategies, resources, and capabilities.

Return avoidance involves designing an excellent shopping experience to help consumers make the right shopping decision (Castek et al., 2022). However, an excellent shopping experience often requires a lot of cost. First, monetary cost. One of the keys to successful returns avoidance is digital technologies to optimize the returns

process (Castek et al., 2022). Therefore, monetary costs are mainly reflected in technology introduction. In order to implement more effective return management, e-retailers need to introduce or improve return-related systems, such as inventory management systems, return tracking systems, customer management systems, etc. For example, previous research suggested two techniques that could reduce the abuse of return policies, namely customer profiling system and product tracking system (Akturk et al., 2021). These systems can be used to reduce returns, but are also expensive for e-retailers. Also, e-retailers may need to hire additional professionals to manage the systems and train other employees on how to use the technology. Because another key to successful return avoidance is proficiency in applying return avoidance tools (Castek et al., 2022). Second, time cost. In order to reduce online returns, e-retailers may need to spend time participating in product improvement activities, such as raw material evaluation, product testing, design modification, etc. E-retailers may also need optimize supply chain processes to reduce online returns, which takes a lot of time. Because supply chain optimization activities often require communication with suppliers in many aspects. As another example, literature stated that returns can be reduced by providing customers with more instructions on how to use the product (Rogers et al., 2002). This can require a lot of communication between employees and customers, which is also time-consuming. Third, effort cost. Effort cost is the amount of effort required to successfully complete a specific task. In addition to money costs and time costs, e-retailers often need to pay extra effort costs. Because the implementation of each return avoidance measure requires corresponding efforts from e-retailers. For example, in order to adapt to new return avoidance strategies, e-retailers need to adjust their business processes, which may require more effort costs.

3.3.2 Technical Challenges

Although returns are a nightmare for online retail, technologies such as big data, cloud computing, and artificial intelligence provide e-retailers with the possibility to reduce online returns. These technologies can help reduce returns by improving the effectiveness of returns management. For example, technology can help e-retailers determine the reasons for returns (Amorim et al., 2023). For these return reasons, e-retailers can better reduce returns. However, there are many challenges in applying these techniques to return avoidance.

First, data collection. To avoid online returns, e-retailers may need to collect large amounts of data to determine which products, customers or channels are most likely to generate returns (especially illegal ones). For example, e-retailers can identify fraud returns in real time by combining transaction data, historical behavioral data (such as purchase history, web logs, social feeds, etc.), geospatial location data (from customer's smartphone apps), and more (Akter & Wamba, 2016). However, how to collect the data is one of the technical challenges. Privacy calculus theory suggests that an individual's intention to disclose private information is based on behavioral calculations and weighs the expected risks and expected benefits of disclosing private information (Al-Jabri et al., 2019; Culnan & Armstrong, 1999; Dinev & Hart, 2006). Consumers may be uncomfortable with disclosing personal information because they may be concerned about privacy breaches or data misuse (Al-Jabri et al., 2019; Lowry et al., 2012). In addition, ensuring the quality and accuracy of collected consumer behavior data is also one of the difficulties, because consumers may not provide complete information, or provide wrong information. This affects the quality of the data. Second, data processing. After collecting online behavior data, e-retailers may need to process the data to filter out valid and reliable data. So, this may involve data cleaning, data transformation, data normalization, and data integration (Tariq et al., 2021). Working with customer data is not an easy task and often requires specialized tools and methodologies. In order to better process and analyze return data, e-commerce retailers need to have certain data analysis capabilities and information system support. For example, big data processing is very complex, it may involve real-time processing, interactive processing, streaming processing, batch processing, and hybrid processing (Al-Barznji, 2022). In short, this may include data storage, data analysis, data mining, artificial intelligence, and machine learning techniques, etc. to efficiently process and analyze customer data. For many e-retailers, this can be a serious challenge.

3.3.3 Satisfaction Challenges

Customer satisfaction is one of the challenges of avoiding returns, as customers can be dissatisfied when faced with return avoidance measures. Dissatisfaction is considered the feeling of disappointment or unhappiness that arises when one's expectations or needs are not met (Oliver, 1980; Westbrook & Reilly, 1983). Previous

literature indicated that consumer satisfaction/dissatisfaction is a measure for evaluating the performance of an economic system (Fornell & Didow, 1980; Mahapatra, 2014). As a result, e-retailers tend to place emphasis on (dis)satisfaction-related challenges.

There are many reasons for customer dissatisfaction toward return avoidance. One of the most common problems is that customers perceive an online retailer's returns avoidance measures as unfair. For example, excessive return fees, too strict return restrictions, too short return time windows, etc. may be considered unfair by customers. In terms of return policy, customers often want more flexibility or autonomy (Kohan, 2022). This inconsistency can lead to dissatisfied customers. Especially when a customer's legitimate return request (because the product is defective, does not fit, or is not as described) is denied, the customer feels neglected or treated unfairly. In addition to customer satisfaction, there are two challenges that are closely related to customer satisfaction: customer trust and repurchase intention. Return avoidance measures may be perceived by customers as risk aversion by e-retailers in terms of return policies. Research showed that risk-averse return policies adopted by e-tailers can lead to lower consumer trust (Askarifar et al., 2022). In addition, while restrictive return policies can reduce online returns, previous research has also shown that restrictive return policies reduce repeat purchase intentions through perceived fairness of return service and perceived quality of return service (Wang et al., 2019). In conclusion, customer satisfaction (customer trust, repurchase intention) can be a challenge in implementing returns avoidance.

3.3.4 Acceptance Challenges

Customer acceptance refers to responses to a range of customer experiences, including product or service, delivery, post-purchase problem resolution, etc. (Bettman & Park, 1980; Foxall, 2003). In the context of returns avoidance, customer acceptance refers to the acceptance and willingness of customers to a new return avoidance measure. This involves customer awareness, trust and acceptance of avoidance measures.

First, customer acceptance involves customers' overall perception of the effectiveness of products and/or services (Wirunphan & Ussahawanitchakit, 2016). Customers may be used to the existing shopping or returns process and be reluctant to

change their habits. In addition, customers may lack awareness of new avoidance measures, such as new technologies, new policies, and new methods. If customers are unclear or unaware of these new measures, misunderstanding, dissatisfaction or resistance may arise. For example, customers may not be familiar with the process of operating and using certain new technologies. This unfamiliarity can lead customers to become skeptical or resist new avoidance measures. Second, customers learn about products and services primarily through experience development (Bettman & Park, 1980; Foxall, 2003). Certain measures to reduce returns may result in additional inconvenience for customers. For example, asking customers to provide more information, asking customers to take photos or document problems, etc., these requests may add extra steps in the customer's shopping and return process. Furthermore, customer experience is a major determinant of consumer choices and preferences (Wirunphan & Ussahawanitchakit, 2016). If customers feel that an online retailer's return avoidance measures have affected the customer's shopping experience, they are likely to choose to find other sellers. In e-commerce, it is easy for customers to switch to competitors for shopping.

3.3.5 Strategic Challenges

In order to achieve business goals, most companies have their clear development plans, strict organizational structures, and standardized operating procedures, which involve corporate strategies. Strategy refers to a broad plan of action aimed at achieving predetermined goals (Okigbo, 2014). Business activities must be carried out under the guidance of corporate strategy. Return avoidance also needs to be based on this principle.

First, return avoidance is very complicated. Different industries, enterprises, and products may need to adopt different return avoidance measures, which need to be selected according to specific circumstances. For example, different e-retailers may have different backgrounds, needs and challenges when it comes to returns. Due to differences in industries, scales, product types, and sales models, certain return avoidance measures are not fully applicable to all situations. Therefore, e-retailers must choose and implement measures to avoid returns according to their own circumstances. Second, a company often has its own strategic goal, and all other strategies of the company serve or support this strategic goal. As part of the

management strategy, this means that return avoidance should also be aligned with the overall strategic goals of the business. As a well-known online footwear retailer, Zappos is known for its excellent customer service and return management strategy. Not only can customers return for free for a full refund, but they also have enough time to evaluate the product (with a generous return period of up to 365 days) and enjoy a return process that doesn't require cumbersome review. In addition, the relationship between return avoidance measures and other business is also one of the challenges that e-retailers need to consider. While the goal of returns avoidance measures is to reduce returns, the implementation of returns avoidance is closely related to other aspects of day-to-day operations. On the one hand, effective return avoidance may require the cooperation of multiple business departments. According to a research report by McKinsey & Company (McKinsey & Company, 2021), functions related to returns management include: operations, finance, planning, merchandising, analytics or IT, strategy, e-commerce, and marketing. This means that departments related to these functions need to work together to provide effective returns management; on the other hand, return avoidance may also affect other businesses. This requires that return avoidance must develop in coordination with other businesses at a strategic level. Therefore, strategic alignment needs to be considered when developing a return avoidance strategy.

Chapter IV Reducing Ecommerce Returns with Return Credits[1]

To address the challenges of online returns, I published two articles related to return avoidance in two JCR-ranked journals. The article "Reducing ecommerce returns with return credits" was published by Electronic Commerce Research. In Chapter Ⅳ, this article will be used. In order to maintain the cohesion of the thesis, some minor revisions have been made to this article. Information about the article can be found in the footnote below. I have been authorized by the co-authors and the publisher to include this article in this thesis.

[1] This chapter is from the article "Reducing ecommerce returns with return credits". Martínez-López, F. J., Li, Y., Feng, C., Liu, H., & López-López, D. (2022). Reducing ecommerce returns with return credits. Electronic Commerce Research, 1-23. https://doi.org/10.1007/s10660-022-09638-5

4.1 Introduction

The past few years have witnessed a rapid increase in ecommerce sales (Li & Choudhury, 2021). Global ecommerce sales amounted to USD 3.35 trillion in 2019, and dramatically increased to approximately USD 4.94 trillion in 2021 (Chevalier, 2022). This figure is expected to continue growing over next few years and reach about USD 7.39 trillion by 2025 (Chevalier, 2022). With the rise of ecommerce activities, the issue of returns is increasingly coming to the fore and attracting the attention of academicians (Ahsan & Rahman, 2021; Duong et al., 2022; Serravalle et al., 2022). Between 15 and 40% of products purchased online were returned to the sellers, compared to just 5-10% of in-store purchases (Djordjevic, 2021). In the US alone, the total monetary value of ecommerce returns amounted to USD 218 billion in 2021 (ApprissRetail, 2022). It was projected that USD 66.7 billion worth of products bought online during the 2021 holiday season would end up returned, a 13% increase from 2020 (CBRE, 2021).

Online returns can lead to many negative consequences. First, product returns are very costly to e-retailers (Duong et al., 2022; Fan et al., 2022; Jena & Meena, 2022). The costs of handling returns include but are not limited to repackaging costs, refurbishment costs, and the cost of reverse logistics (Jack et al., 2019). Among retailers, 44% declared that return-related operational costs were a pain point to them, because these costs negatively influence their profit margin (Serravalle et al., 2022). It was estimated that return-related costs accounted for 4.4% of total revenue, which significantly hampers firms with a low profit margin (Comstock, 2018). Second, high costs incurred by returns will damage a firm's profit (see Röllecke et al., 2018) and drive it to increase product prices, eventually making it lose its competitiveness (Chen & Chen, 2016). Third, organizing and managing e-tail product returns systems is a highly complex challenge that needs careful planning and resource support (Ahsan & Rahman, 2021). The large volume of ecommerce returns could make product return management more complex and difficult for e-retailers (Martínez-López et al., 2022). Fourth, online returns have a huge environmental impact (Chaleshtari et al., 2022). The unnecessary transportation and enormous packages involved in ecommerce returns cause more greenhouse gas emissions and global resource consumption, which damage the natural environment (Li et al., 202; Ivanova, 2020). As online returns lead to so many negative consequences, reducing their volume would help firms lower return-related costs, sustain their competitiveness, decrease the difficulty and

complexity of managing returns, and become more eco-friendly (Lysenko-Ryba et al., 2022).

A significant percentage of ecommerce returns are returned for consumer satisfaction-related reasons (Li & Choudhury, 2021). It is said that satisfaction-related return reasons (e.g., style, color, etc.) explain more than 50% of online returns; by contrast, returns related to defective products and untrue product description account for around 10% (Dopson, 2021). Ecommerce returns can occur because the product does not fit, the consumer does not like the product 100% despite a perfect fit, or simply the consumer changed their mind. These kinds of returns are satisfaction-related returns. Ferguson et al. (2006) referred to satisfaction-related returns as "products that are returned by consumers to retailers with no functional or cosmetic defect" (p. 376). As these returns account for a big percentage of ecommerce returns, restraining them could significantly reduce the total amount of ecommerce returns and thus effectively mitigate the negative consequences of ecommerce returns. Therefore, it is necessary to study how e-retailers can reduce satisfaction-related returns.

Janakiraman et al. (2016) argued that retailers could increase the restrictiveness (refund, time, scope, etc.) of return management practices (RMPs) to reduce returns. In terms of restrictiveness on refunds, previous literature focuses on partial refunds (see Abdulla et al., 2022; Flanagin et al., 2014; Lantz & Hjort, 2013; Pei et al., 2014; Shao et al., 2021; Shulman et al., 2011; Wood, 2001;) or no refund (Wan et al., 2020), which may not be suitable for online returns. Online consumers cannot touch products before purchase, despite tactile information being crucial for consumers to evaluate products and make a right purchase decision (Flavián et al., 2016). The online appearance of products on ecommerce sites is also affected by technical factors such as monitor display settings. Therefore, consumers may be dissatisfied with purchased products that looked good on ecommerce sites when received and tried. Therefore, e-retailers should tolerate some satisfaction-related returns caused by such characteristics of ecommerce. This article focuses on a return avoidance approach, using return credits, to deter satisfaction-related returns. It is a differentiated approach combining partial return policy and quota return policy (Tran et al., 2018). Return credits are a maximum (monetary) amount of purchases on which consumers can have free returns. Satisfaction-related returns within a return credit can be returned for free, while consumers who made such returns over a set limit would be charged a restocking fee or barred. Currently, the laws in China, the US, and the EU, the three

largest ecommerce markets in the world (Herpin, 2021; Webretailer. 2021), allow retailers to charge return fees for non-defective returns, although in some cases they need to meet the legal requirements to charge such fees (e.g., prominently display their return fee policy at the point of purchase or agree with consumers on return fees prior to purchase) (Difrancesco et al., 2018; Difrancesco & Huchzermeier, 2020; FindLaw, 2016). Therefore, e-retailers in these markets could legally use a return credit approach, which includes return charges for consumers. This credit may help reduce satisfaction-related returns. Retailers such as J.C. Penney, Best Buy and Sephora have adopted similar measures to discourage excessive returners (McGregor, 2018). These retailers monitor and access consumers' return activities to limit excessive returns. From the consumers' perspective, they can clearly know the limit on the amount of returns for e-retailers that use return credits, but they cannot know the limit on the amount of returns for these retailers. Amazon suspended a lot of accounts when users make returns and request refunds excessively (Do, 2020). However, although the use of return credit is plausible in terms of its match-up with the ecommerce context, to the best of our knowledge, this novel approach in designing return punishment has not been documented to date. It is still unclear that whether and how e-retailers can use return credits to deter returns.

The side effects of return credits are also yet to be explored. Unrestricted free returns are important for online consumers (Kaplan, 2018). Eighty percent of consumers expect free returns (Yuan, 2018). Restrictive RMPs may not fit consumers' requirements for online shopping. In addition, undisputedly, consumer satisfaction and future repurchase are crucial to improving return management (Mollenkopf et al., 2007; Röllecke et al., 2018). E-retailers need to take into account the impact of return-avoidance measures on consumer satisfaction and repurchase intention when they consider using such measures (Daugherty et al., 2018; Lin et al., 2018; Röllecke et al., 2018; Stöcker et al., 2021; Tyagi & Dhingra, 2021). In addition, with the increase in the acquisition cost of online consumers (eMarketer, 2017; Olenski, 2017), it is much more crucial to retain them (Jaiswal et al., 2019). E-retailers that plan to use return credits need to be aware of competitors that employ free returns, such as JD.com and Alibaba. Any penalization involved in return credit could drive consumers to switch to competitors. Therefore, in this article, we study the positive outcome (returns reduction) and negative outcomes (lower fit perception, lower satisfaction, fewer

repurchases, and consumer turnover) for e-retailers that introduce different amounts of return credit.

This study is meaningful for both return management research and practice. On one hand, the prior literature on returns reduction investigated the use of an absolute punitive-oriented mechanism by which e-retailers charge a fee for every return to penalize consumers, in order to reduce product returns (Lantz & Hjort, 2013; Mandal et al., 2021; Shulman et al., 2010; Wood, 2001). Our study focused on the use of return credits, a milder punitive-oriented mechanism by which e-retailers offer free returns within a return credit limit and only charge fees for returns over the limit, in order to reduce product returns. The punitive-oriented mechanism in our study is different from that in the prior product returns management literature and has not yet been investigated. Therefore, by investigating the use of different amounts of return credit to reduce returns, our study may add new knowledge to the literature. On the other hand, in addition to reducing returns, the prior literature reported other outcomes of restrictive RMPs. Previous studies on the positive outcomes of restrictive RMPs focused on restocking fees and found that such fees can recoup the cost of handling returns for e-retailers (Shulman et al., 2010) and increase the average value of orders and purchased items (Lantz & Hjort, 2013). Researchers also pointed out that restrictive RMPs may cause side effects such as fewer sales (Abdulla et al., 2022; Röllecke et al., 2018) and consumer turnover (Pei et al., 2014). Although the prior literature examined these positive and negative outcomes of restrictive RMPs, more research is still needed on how different levels of restrictiveness are associated with consumers' important responses. By studying the effects of different amounts of return credit on consumers' fit perception, satisfaction, and repurchase intention, this research could enrich the understanding of restrictive RMPs. On the managerial side, this article may benefit e-retailers. Ecommerce returns can raise costs related to return processing (Duong et al., 2022; Fan et al., 2022; Jena & Meena, 2022), erode e-retailers' competitiveness (Chen & Chen, 2016), and increase the difficulty and complexity of managing returns (Ahsan & Rahman, 2021). In order to mitigate these negative consequences, e-retailers need to implement return avoidance methods to reduce returns. Based on our research findings, e-retailers understand the effectiveness of using different amounts of return credit to reduce satisfaction-related returns, as well as their side effects. Our research can help e-retailers to decide whether and how they could invest in and employ return credit to reduce returns.

This article is organized as follows: first, we introduce the theoretical background on which this article focuses. Second, we discuss the variables of this research and introduce its hypotheses. Then, the methodological issues are described, and the results presented. To conclude, we discuss important theoretical and practical implications.

4.2 Background

4.2.1 Satisfaction-related Online Returns

Recent literature has configured its research context around satisfaction-related returns. Gelbrich et al. (2017) set a context in which consumers may not always like a clothing product 100% just because it fits perfectly. Likewise, Lee and Yi (2017) based their research on a context in which product quality is satisfactory but consumers feel dissatisfied with the products received.

Unlike in a traditional brick-and-mortar store, in the ecommerce context, consumers cannot personally inspect products before making a purchase (Heuer et al., 2015). In the ecommerce context, when consumers receive products, they may find that the products do not meet their pre-delivery expectations, resulting in dissatisfaction with the products (Heuer et al., 2015). These unsatisfactory purchases are due to the inability to personally access products rather than consumers' mistakes. Therefore, consumers might consider it more unreasonable to take full responsibility for satisfaction-related returns in the ecommerce context than in a traditional brick-and-mortar store. Prior research shows that the attribution of responsibility should be considered when designing a punishment mechanism (Weiner et al., 1997).

It is reasonable for consumers to avoid satisfaction-related online returns. First, consumers purchase items to satisfy needs. Having returned a previous purchase, they then need to spend time and money seeking out another one to satisfy their unsatisfied needs. All their efforts expended in buying a previous purchase become sunk costs (Rong-Da Liang et al., 2014). Second, a new cycle of seeking out another product does not ensure that they will find and purchase one that is superior to the previous one returned. For time- and money-sensitive consumers, the imperfect but acceptable product may be the best option. Last, thanks to the endowment effect, people tend to endow their purchased item with greater value once they have got their hands on it (Lee & Yi, 2017); consumers will be reluctant to return items once they have purchased and received the items (Wang, 2009). These three points explain why it is

reasonable for consumers to avoid satisfaction-related returns, and consolidate the base on which e-retailers aim to reduce satisfaction-related returns.

4.2.2 Return Credit

Return credits refer to the maximum (monetary) amount of purchases for which consumers are eligible to return purchases free of charge within a certain period. When a consumer uses up her return credits, she will be barred or charged restocking fees for future returns. In order to avoid consumers who abuse the free returns system, several retailers set a maximum returnable monetary value for consumers within a period of time (Shang et al., 2017). This paper explores using return credits to avoid online consumers' satisfaction-related returns and observes their side effects; it specifically focuses on a mechanism in which online consumers are eligible for free returns but would be charged a restocking fee when their return credit is insufficient. Tran et al. (2018) defined this practice as a combination of quota return policy (merchandise can be returned within a certain quota with no charge) and partial refund policy (by deducting a restocking fee from refunds): a limited amount of returns can be returned free of charge and the remainder returned with a restocking fee. Return credits constitute a punishment mechanism to limit consumers' excessive returns. Consumers who make excessive returns to e-retailers that use return credits will be punished with restocking fees. Prior research has noted that fear is a negative emotional response to the threat of punishment (Levin et al., 2007). Fear of punishment could make consumers change their behavior in order to avoid being punished (Weiner et al., 1997). Therefore, the concept of return credits may create fear in consumers when considering making returns, which may encourage them to return products less often.

Although charging restocking fees may jeopardize sales, Shulman et al. (2010) suggested that restocking fees can help companies recoup the value deduction of returned merchandise and the cost of handling returns; these authors found that some retailers can reasonably charge restocking fees because manufacturers only partially refund them for their returns. Previously, EU countries enacted legislation stipulating that sellers cannot charge restocking fees, but when new legislation allowed retailers to do so, the percentage of e-retailers adopting free returns decreased considerably (Difrancesco et al., 2018). Companies which do not charge fees to recoup the costs of handling returns may pass on these costs to consumers via higher prices (Shulman et

al., 2011), which, as a consequence, may also harm sales. Research shows that a partial refund policy could be a more profitable strategy than a full refund or no refund policy (Shulman et al., 2011). Su (2009) argued that full refunds offer "too much protection" to consumers, passing the cost of excess stock and return management entirely on to retailers; therefore, retailers are incentivized to use restocking fees to avoid returns. In practice, Apple, Best Buy, and American Blinds charge restocking fees for returns (Shulman et al., 2011).

4.3 Hypotheses

This article studies how different levels of return credit affect consumers and engender a set of attitudinal and behavioral outcomes (see Figure 1). When the amount is low, consumers are more likely to be charged with restocking fees for returns than when the amount is high. Therefore, the credit amount is associated with the likelihood of being punished. Return penalties are expected to generate a strong deterrent effect when the amount is low. Based on our research objective, consumers' return-avoidance behaviors are not only crucial for our study, but also highlighted by recent literature (see Daugherty et al., 2018; Hausmann et al., 2014; Lin et al., 2020; Röllecke et al., 2018; Shang et al., 2019; Stöcker et al., 2021). This article emphasizes a return-avoidance-related variable: intention to keep a specified product. This construct implicitly indicated the research context in which consumers have bought a particular product.

But it would be short-sighted to exclude other valuable variables. Punishment associated with the use of return credits could cause side effects, such as lower perceived fit between the buyer's requirement on returning products and the e-retailer's return management practice, lower satisfaction with how the e-retailer copes with product return, weaker intention to repurchase products on the site, and stronger intention to switch from the current ecommerce site to other ecommerce sites. The company that exerts such punishment "becomes associated with the punishment and eventually takes on an aversive quality also" (Jablonsky & DeVries, 1972). Prior return-avoidance studies also pointed out the negative effects of return-reduction measures (e.g., Gelbrich et al., 2017; Wood, 2001). Therefore, it is necessary to observe whether a high amount of credits can exert weaker side effects than its low-amount counterpart.

4.3.1 Perceived Fit

Improving RMPs cannot be done without considering consumers' needs and requirements on making returns. Perceived fit is a pivotal construct reflecting to what extent a return-avoidance measure is logical and appropriate (Boisver & Ashill, 2018) in terms of returns that online consumers may make for unsatisfying online purchases. Ecommerce is a form of remote shopping by which consumers cannot access or use products immediately (Liao & Keng, 2013). The online presence of products also relies on the technical affordances of electronic devices and human-computer interactivity, all of which adds to the uncertainty of online shopping (Suh & Han, 2003). As the credit amount can indicate the extent to which a consumer can make returns with no charge, and is thus associated with purchase risk caused by uncertainty (Flanagin et al., 2014), this amount can considerably influence consumers' fit perceptions. If a higher credit amount were offered by an e-retailer, consumers would perceive better fit between their requirements on making returns and the company's RMP, because they would have more leeway to make returns (Abbey et al., 2018).

Hypothesis 1. *A high (vs. low) return credit amount fits better (vs. worse) consumers' requirements on returning online purchases.*

4.3.2 Consumer Satisfaction

Consumer satisfaction in this context can be understood as a consumer's contentment with the return processes offered by an e-retailer (Chang et al., 2009). Prior literature stressed an approach in which firms created a vintage return experience to increase consumer satisfaction with return processes (Ertekin, 2018; Mollenkopf et al., 2007). Röllecke et al. (2018) revealed that companies should be aware that harsh RMPs may expose consumers to their side effects, resulting in satisfaction reduction. In reality, e-retailers' return management rules and procedures play a more important role in determining consumer satisfaction than technical (Mollenkopf et al., 2007) and experiential factors (Ertekin, 2018). This is because such rules delineate how an e-retailer interacts with consumers in handling returns. If consumers chafe at such rules, satisfaction-enhancing efforts (e.g., quick refunds, return-centre employees' kindness) in return procedures could be in vain. As the use of a credit amount imposes restrictiveness on satisfaction-related returns, consumers could be dissatisfied with

such a constraint. The credit amount should be positively related to the degree of satisfaction because a higher amount gives more leeway for consumers to make returns (Abbey et al., 2018).

Hypothesis 2. *A high (vs. low) return credit amount makes consumers feel more satisfied (vs. less satisfied) with how the e-retailer copes with returns.*

4.3.3 Keep Intention

Intention to keep a product indicates the extent to which consumers are willing to keep a specified, non-defective product (Gelbrich et al., 2017). Prior research shows that restrictive RMPs can increase buyers' keep intention. Wood (2001) compared full refund policy and partial refund policy in a remote purchase environment and found that partial refund policy resulted in lower return rates. Contrarily, a more lenient return policy can result in more returns (Lantz & Hjort, 2013). The effect of credit amount on keep intention can be explained by punishment theory. This theory implies that individuals will adapt and modify their behavior when faced with potential punishment (Arvey & Ivancevich, 1980). Besides, a major benefit from punishment is that it can "create fear in the offender"; punishment can reduce the likelihood of the offender's wrongdoing because she would associate it with an aversive consequence (Weiner et al., 1997). Consumers are easily penalized when their return credits are low, therefore they show a stronger intention to keep the product to avoid possible penalties. Andreoni et al. (2003) argued that "the stick" is a rarely used but necessary weapon in reining in offenders' undesired behaviors. Individual behaviors can be largely restricted by the threat of punishment (Chen et al., 2012; Greitemeye & Weiner, 2008). Dootson et al. (2018) suggested that punishment could be used to effectively deter and modify consumers' undesired behaviors. Therefore, the credit amount should negatively affect consumers' keep intentions.

Hypothesis 3. *A high (vs. low) return credit amount is related to consumers' weaker intentions (vs. stronger intentions) to keep a purchased product.*

4.3.4 Repurchase Intention

Repurchase intention is defined as "the subjective probability that an individual will continue to purchase products from the online vendor or store in the future" (Chiu et

al., 2009, p. 765). As the use of return credits essentially amounts to introducing a restrictive RMP, consumers may discontinue repurchasing from shopping sites applying return credits. Pei et al. (2014) found that consumers show a stronger purchase intention in generous refund policy than in restrictive refund policy contexts. Röllecke et al. (2018) suggested that restrictive RMPs may reduce returns as well as repurchases. Signaling theory can properly explain the impact of the return credit amount on repurchase intention. In the eyes of consumers, ecommerce firms' RMPs can contain quality signals related to products and e-retailers (Pei et al., 2014; Wood, 2001; San Martín & Jiménez, 2011; Zhang et al., 2017). Signals can affect consumers not only in the pre-purchase stage, but also consumers' evaluation of online service performance in the post-purchase stage (McCollough & Gremler, 2004). In order to build competitive advantage, signals are frequently used by high-quality e-vendors to distinguish them from low-quality e-vendors (Bonifield et al., 2010). Lenient RMPs are usually used by high-quality e-vendors to signal their confidence in the products they sell (Oghazi et al., 2018). Zhang et al. (2017) used signaling theory to explain the effect of return policy leniency, and argued that a lenient return policy can transmit signals related to an e-seller's good service quality, which ultimately prompts consumers to shop online. When credit amount is low, with consumers more liable to penalties and anticipating potential restocking fees associated with making satisfaction-related returns, consumers may show a weaker intention to repurchase on the shopping site. When credit amount is high, as consumers are less likely to be penalized and a high credit amount gives more leeway for future returns, consumers may show a stronger intention to repurchase on the shopping site. Furthermore, considering that many consumers, particularly in countries like Brazil and South Africa, make few online purchases per year (Frisby, 2018), a high credit amount could be deemed as equivalent to free returns because the credit amount could be enough to cover all their online returns.

Hypothesis 4. *A high (vs. low) return credit amount is related to consumers' stronger intentions (vs. weaker intentions) to repurchase on the online store.*

4.3.5 Intention to Switch

In this context, intention to switch refers to an individual's willingness to migrate from one ecommerce platform to another (Ranganathan et al., 2006). Switching may

be a side effect of using return credits. On internet, switching costs from one site to another are low (Zhou, 2011). App stores offer online consumers a wide range of shopping apps. On average, each smartphone user uses 4.2 shopping apps (Go-Globe, 2018). Restrictive RMPs can drive consumers to other ecommerce sites with free returns. Ecommerce marketplaces need to consider intense competition and potential competitors to avoid consumer switching (Pei et al., 2014). The effect of the return credit amount on switching intention can be explained by justice theory, according to which, equity plays a key role in shaping long-term exchanges (Nikbin et al., 2012). A less fair procedure or process when dealing with product returns could lead to higher switching intention (Nikbin et al., 2012). As a more restrictive return policy could be deemed less fair in the exchange relationship between ecommerce firms and consumers (Pei et al., 2014; Oghazi et al., 2018), the credit amount sets a limit to consumers' free returns; it is expected that consumers have higher switching intentions when a more restrictive free returns limit is in place. When credit amount is low, a consumer who has just used up her credit could easily switch to other ecommerce sites. On the contrary, when credit amount is high, consumers may notice that the high amount gives them enough leeway to make returns and would therefore be more willing to stay on the shopping site. Figure 1 is a graph representation of the hypotheses.

Hypothesis 5. *A high (vs. low) return credit amount is related to consumers' weaker intentions (vs. stronger intentions) to switch to other ecommerce sites.*

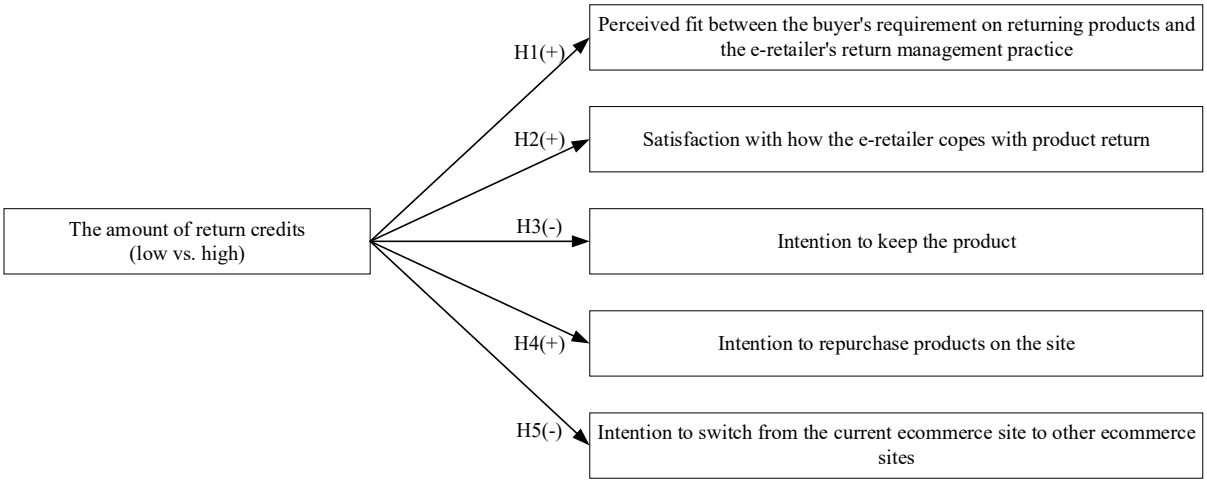

Figure 4.1 Research model

4.4 Materials & Methods

4.4.1 Research Procedure and Participants

We conducted a one-factor (credit amount: high vs. low) between-subject scenario experiment using online panel data. First, we hired an online survey company, Wjx.cn, to recruit participants. This company was required to randomly select participants from their Taobao-user dataset and send our survey link to them. The participants were Chinese and from across all Chinese territory. They were required to access the link to complete the survey online. 300 valid responses were collected. The number of individuals in each group was balanced because unbalanced data could have disrupted estimates of variance components and other parameters (Deutskens et al., 2006). Second, all participants were randomly assigned a survey task (the grouping of participants is indicated in Table 1). They received the treatment (the experimental material is presented in Supplementary Material 1). They first saw that "Taobao plans to issue a new return management practice and wants to know your opinions on it". Participants of group 1 and group 2 were told that defective products are always eligible for free returns, but their satisfaction-related returns would be limited. Specifically, they were exposed to a scenario in which they bought a coat that they were not 100% satisfied with despite a perfect fit. They were required to consider whether to return the coat or not according to the treatment they were exposed to.

Third, prior to answering questions, participants were informed that they would have to give answers based on their intuition. Last, participants answered all questions. We paid each participant 5 yuan ($0.72) as reward. The China Internet Network Information Centre revealed that about 60.7% of all Taobao users were female (Cui et al., 2016). In our sample, 57.7% of participants were female, a roughly similar figure. In terms of age, in our sample 52.3% were between 25-34 years old, 21.7% between 18-24, 19% between 35-44, 5.7% between 45-54, and 1.3% over 54 years old. This wide age range was also consistent with a Taobao study in which the age range of its users was also broad (Yu & Gao, 2012). Hence, it can be argued that our sample is representative of Taobao users.

Table 4.1 The grouping of participants

Name	Treatment	Number
Group 1	A low amount of return credits (465 yuan)	n = 100
Group 2	A high amount of return credits (5500 yuan)	n = 100
Group 3	Unrestricted free returns	n = 100

Note: The reason for using 465 yuan as the low credit amount and 5,500 yuan as the high credit amount is explained in Section 4.2.

4.4.2 Experimental Material and Measures

A real ecommerce site, Taobao, was used in the experiment because of its popularity among Chinese online shoppers. In order to improve the internal validity of our experiment, our research needed participants to assess the use of return credits on a real selling platform. If we had created an ecommerce site for the experiment, participants would have had no motivation to save return-related credits because they would never use this site or anticipate using such a site for shopping in the future and, consequently, the possibility of making returns. Contrarily, Taobao users would think twice about whether they were willing to repurchase on Taobao or not if it introduced return credits to reduce returns.

Clothing is frequently returned by consumers (Dailey & Ülkü, 2018).. Also, this product category is frequently associated with satisfaction-related return reasons, such as color and style issues (Winkler, 2018). Therefore, we chose a 462-yuan coat as the

experimental product. The 462-yuan price was selected because 80% of coats sold on Taobao were around this figure.

The low credit amount, 465 yuan, was set to be just over the coat price, enabling participants to return the coat with no charge. If a participant decided to return the coat, her remaining credit for satisfaction-related returns with no charge would be just 3 yuan; this means that her future returns of this kind will very likely be penalized in the form of restocking fees. This runs parallel to the idea of introducing return credits, deterring consumers' excessive returns instead of penalizing them if they make returns.

In order to set an objective high amount, we know that active Alibaba users spend around 9000 yuan a year (AlibabaGroup, 2018). It was decided to set the free return amount lower than this average online spending. We ran several pre-tests to see which amount (3500 yuan, 4500 yuan, 5500 yuan) could be significantly perceived as higher than the low amount scenario (465 yuan). We asked pre-test participants to what extent they considered the amount to be enough (from not nearly enough to more than enough, a 7-point scale) for their satisfaction-related returns on Taobao; these participants were collected using a convenience sample of Taobao users. The pre-test result showed that only the 5500-yuan amount was perceived to be significantly higher than the low 465-yuan amount ($p < 0.001$, independent samples' t-test), with a mean value ($M = 4.73$, $n = 26$); the low amount was perceived as not enough for returns ($M = 2.58$, $n = 26$).

In practice, several e-retailers (e.g. eBay and Amazon) charge restocking fees. The fee usually ranges around 10-20% of the product price (Akçay et al., 2013). In order to find a stronger deterrent effect to reduce returns using return credit, we set a 20% restocking fee for the return amount that exceeds the return credit. In both high and low credit amount scenarios, participants had sufficient credit to return the coat for free. Therefore, if they return the coat, they will not be charged a restocking fee. Measurement scales are presented in Supplementary Material 2.

4.5 Results

4.5.1 Manipulation Check and Scale Reliability

The scale used in the pre-test was also applied to the manipulation check carried out between group 1 and 2 in our experimental sample. The independent samples' t-test

showed that the high credit amount was perceived as significantly higher than the low amount ($M_{high} = 5.33$, $M_{low} = 2.87$, $p < 0.001$).

In this study, the dependent variables were measured by multi-item scales (see Supplementary Material 2). As ANOVA works with one-item variables, we needed to replace each multi-item variable with a one-item variable by calculating the average value of the scores of all items of the variable. In order to justify working with the average values in ANOVA, as in prior consumer behavior studies (e.g., Chen et al., 2012; Zhu et al., 2007), we assessed each scale's reliability before using ANOVA. The Cronbach's alpha of all variables was satisfactory and over 0.8 (see Table 2), indicating a good scale reliability. The satisfactory result supported working with average values for dependent variables in the ANOVAs to apply when testing the hypotheses.

Table 4.2 Cronbach's Alpha

	Cronbach's Alpha
Perceived fit	0.949
Satisfaction	0.961
Intention to keep	0.919
Repurchase intention	0.941
Switch intention	0.955

4.5.2 Hypotheses' testing

One-way ANOVAs were conducted to test the hypotheses. It found that the high amount fitted participants' requirements better than the low amount ($M_{high} = 4.627$, $M_{low} = 3.86$, $F = 7.809$, $p < 0.01$). H1 was supported. In terms of consumer satisfaction, the result revealed that the high amount made consumers feel more satisfied ($M_{high} = 4.263$, $M_{low} = 3.475$, $F = 10.01$, $p < 0.01$). H2 was supported.

Despite the fact that prior studies have suggested that restrictive RMPs can reduce returns (Lantz & Hjort, 2013; Shulman et al., 2011; Wood, S2001), it is uncertain whether return credits in an ecommerce context can be used to reduce returns or not. We compared the two groups (1 and 2) that had return credits with the group with no

return restrictions (group 3). It was found that using return credits can significantly strengthen participants' keep intentions (M_{low} = 4.23, $M_{unrestricted}$ = 3.363, F = 15.697, $p < 0.001$; M_{high} = 4.007, $M_{unrestricted}$ = 3.363, F = 7.803, $p < 0.01$). Thus, using return credits to reduce satisfaction-related returns would be plausible. On the other hand, we expected that the amount of return credits would negatively relate to the consumer's intention to keep the purchased product she was not satisfied with once received. But this credit had no significant influence on this variable (M_{high} = 4.007, M_{low} = 4.23, F = 0.992, p = 0.321). Therefore, H3 was rejected.

The high return credit was related to participants' stronger repurchase intentions more than the low amount (M_{high} = 5.117, M_{low} = 4.48, F = 6.518, $p < 0.05$), so H4 was supported. Also, as expected, it was related to participants' weaker intentions to switch to other online stores than the low amount scenario (M_{high} = 3.29, M_{low} = 4.073, F = 9.108, $p < 0.01$). Thus H5 was supported. In general, as hypothesized, participants reacted more positively to the high amount of return credit scenario than to the low amount scenario.

4.6 Extension analysis

As the high amount was associated with better outcomes, we also deemed it necessary to explore whether the high credit amount, or less restrictive scenario, could compete with unrestricted free returns. We compared the mean values of perceived fit, satisfaction, repurchase intention, switch intention and intention to keep between the two groups. Results showed that the high amount scenario still produced less favorable responses in terms of the side effects of introducing return credits (see Table 3). In sum, the high amount scenario yielded more lenient consumer responses than the low amount scenario but still not as good as an unrestricted scenario, which is more favorable for consumers.

Table 4.3 Comparison between the high amount group and the unrestricted free return group (: p < 0.05, **: p < 0.01, ***: p < 0.001)*

	Group	N	Mean	F-value	Sig
Perceived fit	high	100	4.627	27.296	***
	unrestricted	100	5.76		
Satisfaction	high	100	4.263	36.445	***
	unrestricted	100	5.475		
Repurchase intention	high	100	5.117	16.489	***
	unrestricted	100	5.9		
Switch intention	high	100	3.29	4.015	*
	unrestricted	100	2.827		
Intention to keep	high	100	4.007	7.803	**
	unrestricted	100	3.363		

To explore the relationships between all pairs of dependent variables, we conducted an additional correlation analysis. The sample size was 300, and the data used for this analysis were the average values of multi-item scales for dependent variables, the same as the average values used for ANOVAs. Pearson correlation analysis was employed for correlation analysis. The results showed that there were significantly positive correlations between perceived fit and satisfaction ($r = 0.871$, $p < 0.01$), between perceived fit and repurchase intention ($r = 0.818$, $p < 0.01$), and between satisfaction and repurchase intention ($r = 0.807$, $p < 0.01$). In addition, we found significantly negative correlations between perceived fit and switch intention ($r = -0.742$, $p < 0.01$), between satisfaction and switch intention ($r = -0.750$, $p < 0.01$), and between repurchase intention and switch intention ($r = -0.794$, $p < 0.01$). No significant correlation was found between perceived fit and keep intention ($r = 0.099$, $p = 0.086$), between satisfaction and keep intention ($r = 0.092$, $p = 0.112$), between keep intention and repurchase intention ($r = 0.085$, $p = 0.142$), or between keep intention and switch intention ($r = -0.056$, $p = 0.332$).

4.7 Discussion and Conclusion

4.7.1 Theoretical Discussion

This article approaches the outcomes of different levels of return credit in online shopping. It has been found that the high amount credit scenario can help avoid satisfaction-related returns, as well as having weaker side effects than the low amount scenario. Prior return punishment-related research has focused on absolute punitive-oriented mechanisms (see Abdulla et al., 2019; Akçay et al., 2013; Lantz & Hjort, 2013; Pei et al., 2014; Shulman et al., 2009; Shulman et al., 2010; Shulman et al., 2011), penalizing returners for all of their returns, but no research to date has employed a milder, relative punitive-oriented approach in designing a punishment mechanism for satisfaction-related online returns. This study aims to close this research gap, and it has found that the use of return credit, a milder punitive-oriented approach, can significantly deter returns; also, compared to the non-restrictive, always free-return scenario, when potential return penalties were present, consumers were more willing to keep the non-satisfactory purchase. This finding can close the research gap in current literature that has paid less attention to the milder punitive-oriented approach in deterring satisfaction-related returns.

In terms of money leniency in RMPs, current knowledge on return management indicates that firms basically have two options: full refunds or partial refunds (Janakiraman et al., 2016). From a punitive-oriented perspective, existing research focuses on adjusting the proportion of refunds or restocking fees (see Abdulla et al., 2019; Akçay et al., 2013; Shulman et al., 2009). By contrast, from a less punitive-oriented perspective, this study states that firms can impose stricter or milder money restrictions in their RMPs by adjusting a returnable monetary amount or return credits to influence satisfaction-related returns. Existing knowledge assumes that a stricter monetary restriction on the refund of a returned product should relate to lower return probability (Abdulla et al., 2019; Lantz & Hjort, 2013; Wood, 2001), but we have found that consumers' intentions to keep purchases did not show significant differences when operating on different restrictive levels (high vs. low) of credit amount for handling returns. Participants showed similar moderate intentions to keep non-satisfactory purchases in both scenarios. This is an unexpected result, as consumers are supposed to be more willing to keep them in a context of higher restrictive return credit due to having less leeway to return without paying a fee. A possible explanation for this result is that, if consumers who are provided with a low amount of credit return a product, they could make fewer purchases from the site in

the future to reduce the likelihood of being penalized for future returns. In this article, we found that consumers who are provided with low return credits have weaker intention to repurchase on the site (see H4). They would be willing to use their return credits to return a product for free, even though they may not have sufficient credits in the future after making that return, because they could then make fewer purchases to avoid being penalized for future returns. Therefore, these consumers could have a relatively low intention to keep the product, similar to those who are provided with high return credits. This finding updates our understanding of the return-avoidance effect of setting monetary restrictions for satisfaction-related online returns: stricter monetary restrictions do not necessarily lead to significantly higher keep intentions.

One theoretical contribution of this study is to extend and complement existing theories on understanding the relationship between the restrictiveness of RMPs and their side effects. Based on signaling theory, RMPs are deemed to be a vehicle for transmitting signals of product quality (Wood, 2001; Zhang et al., 2017), vendor quality (Bonifield & Schultz, 2010), vendor or Web store trustworthiness (Oghazi et al., 2018; Wang et al., 2004), and a web store's service quality (Zhang et al., 2017), which can influence consumers' purchase intentions or purchase decision (Oghazi et al., 2018; Zhang et al., 2017). This study has found a new connection between different levels of RMP restrictiveness and repurchase intention.[2] In terms of return credit use, a higher return credit amount is related to stronger repurchase intention.

Current return management theory implies that e-retailers should focus on offering full money back or product replacement for buyers, and handling returns effectively to satisfy consumers who are not happy with their purchase (Ahsan & Rahman, 2016). Existing studies have focused on improving the technical (Mollenkopf et al., 2007) and experiential aspects (Ertekin, 2018) of the return process, or on providing pre- or post-purchase information (Hjort et al., 2019). to enhance consumer satisfaction. We have found that consumers were more satisfied when a higher amount of credit for free returns was offered. This finding offers new insights to current return management theory: even in a restrictive scenario, consumer satisfaction can also be elevated by giving far more leeway for free returns. This finding also suggests that a consumer-friendly return policy could be an effective way to compensate consumers

[2] Gäthke et al. (2022) studied the relationship between return restrictiveness and repurchase intention among online consumers, but they focused on effort restrictiveness and refund types (money back vs. store credit) from which our research are quite different.

who are dissatisfied with their purchases. Prior studies pointed out that when consumers avail themselves of an e-retailer's return policy, the e-retailer faces a service recovery opportunity related to the original service failure (Mollenkopf et al., 2007; Abdulla et al., 2019). In the post-purchase stage of the shopper's journey, a benefit in the company's return policy could potentially be a turning point when the purchase does not live up to expectations.

Consumers' fit perceptions and switch intentions have been pivotal constructs in marketing and ecommerce (Abbey et al., 2018; Andreoni et al., 2003; Arvey & Ivancevich, 1980; Boisvert & Ashill, 2018; Bonifield et al., 2010; Chang et al., 2009; Chen et al., 2012; Chiu et al., 2009; Dootson et al., 2018; Ertekin, 2018; Flanagin et al., 2014; Frisby, 2018; Greitemeyer & Weiner, 2008; Hjort et al., 2013; Liao & Keng, 2013; Martín-Ruiz & Rondán-Cataluña, 2008; McCollough & Gremler, 2004; Nikbin et al., 2012; Oghazi et al., 2018; Ranganathan et al., 2006; San Martín & Jiménez, 2011; Suh & Han, 2003; Zhang et al., 2017), but no research has yet indicated to what extent an e-retailer's restrictive RMP fits consumers' requirements on making satisfaction-related returns or to what extent it is related to consumer turnover. This article has approached this theoretical gap by building connections between RMP restrictiveness and perceived fit of the return policy and switch intention to other online stores. It has concluded that RMP restrictiveness is negatively related to consumers' fit perceptions, and positively related to switch intentions.

4.7.2 Practical Implications

Using return credits can indeed reduce satisfaction-related returns, and at the same time lead to negative outcomes such as fewer repurchases and consumer turnover. If a company does not aspire to guaranteeing that all returns will be fully refunded, it can consider using return credits to reduce satisfaction-related returns. Our findings also suggest that a high or sufficient amount of return credits have a similar effect on deterring returns, and would have fewer side effects compared to using a low amount of credit. Hence, e-retailers can reasonably increase the amount of return credits to weaken the side effects of using return credits, and reach their goal of reducing returns.

The use of return credits relies on developing a return database which can record and monitor each consumer's return activities: what, how and when products were returned (price, category, return type, return channel, return date, return reason, etc.); the number of returns the consumer has made; the number of satisfaction-related

returns she has made; the consumption of return credits; the restocking fees she was charged for excessive returns. E-retailers could connect this database to a sales database to know the extent to which the use of return credits reduces satisfaction-related returns and harms sales. This database could also aid e-retailers' decision-making processes to fix a reasonable credit amount. E-retailers could also create an ease-of-use interface for consumers, so that consumers could easily retrieve their remaining return credits and would be more careful about purchasing items and making satisfaction-related returns.

As some consumers can open new accounts or use others' accounts when they have used up their return credits, companies could take steps to prevent this. For example, companies could require consumers to use their phone number to create new accounts and urge other users not to share their accounts to avoid privacy information disclosure. Companies could also launch loyalty programs to motivate consumers to continually use an account. For example, Taobao does this by offering e-coupons to loyal consumers.

Some consumers disguise satisfaction-related returns as "defective returns" (Ferguson et al., 2006). This may damage the use of return credits. For instance, a consumer that wants to return a coat because she simply dislikes it might report it as defective to avoid being penalized by restocking fees. However, this is not unsolvable. Before shipping items to buyers, sellers can examine items and ensure that they are non-defective. E-retailers can also request that buyers screen items and confirm that items are non-defective before signing their name and receiving them. For example, coolbuy.com requires buyers to inspect products before signing their name when items are shipped to their receipt address. E-retailers can deny return requests by screening non-defective returns disguised as defective returns. By using the return database, e-retailers can flag fraudulent consumers who repeatedly disguise satisfaction-related returns as defective ones, and send them a warning email or even block them.

4.8 Limitations and Future Research

Our experiment required the selection of a real ecommerce site to study the effect of introducing return credits, in this case Taobao was chosen as the experimental shopping site. But this site does not represent all shopping sites. There are many other shopping sites apart from Taobao, therefore our results were inevitably affected by

Taobao's characteristics. Future studies could focus on other shopping sites to conduct similar research and assess the consistency of our results. Overall, because we investigated the effects of different amounts of return credit on consumer responses in the specific context of online returns in this study, our findings may not be generalizable to all online return contexts. Future studies could explore and delineate the boundary conditions of the effects studied in this article. For instance, future studies could investigate the boundary conditions under which offering a high amount of return credits could trigger positive outcomes such as repurchase intention. Such studies could enrich our understanding of the outcomes when using different amounts of return credit.

We used Taobao and its users to ensure the internal validity of the study. Users' previous experience with this site, such as having a negative experience with the platform or returning purchases on the grounds of dissatisfaction, may affect how they respond to return credits. However, we did not control for these relevant factors, which is a limitation of this study. Future studies on the relationship between the use of return credits and consumer responses could take these factors into consideration to better assure validity. This study was also limited by potential social desirability bias and other possible response biases in the self-reports. Conducting future studies on return credits using self-reporting measures is encouraged to control for these biases and improve the validity.

It found that a high, sufficient amount of return credits can significantly deter satisfaction-related returns and incur fewer side effects. However, consumers' keep intentions do not seem to be very high (M_{high} = 4.007, slightly over 4). This result indicates that further research is needed on the use of return credits and on seeking out a better approach by which ecommerce firms can more effectively deter satisfaction-related returns as well as reducing the inherent costs.

This article provides insights into the outcomes when using different amounts of return credit. However, the appropriate amount of return credit to offer to customers remains to be researched. Future studies could analyze more appropriate levels of return credits to make it clearer for e-retailers to determine what level they should offer. In our experiment, a 465-yuan/5500-yuan credit and a 20% restocking fee were set to influence consumers' return decision. Future researchers and practitioners could also conduct their own action research, delving into an ecommerce firm's specifics, utilizing their sales and return database, and proposing a return credit amount and

restocking fee that fits this firm's return policies. Researchers also need to consider the following questions: what criteria should the ecommerce firm adopt to offer a reasonable credit amount and restocking fee? How does this RMP connect to, and serve, the firm's strategies? As mentioned previously, considering that consumers who shop more often usually make more returns (Hjort et al., 2013), a variable mechanism for return credits is plausible. When the profit that a consumer contributes surpasses the costs involved in handling her returns, it is plausible to reward such consumers with more leeway to make free returns. The free returns limit is designed to prevent consumers from abusing free returns rather than hindering them from making purchases. Future research can ponder the following questions: what benefits do ecommerce firms accrue from using return penalties? How can ecommerce firms maximize the benefits of using return penalties while minimizing the costs involved in their use? In other words, the use of return credits or free return limits calls for more research in the realm of managing online returns.

Using return credits may lead to opportunistic return behavior by consumers. Consumers may be motivated to damage a non-defective product and claim a defective return when their remaining credits are insufficient, in order to avoid being penalized. They may engage in such return behavior even if they have sufficient credits, in order to save the credits for future returns. Future studies could investigate whether these behaviors are a major problem for e-retailers. If so, how can e-retailers combat such opportunistic return behaviors?

Chapter V Effects of Purchase-Risk Notices on Reducing Online Returns[3]

The article “What I’ve received doesn’t match what I saw online”: Effects of purchase-risk notices on reducing online returns” was published by Information & Management. In Chapter V, this article will be used. In order to maintain the cohesion of the thesis, some minor revisions have also been made to this article. Information about the article can be found in the footnote below. I have been authorized by the co-authors and the publisher to include this article in this thesis.

[3] This chapter is from the article "What I’ve received doesn’t match what I saw online”: Effects of purchase-risk notices on reducing online returns ". Martínez-López, F. J., Li, Y., Feng, C., Liu, H., & Sansó-Mata, M. (2022). “What I’ve received doesn’t match what I saw online”: Effects of purchase-risk notices on reducing online returns. Information & Management, 59(8), 103720. https://doi.org/10.1016/j.im.2022.103720

5.1 Introduction

The total monetary value of online returns in the retail industry has been estimated at $40 billion dollars in the United States (Appriss Retail, 2019). The return rate is 8% for products purchased in physical stores, while this rate increases to 25–40% for products bought online (Paazl, 2017). Online returns have been a burning issue for e-retailers (Hjort, 2019). In order to avoid online returns, prior literature suggests a *preventive* approach by imposing restrictions (e.g., restocking fees) on making returns (see Janakiraman et al., 2016). But a restrictive return policy could lead to undesired outcomes, like dissuading consumers from purchasing (Oghazi et al., 2018; Pei et al., 2014) and consumer dissatisfaction (Röllecke et al., 2018). In order to find a "cost-friendly" way of reducing returns, we analyze a *preemptive* approach – purchase-risk notices (PRNs)–to avoid returns by means of expectancy-lowering communication. PRNs are a typical form of preemptive risk communication that seeks to anticipate risks or negative outcomes, by using prevention, avoidance, or cautionary notices (Andersen & Spitzberg, 2009). PRNs are used to present noticeable risk information for consumers to consider risks involved in their purchase decision making (Ju et al., 2020). E-sellers issue such notices to inform consumers about possible risks associated with mismatches between a product's online appearance and its actual appearance. For example, a seller could inform its consumers that the color of the product they would eventually receive could vary from what they see on its selling platform. Research has studied preemptive risk communication (e.g., Cranage et al., 2006; Herbst et al., 2022; Hüttl-Maack et al., 2019; Ju, 2017; Ju et al., 2020; Petrescu et al., 2019) , but our research differs from past studies (detailed differences can be seen in Appendix 1). First, previous studies have focused on other aspects of risk communication such as communication pace (Herbst et al., 2011; Herbst et al., 2013), information location (Ju, 2017), and information prominence (Ju et al., 2020). Our study examined whether ecommerce consumers displayed different responses when a PRN was present or absent. Second, Petrescu et al. (2019) examined the role of ad disclaimers on moderating the effects of advertising skepticism on ad believability, attitudes toward the ad, trust in the manufacturers, and intentions to use the product. However, the direct effects, rather than moderating effects, of the presence of risk information on consumers were examined in our study. Finally, few studies have examined the effects of the presence of risk information on purchase intention, repurchase intention (Hüttl-Maack et al., 2019), and consumer

disappointment (Cranage et al., 2006). However, not enough attention has been paid to the effects of risk information presence in governing ecommerce returns. We instead expanded the effects and built more connections between information presence and other constructs, i.e., consumer skepticism, return intention, mismatch tolerance, and purchasing regret, which are highly relevant to the ecommerce return context. To the best of our knowledge, these variables relevant to ecommerce returns have not yet been studied by existing research. In brief, the effect of PRNs on a set of different dependent variables in a different context was examined in the present study. Therefore, this study is of interest to research on return avoidance as it helps to fill this gap and to e-retailers intent on reducing online returns. In addition, we also examined whether the use of PRNs can influence consumers' purchase intention and other shopping-related responses. Two studies (Study 1 and Study 2) were conducted. Study 1 focused on the pre-purchase stage and examined the effects of PRN on purchase intention and consumer skepticism. Study 2 focused on the post-purchase stage and examined the effects of PRNs on return intention, mismatch tolerance, dissatisfaction, purchasing regret, and repurchase intention.

The article is structured as follows. First, our research interest, avoiding online returns by using PRNs, is described. Second, our research scope and context, and how it can contribute to theory and practice, are presented in detail. We also discuss why two studies are needed to achieve a holistic study of the effects of PRNs. Then, we describe our experiment-based method and present results. Last, we discuss how this study contributes to theory and practice and close with limitations and further research.

5.2 Background

5.2.1 Online Returns in Visual Ecommerce

Return-avoidance research cannot focus on all forms of returns. Perishable products that consumers have to keep and defective products that consumers have to return do not fall within the remit of return-avoidance research (Lee & Yi, 2019). The scope of return-avoidance research lies in reducing returns of non-defective products that consumers feel are acceptable but not completely satisfactory (Lee & Yi, 2017).

An analysis is needed to better understand satisfaction-related returns in visual ecommerce, in which consumers conduct online shopping based on product pictures, so that return-avoidance solutions can be found. As online shoppers cannot personally examine products before reception, product pictures and other visualization

techniques are used to vividly manifest product information that cannot be fluently communicated by text (Dimoka et al., 2012). The vivid presentation of a product can increase consumers' confidence in product evaluation (Weathers et al., 2007), help consumers infer product performance (Dimoka et al., 2012), and influence consumer attention and purchase intention (Salleh et al., 2016). In fact, over 90% of consumers consider a product's visual appearance essential when shopping (Kissmetrics, 2016; Razack, 2019). However, a common return reason cited in visual ecommerce is that consumers receive a product that does not match the seller's product pictures (Hamilton, 2016; Razack, 2019). It is estimated that 64.2% of online returns are caused by the mismatch between a product's online appearance and its actual physical appearance (Charlton, 2020). Seller- and technical-related factors could cause this mismatch phenomenon. On the one hand, as e-sellers are aware of all the benefits of using product pictures in ecommerce, most do not simply snap a photo of the product and upload it to their selling platforms. They use professional photo-editing services to retouch the product image (Petrescu et al., 2019). For instance, e-sellers could retouch product color by using Photoshop software, so that products seem more colorful online; therefore, consumers would receive a product that is less colorful. Digital photo manipulation is ubiquitous, and this practice seems unstoppable (Keith, 2014). As internet creates enormous business opportunities as well as strong competition, e-sellers are forced to use retouched product pictures to increase website traffic and increase sales (O'Donoghue, 2019). Moreover, the natural physical separation of sellers and buyers leads to information asymmetry whereby sellers intentionally stress the good aspects and hide the not-so-good aspects of a product (Park et al., 2007). To summarize, seller-related factors could cause product appearance mismatches.

On the other hand, ecommerce unites sellers and buyers via electronic devices such as computers and smartphones. Yet information transmitted from sellers to buyers could be affected by the information transmission medium itself (Cohen, 2009). Even though e-sellers use realistic product pictures, the display of product pictures on buyers' devices is inevitably affected by the computer-mediated information transmission medium. For example, the color display of computer screens is affected by technical factors such as the type, brand, age, and display settings of the screen and operating system configurations for the number of colors to be displayed (Nitse et al.,

2004; Parker et al., 2009). In short, technical factors can also cause product appearance mismatches.

Prior literature theory attributed the mismatch phenomenon to uncertainty in online markets (e.g., Dimoka et al., 2012; Hong & Pavlou, 2014; Weathers, 2007). It is described as "the buyer's difficulty in predicting the outcome of an online transaction" (Dimoka et al., 2012, p. 399). In our case, seller-related factors can be further attributed to seller uncertainty (Dimoka et al., 2012). The manipulation and beautification of product pictures mirror seller opportunism, thereby intentionally using appealing product pictures and hiding true product attributes (Dimoka et al., 2012). Technical factors can be attributed to technical weaknesses such as the limitations of visualization techniques in realistically presenting a product. Even superior reality-oriented visualization techniques such as Virtual Reality applications cannot be completely realistic with regard to displaying an object online (Moustakas et al., 2007). Pictures cannot fully depict product attributes and are not compelling in minimizing the gap between what buyers saw online and what they actually received (Nilsson et al., 2015). With regard to online returns caused by uncertainty in ecommerce, prior literature mainly focused on minimizing uncertainty in ecommerce (e.g., Dimoka et al., 2012; Hong & Pavlou, 2014; Weathers, 2007). In contrast, due to seller opportunism and technical weaknesses, we argue that such uncertainty cannot be eliminated, neither are "zero defects" achievable in ecommerce. E-sellers' opportunistic behavior (e.g., photo manipulation) cannot be completely avoided due to the intensive competition in traffic and online sales (O'Donoghue, 2019). Hence, in contrast to a previous route to "zero defects", this study recommends that ecommerce companies use PRNs to inform consumers of product appearance mismatches, to nudge consumers toward being more tolerant of "defects", to alleviate their purchasing regret and dissatisfaction, and to reduce online returns caused by such mismatches.

5.2.2 Purchase-risk Notices

PRNs are a typical form of preemptive risk communication that seeks to anticipate risks or negative outcomes by using prevention, avoidance, or cautionary notices (Andersen & Spitzberg, 2009). Preemptive risk communication asks shoppers to not only consider the benefits of a product but also the risky, negative aspects involved in product evaluation (Ju et al., 2020). In an ecommerce context, PRNs are

already used across various product categories (e.g., apparel, electronics, furniture, etc.)[1]. But since not all e-sellers have adopted them, there is a debate as to whether regulations should be rolled out for the mandatory use of PRNs. In contrast to bricks-and-mortar merchants, it is more necessary for e-sellers to make preemptive risk communications due to consumers' inability to access products before reception. On the one hand, online consumers actively acquire purchase risk information to avoid pitfalls and risks (Ha, 2002). Consumers could regard not offering a PRN as a form of sellers' opportunistic behavior (Hüttl-Maack et al., 2019). On the other hand, e-sellers can also benefit from issuing a risk communication because acknowledging negative aspects related to a product can enhance an e-seller's credibility (Ju, 2017); in fact, buyers attribute honesty to an e-seller who discloses negative aspects (Crowley & Hoyer, 1994). Preemptive risk communication is also a sign of a company's social responsibility, by increasing the transparency of its online business (Herbst et al., 2013). Apart from these benefits already analyzed by previous studies, this research focuses on a concrete issue: how an e-seller's preemptive risk communication affects online returns.

Research shows that there is disconfirmation when a product functions (i.e., outcomes) below a consumer's prior expectation (Oliver, 1980). Then the consumer would be dissatisfied and would want to return the product and get her money back (Pei & Paswan, 2018). Therefore, ecommerce companies have two options to avoid returns: first, companies should bring outcomes in line with consumers' expectations (Van Dijk et al., 2003), which, as mentioned previously in "zero defects", is unlikely to be achieved in ecommerce settings; second, companies can align consumers' expectations with lower anticipated outcomes, which is easier to apply (Van Dijk et al., 2003). Previous research indicates that expected negative outcomes are less repulsive than unexpected negative outcomes (Van Dijk et al., 2003). Consumer tolerance and dissatisfaction are affected by how a consumer's expectation of adequate product performance varies (Trianasari et al., 2018). Consumers' purchasing regret is associated with a significant change in product utility or performance from the time of purchase to the time of receiving the product in hand (see Lee & Cotte, 2009). By using PRNs to inform consumers about possible mismatches beforehand, it is supposed that they will feel less dissatisfied and regretful and become more tolerant of mismatches because the PRN diminishes the disconfirmation of prior expectations and loss perceptions (Furnier, 2017).

Accordingly, this research aimed to examine whether the presence of PRNs is related to higher consumer tolerance and lower dissatisfaction and regret and whether it can ultimately weaken consumers' return intention.

Previously, ecommerce return researchers have paid their attention on the use of restrictive return policies (e.g., non-defective products cannot be returned; charging a restocking fee for returns) to avoid returns (Janakiraman et al., 2016). However, recent research has found that product returns can influence activities in a consumer journey encompassing the pre-purchase stage and the post-purchase stage (Robertson et al., 2020). How return-related measures are incorporated into these stages remains to be explored in academic research (Robertson et al., 2020). Therefore, return-avoidance research should not solely focus on return reduction but should also consider consumers' purchase intention and other shopping-related responses in the consumer journey when return-avoidance measures are introduced. In the pre-purchase stage, consumers can decide to buy, but this is not a final decision because consumers can return purchased items because of their remorse in the next stage (Lee & Yi, 2019). In the post-purchase stage, consumers have received the item and can better evaluate it and then ultimately decide to keep or return it (Gelbrich et al., 2017; Wood, 2001). With regard to the present study, PRNs were introduced to avoid ecommerce returns although they could influence consumers' purchase intention because such risk information can invoke consumers' precautionary and risk-avoidance behavior (e.g., purchase abandonment; Sweeny & Dillard, 2014). Previous research has also indicated that use of a precautionary notice can decrease the likelihood of consumers making a purchase (Hüttl-Maack et al., 2019). Accordingly, this article describes two studies. The first study focused on the pre-purchase stage in which the consumers' purchase decision was to be determined, whereas the second study focused on the post-purchase stage in which the consumers had already ordered, accessed, and assessed a product and then decided whether to return it or not. This research design can help in examining the pre-purchase and post-purchase effects of PRNs on consumers' attitudinal and behavioral responses and holistically evaluate the use of PRNs in avoiding online returns.

5.3 Pre-purchase Effects of Purchase-risk Notices

5.3.1 Research Overview

We are interested in the effect of PRNs on reducing online buyers' return intention. However, possible negative byproducts of introducing return-avoidance measures should not be underestimated (Gelbrich et al., 2017). Here, two possible negative consequences (consumer skepticism and fewer purchases) are discussed.

Consumers' trust-related beliefs are a cornerstone in developing long-term relationships (Wu et al., 2010) and are deemed to be a crucial proxy of repeat purchases (Chiu et al., 2012). Given such a fact, this paper studies the side effects of PRNs on consumer skepticism. It focuses on consumers' distrust beliefs in terms of a seller's product picture.

Some studies have pointed to the importance of observing the effect of return-avoidance measures on purchase intention (e.g., Gelbrich et al., 2017; Wood, 2001). Risk communication theory states that risk communication often involves a dilemma (Williams & Noyes, 2007). If e-sellers do not issue a risk communication, consumers may not be able to make an accurate purchase decision; on the contrary, if risk information is explicitly conveyed, consumers may be fearful about not obtaining the desired outcome and, therefore, abort the purchase (Williams & Noyes, 2007). This fear can be a negative consequence of providing risk information (Williams & Noyes, 2007). Here, we are interested in knowing whether consumers dealing with purchase risk information are still willing to buy. A graphical presentation of Study 1 is shown in Fig. 5.1.

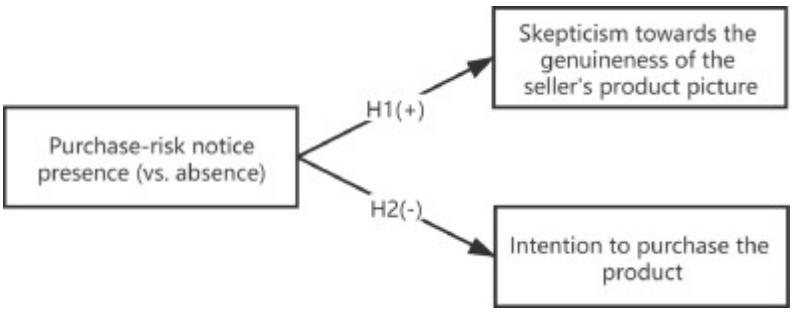

Fig. 5.1 Hypotheses of study 1.

5.3.2 Hypotheses

5.3.2.1 Consumer Skepticism

Consumer skepticism refers to consumers' defensive responses to a seller's commercial content, which includes attempts at persuasion (Koslow, 2000). As

previously mentioned, digital photo manipulation is ubiquitous and unstoppable (Keith, 2014). Digitally manipulated product pictures are used to increase website traffic and increase sales (O'Donoghue, 2019). In ecommerce settings, consumers cannot touch and evaluate products in person, which leads to an information asymmetry situation in which sellers can highlight the good aspects and hide the not-so-good aspects of a product (Park et al., 2007). The digitally manipulated product is more appealing and creates higher expectancy for the consumers concerning the product. However, the use of PRNs explicitly conveys the mismatch risk to consumers, who could obtain a product that does not completely match the seller's product picture. In such cases, the picture could therefore be considered non-genuine, thereby undermining consumers' trust (Petresc et al., 2019). Moreover, e-sellers may intentionally use beautified product pictures to attract more purchases (O'Donoghue, 2019), which engenders consumers' negative responses and eventually leads to consumer distrust (Petresc et al., 2019). Buyers may distrust sellers' commercial content in which deceptive technology (e.g., Photoshop) is used (Waller, 2015). Awareness of non-genuine product pictures could trigger consumers' defensive reactions toward the influence of the e-seller's attempt at persuasion (Xie, 2014), thus resulting in consumer skepticism toward the genuineness of the product picture.

H1

In the presence (vs. absence) of a PRN, consumers will show more (vs. less) skepticism toward the genuineness of the seller's product picture.

5.3.2.2 Purchase Intention

Purchase intention refers to "the strength of a consumer's intentions to perform a specified purchasing behavior via Internet" (Hsu et al., 2016, p. 558). Using PRNs can raise consumers' risk concerns on receiving a product that does not match its online appearance. Such risk concerns can eventually influence consumers' purchase intentions (Yang et al., 2016). PRNs indicate a risk associated with product appearance mismatches; therefore, consumers could be discouraged from purchasing because they will adopt precautionary, showing risk-avoidance behavior (e.g., purchase abandonment) when exposed to risk information (Sweeny & Dillard, 2014). As product images can offer more detailed information for consumers, elaborated

images could elicit consumers' higher value perceptions about the product (Chen et al., 2020). In an ecommerce setting wherein consumers rely on product pictures to assess product value and make their purchase decision, the product value drops sharply when consumers notice that the actual product deviates from their assumption (Wang et al., 2021). Previous research has indicated the potential influence of risk communication on purchase intention. Research has found that the use of a precautionary notice on possible product failure decreases purchase likelihood because the notice can elicit higher perceptions of failure probability from consumers (Hüttl-Maack et al., 2019). Thus,

H2

In the presence (vs. absence) of a PRN, consumers will show a lower (vs. higher) intention to purchase the product.

5.3.3 Study 1

5.3.3.1. Method

5.3.3.1.1 Respondents and Procedure

A one-factor (purchase-risk notice: yes vs. no) between-subject scenario experiment was conducted using online panel data. First, we hired an online survey company, Wjx.cn, to recruit respondents. These respondents were Chinese online shoppers who accessed a link sent by the company to complete the experiment online. The expected sample size was calculated with the software G*power. G*power offers a priori analysis to offer a suggested sample size, which is computed as a function of user-specified values for the required significance level α, the statistical power 1-β, and the population effect size (Faul et al., 2009; Faul et al., 2007). From the analysis of literature, a suggested sample size of 192 was estimated using G*power with the usual values (i.e., statistical test: one-way ANOVA; effect size f = 0.25; alpha error probability = 0.01; power = 0.8; number of groups = 2). The effect size f and power value were conventional values to calculate the required sample size (Cohen, 1992). It is worth mentioning that when a less strict α error probability (0.1) was used, the suggested sample size was even smaller. The G*power software suggested that 102 observations were enough. Our sample size (256) surpassed the suggested sample size. The number of respondents in each group was balanced because unbalanced data could be problematic when estimating variance components and other parameters

(see Deutskens et al., 2006). Second, respondents were randomly assigned a task to make an online purchase (the stimuli can be seen in Appendix 2). 128 respondents in one group were exposed to an online shopping scenario with a PRN, while the respondents in the other group were not. The other stimuli were identical between the groups. Third, respondents were asked to intuitively score each item and answer all questions. Last, all respondents were rewarded with a sum of about 5 CNY (about 0.70 USD). 60.9% of respondents were female. 27.7% were aged 18–25 years, 25.8% aged 26–30 years, 38.7% aged 31–40 years, 6.6% aged 41–50 years, and 1.2% were older than 50 years. The gender and age ratio was consistent with the ratio reported in a recent online Chinese shopper research (Yan et al., 2019).

5.3.3.1.2 Experimental Material

As we wanted to study returns caused by product appearance mismatches, a scenario fitting this purpose needed to be created. Color is a common aesthetic stimulus and plays a crucial role in influencing consumers' purchase decisions (Nitse et al., 2004; Parker et al., 2009). 85% of consumers view color as a primary reason for why they purchase a particular item (Kissmetrics, 2016). In contrast to mismatches related to other visual, aesthetic product attributes, color is easier to manipulate under laboratory conditions. Product color mismatches are a common reason for consumer returns (Tay, 2017). They can also be caused by seller opportunism (retouching product pictures by making them more colorful) and technical factors (e.g., display settings, color palette) related to the display of devices (Nitse et al., 2004; Parker et al., 2009). According to a survey, among respondents who made a purchase online, 13.8% returned a product that was delivered in a color varying from what was expected (Parker et al., 2009); 72% reported that they would return a product with color mismatches (Parker et al., 2009). In practice, color discrepancy plays a crucial role in e-vendors' return policies, and returns for products with color discrepancy are permitted by e-vendors who value consumer satisfaction[2]. A convenience sample (N = 40) of Chinese online shoppers was used to pretest our experimental design. 67.5% of respondents stated that they would return products due to color discrepancy issues. Moreover, 82.5% of respondents stated that they would pay attention to e-vendors' risk notices on color discrepancy issues when shopping online.

Apparel products are frequently returned by shoppers and have been used in prior experiment-based, return-related research (see Dailey & Ülkü, 2018). Also,

apparel products are often associated with color discrepancy issues (Nitse et al., 2004; Parker et al., 2009). Hence, a unisex blue jacket was adapted as the experimental product. This product was selected to avoid potential bias caused by gender. The product brand, Members Only, offers this jacket for both male and female. However, the brand name was erased in the experimental pictures to avoid bias caused by the brand. The original product price and an e-vendor's product picture were used in the experiment.

Realistic stimuli are plausible in experimental research in order to arouse respondents' true responses. We adapted a realistic PRN to our study. Respondents in the experiment group saw that the e-seller informed them that the actual jacket color could vary from what they saw in the product picture. It said: "The color of the actual item may vary from our product picture (e.g., different computer screens and different monitor settings could cause color discrepancy), thanks for your understanding".

5.3.3.1.3 Measures

All scales were adapted from validated scales used by prior research. The details are presented in Appendix 3.

5.3.3.2. Results

5.3.3.2.1 Scale Reliability

Two variables' Cronbach's α were greater than 0.8 (see Table 5.1), thus displaying a satisfactory reliability. As ANOVA works with one-item variables, we replaced multi-item variables with one-item variables by calculating the mean value of item scores. As the presence of a PRN was clearly displayed in the experimental material, this experimental factor did not, therefore, involve any subjective evaluation; the manipulation check was not necessary in this case.

Table 5.1 Cronbach's α of constructs in study 1.

Empty Cell	**Cronbach's α**
Purchase intention	0.957
Skepticism	0.961

5.3.3.2.2 Hypotheses Testing

No significant effect of PRN on consumer skepticism was found ($F = 0.787$, $p = 0.376$). In the presence (vs. absence) of PRN, consumers showed a similar moderate skepticism ($M_{no\ notice} = 4.254$, $M_{notice} = 4.455$). H1 was rejected. No significant effect of PRN on purchase intention was found either ($F = 0.572$, $p = 0.45$); in the presence (vs. absence) of PRN, consumers showed similar purchase intentions ($M_{no\ notice} = 3.396$, $M_{notice} = 3.565$). H2 was rejected, too.

5.4 Post-purchase effects of Purchase-risk Notices

5.4.1 Research Overview

The importance of Study 1 lies in finding different effects of PRNs in the pre-purchase stage. Previous studies related to preemptive risk communication found that risk communication can discourage consumers from buying (Herbst et al., 2011; Hüttl-Maack et al., 2019). In contrast, no significant effect of a PRN on purchase intention was found in Study 1. Study 1 generates a new insight into the relationship between preemptive risk communication and purchase intention: the effect of a PRN on purchase intention was not strong as expected. Additionally, previous literature indicated that preemptive risk communication could ultimately undermine consumer trust (Petrescu et al., 2019). Consumers would be defensive and skeptical about e-vendors' commercial content when exposed to non-genuine commercials (Xie, 2014). However, no significant effect of a PRN on consumer skepticism was found. In brief, Study 1 contributes new insights that are different from existing knowledge.

As previously mentioned, how new return-related measures are integrated into different consumption stages remains to be explored in academic research (Robertson et al., 2020). Return-avoidance research should not just pay attention to consumers' purchase intention but also their return-related responses when return-avoidance measures are introduced. Hence, Study 1 merely examined the effect of a PRN on consumer skepticism and purchase intention, which is not enough to holistically assess the use of PRNs in an ecommerce returns context.

Different from Study 1, Study 2 examined the effects of PRNs in the post-purchase stage, which help us further understand how PRNs influence consumers. Specifically, on the one hand, the effects of PRNs on a different set of dependent variables (e.g., return intention, consumer tolerance, dissatisfaction) were examined. On the other hand, a different consumption stage (consumers received the product but

found that the product they received did not match what they saw online) in the consumer journey was studied. Focusing on new dependent variables and a later consumption stage, Study 2 examined the other effects of PRNs and thus better served the research purpose. For example, Study 2 examined whether the presence of a PRN is related to consumers' lower return intention. This relationship was not examined in Study 1.

First, based on our research purpose, we needed to examine the extent to which consumers' return intentions are dampened by the issuing of a PRN. Return intention indicates the likelihood that a buyer will return a specific product (Lee & Yi, 2019).

Second, consumer tolerance has been a key construct in e-retailing and Information System literature (Hoehle et al., 2018; Jiang, 2003; Nah, 2004; Pandey et al., 2019). Due to the virtual characteristics of the computer-mediated environment and seller opportunism, it is common to see small mismatches between a product's online appearance and its actual appearance. Therefore, consumers' tolerance toward a product mismatch is crucial because this variable can indicate the extent to which consumers are tolerant of the variance (Zeithaml et al., 1993). Moreover, consumer tolerance can help firms sidestep the negative consequences (e.g., loss of market share, firm profitability) of ecommerce failure (Trianasari et al., 2018; Yi & Gong, 2013) because consumers who are more tolerant of product offerings would be more easily pleased with firms (Grace, 2005). and would put up with minor annoyances or defects (Kim & Jang, 2014).

Third, it is crucial for marketers to discern why buyers might regret their purchase decision (Lee & Cotte, 2009) because regret is widely associated with shopping experience, satisfaction, and loyalty (Bui et al., 2011; Lee & Cotte, 2009). From a service perspective, it is critical for ecommerce firms to minimize online returns and any negative effects on consumers. However, not enough attention has been paid to this aspect (Zhou et al., 2018).

Lastly, consumer satisfaction and repurchase intent are the cornerstones of high sales performance, long-term customer relationships, and ecommerce sustainability (Sparks & Fredline, 2007; Wang et al., 2018). Return-avoidance researchers need to consider the cost efficiency of return-avoidance measures as well as their negative impact on consumers' product satisfaction and repurchase intention (Daugherty et al., 2019; Röllecke et al., 2018). As we set a research context in which

buyers eventually receive a product with mismatches, using “dissatisfaction” for this study was better than “satisfaction” because consumers assume that what they order online is what they see, so they would not be satisfied with any mismatches. Therefore, it was more suitable to focus solely on how consumers show different levels of dissatisfaction.

Based on above discussion, online consumers could display different responses in the post-purchase stage having received a product with mismatches. It is interesting to examine whether PRNs could influence these aspects or not. For example, on the basis of the Confirmation/Disconfirmation (C/D) model (Oliver, 1980), it can be questioned whether PRNs reduce consumers’ dissatisfaction and decrease their return intention. A graphical presentation of the hypotheses of Study 2 is shown in Fig. 5.2. In the next section, we develop hypotheses related to the effects of PRN in the post-purchase stage. In particular, the effects of PRN on return intention, mismatch tolerance, product dissatisfaction, purchasing regret, and repurchase intention are examined.

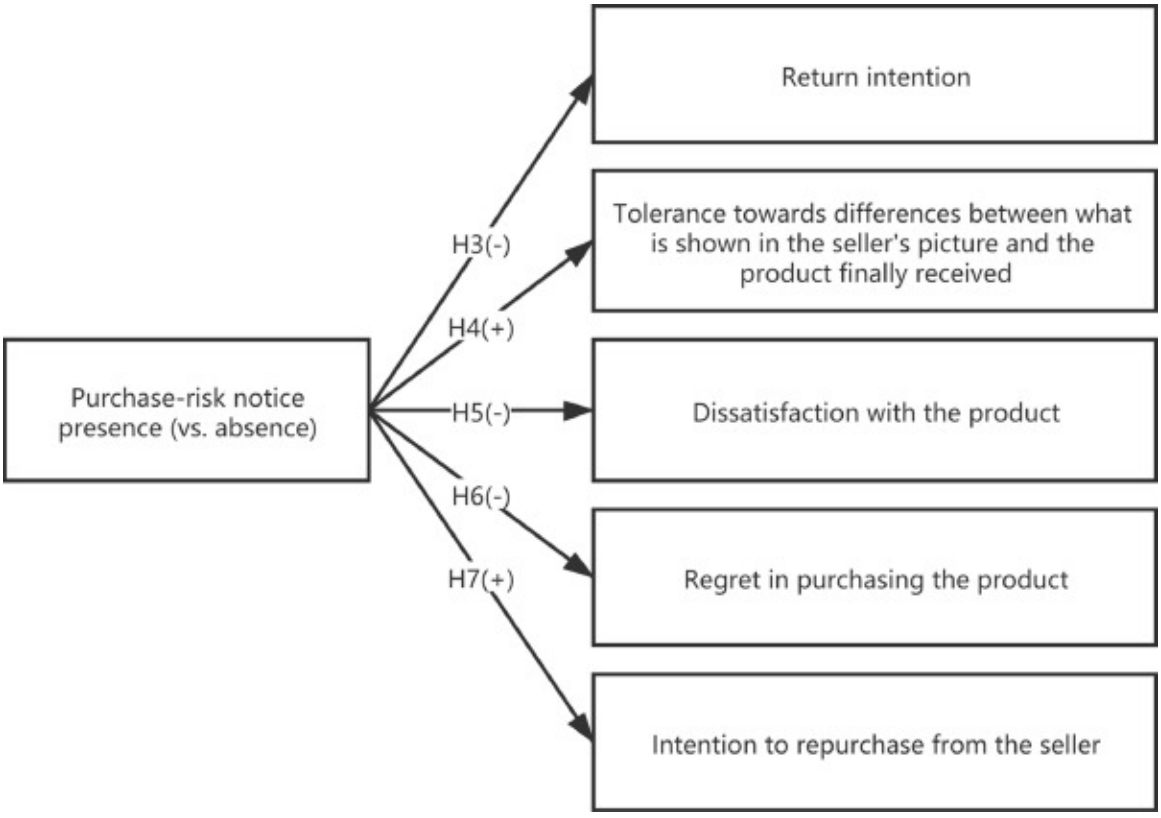

Fig. 5.2 Hypotheses of study 2.

5.4.2. Hypotheses

5.4.2.1 Return Intention

In this research, it refers to the following scenario: a buyer eventually buys a product but finds that its appearance varies from its online image on the website and is weighing up whether to return it or not. Although risk communication (e.g., using PRNs) can arouse consumers' risk perceptions (Sweeny & Dillard, 2014), it does not mean that consumers will absolutely decide against buying under risk (Min & Cunha Jr, 2019) because purchases could be returned later. The effect of PRNs on return intention can be better understood in the Confirmation/Disconfirmation (C/D) model (Oliver, 1980); e.g., a product will elicit a buyer's disconfirmation when it cannot meet her prior expectation. In ecommerce settings, a buyer will show a disconfirmation-based behavior – i.e., returning the purchased product – when the product received does not match her expectation (Pei & Paswan, 2018). When a PRN is issued, the buyer may lower her expectation because she would be warned beforehand about possible mismatches, so she would be less likely to manifest a return behavior. Recent research has also found that wider expectation gaps between what is presented online and the actual product can increase consumers' return intentions (Zhou et al., 2018), whereas preemptive information communication can lower consumers' optimistic expectations because it puts consumers on notice of the downside of a product beforehand (Cranage et al., 2006). Therefore,

H3

In the presence (vs. absence) of a PRN, consumers in the post-purchase stage will show fewer (vs. more) return intentions, once they have checked that the delivered product does not match the seller's product picture.

5.4.2.2 Tolerance Toward Product Mismatch and Product Dissatisfaction

Tolerance refers to a consumer's propensity to patience when a purchased product does not meet the consumer's prior expectation (Yi & Gong, 2013). Product dissatisfaction is a consumer's negative affective response toward an overall assessment of "perceived discrepancy between prior expectations and the actual performance of a product" (Walsh & Brylla, 2017, p. 331). These two constructs are different yet interrelated (Wu & Wang, 2012). They reflect differing aspects of a consumer's reactions when the purchased product fails to meet expectations. The

theory of consumer tolerance holds that consumers have two expectations: their expectations of desired product performance (hope) and their minimum expectation of adequate product performance (should) (Zeithaml et al., 1993). The former is comparatively stable and does not often vary (Zeithaml et al., 1993). However, the latter is comparatively unstable and can vary in different situations (Ho et al., 2015). Consumer tolerance and dissatisfaction are affected by how a consumer's expectation of adequate product performance varies (Trianasari et al., 2018). If a consumer had been informed of an underlying mismatch risk by a PRN and yet still decided to purchase the product with the accompanying risk, she would considerably lower her minimum expectation (Van Dijk et al., 2003) on receiving a product displayed in the seller's product picture; this would render her more tolerant than the consumer who had not been informed by a PRN. Preemptive risk communication also helps to improve consumer tolerance toward mismatches and reduce dissatisfaction, as it diminishes the disconfirmation of prior expectations and loss perceptions (Furnier, 2017). Then,

H4

In the presence (vs. absence) of a PRN, consumers in the post-purchase stage will show a higher (vs. lower) level of tolerance toward differences between what is shown in the seller's picture and the product finally received.

H5

In the presence (vs. absence) of a PRN, consumers in the post-purchase stage will show a lower (vs. higher) level of dissatisfaction with the product, once they have checked that the delivered product does not match the seller's product picture.

5.4.2.3 Product Purchasing Regret

Consumers feel dissatisfied when the merchandise delivered fails to fulfill previous expectations, whereas consumer regret refers to a negative emotion following a bad shopping experience (Lee, J. Cotte, 2009); it occurs when a consumer is aware that she would have been better off making a different purchase decision (i.e., not to have bought it) previously (Suwelack et al., 2011). This regret is caused by a significant change in product utility from the moment of purchase to a particular subsequent moment (see Lee, J. Cotte, 2009). In our case, high perceived product utility may

derive from e-sellers' appealing product pictures, whereas consumers would perceive low product utility after receiving the product due to mismatches between what they saw online and what they actually received. Attribution theory can be used to explain the effect of PRNs on consumer regret. This theory implies that individuals would create a perception of causality and allocate responsibility for a negative outcome; the allocation of responsibility ultimately influences subsequent actions (Weiner, 1972). Recent studies have found that consumer regret is associated with responsibility attributions (Lim et al., 2017). When a PRN is absent, consumers are not aware of any potential product mismatch; if they received a product with mismatches, they would feel more regret because they could deem the e-seller responsible for the failure (Hüttl-Maack et al., 2019). Also, consumers who receive products with mismatches could regard the absence of a PRN before purchase as a sign of the e-seller's deceitful behavior (Hüttl-Maack et al., 2019) and would regret having purchased the product. Contrarily, when a PRN is present, consumers may feel less regret because the e-seller had revealed potential risks beforehand. Using PRNs creates a sense of consumer empowerment and a shared responsibility structure in which consumers also take responsibility in the purchase of a product with a potential mismatch (Cranage et al., 2006).

H6

In the presence (vs. absence) of a PRN, consumers in the post-purchase stage will feel less (vs. more) regret in purchasing the product, once they have checked that the delivered product does not match the seller's product picture.

5.4.2.4 Intention to Repurchase From the E-seller

Repurchase intention refers to the likelihood that a consumer will continue to purchase from the e-seller in the future (Shin et al., 2013). Prior research indicates that using precautionary notices can generate consumer loyalty because such notices represent a firm's openness to acknowledging the downside of a product (Cranage et al., 2006). Besides, issuing a notice represents an action taken by the firm to maintain its reputation (Hüttl-Maack et al., 2019). It is arbitrary to conclude that doing so reveals potential risk and dampens firm performance because this action can heighten consumers' trust in the firm and ultimately lead to repurchases (Hüttl-Maack et al., 2019). However, when the notice is absent, consumers may be unaware that the actual

product does not resemble its online appearance or that the appealing product pictures that the e-seller uses could be deceptive. Thus, when the ordered product is received and the mismatch is obvious, consumers would then distrust the e-seller and avoid future repurchases, compared with a situation in which the e-seller had informed them beforehand about the potential mismatch.

H7

In the presence (vs. absence) of a PRN, consumers in the post-purchase stage will show more (vs. fewer) intentions to repurchase from the seller, once they have checked that the delivered product does not match the seller's product picture.

5.4.3 Study 2

5.4.3.1 Method

5.4.3.1.1 Respondents and Procedure

A one-factor (purchase-risk notice: yes vs. no) between-subject scenario experiment was conducted using online panel data. In line with Study 1, we followed the same procedure to conduct this experiment. However, we recruited different respondents and showed them different scenarios. In the experiment, all respondents went through a shopping process. They were filtered for a shopping scenario in which an e-seller displayed a product picture related to a unisex jacket. They then bought the jacket and received the product they had ordered but found that it did not match the seller's product picture: the jacket color varied from the seller's product picture. The only nuance between the experiment group and the reference group is that the PRN was only shown beforehand to the experiment group, so the mismatch risk was preemptively communicated only to respondents from the experiment group. Eventually, respondents had to decide whether to return the jacket or not based on the information provided to them. A sample of 208 individuals was collected. The number of respondents in each group (group with PRN: 104; group with no PRN: 104) was balanced. 65.4% of respondents were female; 1.4% were under 18 years of age, 33.7% were aged 18–25 years, 29.3% aged 26–30 years, 29.3% aged 31–40 years, 4.8% aged 41–50 years, and 1.5% older than 50 years.

5.4.3.1.2 Experimental Material

The treatment content is shown in Appendix 2. Unlike in Study 1, the scenarios in Study 2 needed to include a delivered product that did not match the seller's product picture. We used a product picture of the same jacket shared by a previous buyer (in order to avoid misunderstandings in which this buyer might be confused with the respondents, we named this person Buyer P) to represent the final product received by the buyers (i.e., the study respondents). As Buyer P's product picture was congruent with the seller's product picture, Buyer P's product picture color only needed to be slightly modified. Photo retouching techniques were used to vary the product color in the blue family (the new color could not differ illogically, say, by using red, from the original blue in the seller's product picture, or respondents would think the seller had shipped the wrong item by mistake). Fifteen bluer versions of the product were generated using Photoshop software. We selected a realistic option from those available. In order to test this selection, a convenience sample ($N = 40$) of online shoppers was recruited and randomly assigned to a task to indicate the color similarity between two pairs of pictures. Respondents in one group ($n = 20$) were required to indicate the color similarity between the seller's product picture and Buyer P's original product picture. Respondents in another group ($n = 20$) were required to indicate the color similarity between the seller's product picture and the retouched product picture. A 7-point Likert question, "to what extent do you think the color of the jacket in the seller's product picture and Buyer P's product picture is similar? (1: not similar at all - 7: very similar)" was used to indicate color similarity. We found that respondents perceived the product color we retouched to be less similar to the product color in the seller's product picture ($M_{retouched} = 3.25$, $M_{no\ retouch} = 4.85$, $p < 0.01$, t-test). In other words, the retouched product picture could be deemed as not matching the seller's product picture.

All respondents were told that they had bought and received a jacket with a color mismatch. It said: "eventually, you bought it and you received the jacket you ordered. You observe that the color of the jacket you have received is different (a darker blue) to the one shown in the seller's product picture."

5.4.3.1.3 Measures

All scales were adapted from validated scales used by prior research. The details are provided in Appendix 3.

5.4.3.2 Results

5.4.3.2.1. Scale Reliability

All variables' Cronbach's α were greater than 0.8 (see Table 5.2), demonstrating a satisfactory reliability. As ANOVA works with one-item variables, we replaced multi-item variables with a one-item variable by calculating the mean value of all item scores.

Table 5.2 Cronbach's α of constructs in study 2.

Empty Cell	**Cronbach's α**
Tolerance	0.925
Return intention	0.915
Dissatisfaction	0.887
Repurchase intention	0.931
Regret	0.835

5.4.3.2.2 Hypotheses Testing

A significant effect of PRN on return intention was found ($F = 7.134$, $p = 0.008 < 0.01$). In the presence (vs. absence) of PRN, consumers in the post-purchase stage showed fewer (vs. more) return intentions ($M_{no\ notice} = 4.478$, $M_{notice} = 3.856$). H3 was supported. A significant effect of PRN on tolerance was found ($F = 10.157$, $p = 0.002 < 0.01$). In the presence (vs. absence) of PRN, consumers in the post-purchase stage showed a higher (vs. lower) level of tolerance toward a product mismatch ($M_{no\ notice} = 4.017$, $M_{notice} = 4.654$). H4 was supported, too. An effect of PRN on dissatisfaction was found ($F = 3.264$, $p = 0.072 < 0.1$). In the presence (vs. absence) of PRN, consumers in the post-purchase stage showed a lower (vs. higher) level of dissatisfaction with the product ($M_{no\ notice} = 4.795$, $M_{notice} = 4.442$). H5 was supported at the 0.1 level. An effect of PRN on regret was found ($F = 3.305$, $p = 0.071 < 0.1$). In the presence (vs. absence) of PRN, consumers in the post-purchase stage felt less (vs. more) regret in purchasing the product ($M_{no\ notice} = 4.344$, $M_{notice} = 4.029$). H6 was supported at the 0.1 level, too. As the significance levels of

0.1, 0.05, and 0.01 are common criteria for rejecting Type I errors (Lehmann, 1958), the 0.1 significance level was used in this case. However, the two hypotheses (H5: PRN → dissatisfaction, p-value = 0.072 and H6: PRN → regret, p-value = 0.071) were not supported when a stricter significance level, e.g., 0.01, was used. Hence, the result was not as conclusive when a stricter significance level was adopted.

A significant effect of PRN on repurchase intention was found ($F = 9.208$, $p = 0.003 < 0.01$). In the presence (vs. absence) of PRN, consumers in the post-purchase stage showed more (vs. fewer) intentions to repurchase from the seller ($M_{no\ notice} = 2.811$, $M_{notice} = 3.446$). H7 was also supported. The results of the hypotheses' testing are provided in Table 5.3. To summarize, varying effects of PRN were found: using PRN can most significantly influence repurchase intention and consumer tolerance; its effects on purchase intention and consumer skepticism were rather weak.

Table 5.3 The results of hypotheses' testing.

Hypothesis	**Exp. group**	**Ref. group**	**F-value**	**p-value**	**Result**
H1: PRN → skepticism$^{n.s.}$	4.455	4.254	0.787	0.376	Reject
H2: PRN → purchase$^{n.s.}$	3.565	3.396	0.572	0.450	Reject
H3: PRN → return**	3.856	4.478	7.134	0.008	Support
H4: PRN → tolerance**	4.654	4.017	10.157	0.002	Support
H5: PRN → dissatisfaction*	4.442	4.795	3.264	0.072	Support
H6: PRN → regret*	4.029	4.344	3.305	0.071	Support
H7: PRN → repurchase**	3.446	2.811	9.208	0.003	Support

∗ Significance at $p < 0.1$.

∗∗ Significance at $p < 0.01$.

5.5 Discussion

5.5.1 Theoretical Discussion

Our finding can generate new insights into the relationship between return intention and purchase intention. In the current body of knowledge on return management, common ways of reducing returns include imposing restrictions on making returns (see Janakiraman et al., 2016), which causes an unwanted side effect: reduction of consumers' purchase intentions (Oghazi et al., 2018; Pei et al., 2014). However, we have found that using PRNs can effectively reduce online returns caused by mismatches, but without inhibiting consumers from making purchases. Previous studies have studied the effect of warnings- or disclaimers-related risk communication on purchase intention (see Herbst et al., 2011; Hüttl-Maack et al., 2019). Warnings about potential product failure can significantly inhibit consumers from buying (Hüttl-Maack et al., 2019). In contrast, using PRNs does not aim to warn buyers about potential product failure nor exempt e-sellers from offering free returns (unconditional free returns are available in all scenarios); it plays an informative role to help consumers make a more deliberative purchase decision. This helps explain why the effect of PRNs on purchase intention was weak and insignificant. Interestingly, consumers even showed higher purchase intentions when the PRN was present. Hüttl-Maack et al. (2019) offered an explanation for this phenomenon. Displaying cautionary information can reveal the seller's non-self-serving motive, which is a facilitator for consumers to consider purchasing (Hüttl-Maack et al., 2019).

Prior literature indicated that cautionary notices on the genuineness of commercial content could ultimately undermine consumer trust (Petrescu et al., 2019). Consumers encountering non-genuine commercials would activate their defensive mindset and become skeptical about e-vendors' commercial messages (Xie, 2014). In line with prior literature, we have found that consumers became more skeptical toward the seller's product picture when the PRN was present, but the effect of the PRN on consumer skepticism was rather weak and insignificant. It is probably due to the fact that the use of the PRN informing of mismatches related to a sole product attribution, which was not enough to arouse greater consumer skepticism of the genuineness of the seller's product picture.

Consumer tolerance has been a key construct in e-retailing and IS literature, but prior studies have focused on different aspects of tolerance in comparison to our study. For example, Jiang (2003) studied consumer tolerance for differences between what a consumer wants and what the marketplace offers, and how this tolerance

influences intention to seek a better deal. Nah (2004) researched users' tolerable waiting time for information retrieval tasks on the Web. Hoehle et al. (2018) concluded that there were five forms of tolerance in omni-channel retailing: tolerance of an unfair process, tolerance of changes in the checkout process, tolerance of inconvenience, tolerance of mistrust, and tolerance of privacy intrusion. Pandey et al. (2019) shed light on consumer tolerance of paying an excess amount in e-retailing. Our study has focused on consumer tolerance toward mismatches in product appearance. Such tolerance can offer a buffer for "small defects" or small mismatches in ecommerce, which has been overlooked by current literature. We have found that the effect of PRNs on tolerance is strongest: consumers encountering a PRN beforehand would become more tolerant toward mismatches. This finding is meaningful for ecommerce research. Prior research has sought to minimize uncertainty in ecommerce (e.g., Dimoka et al., 2012; Hong & Pavlou, 2014; Weathers et al., 2007), which could be a costly and hard-to-accomplish way to align actual product utility with consumers' expectation (Van Dijk et al., 2003). We have found that using a simple PRN can effectively enhance consumer tolerance without damaging sales.

Research has made initial attempts to analyze the effect of preemptive risk communication on consumer dissatisfaction. In a service setting, a non-significant effect of preemptive risk communication on consumer disappointment was found (Cranage et al., 2006). However, the C/D model sustains that dissatisfaction occurs when outcomes do not match expectations (Oliver, 1980). Preemptive risk communication aims to create a fear that a consumer's unrealistic expectation could surpass the desired outcome; this fear means that consumer dissatisfaction could be weakened when consumers intentionally lower their expectations of obtaining the desired outcome (Van Dijk et al., 2003). Our finding has corroborated this influential mechanism. Dissatisfaction was alleviated when expectancy-lowering communication was made beforehand. Nevertheless, our finding is interesting for expectancy-dissatisfaction research: prior literature revealed the influential mechanism of expectancy on dissatisfaction (see Oliver, 1980; Pei & Paswan, 2018; Van Dijk et al., 2003), but it did not indicate the extent to which expectancy-lowering communication can alleviate consumers' post-purchase dissatisfaction with a product in an ecommerce context. We have found that, even when a PRN was used beforehand, consumer dissatisfaction cannot be effectively eliminated, and the effect of PRNs on

dissatisfaction was relatively weak compared to their effect on tolerance and return intention. Hence, expectancy-lowering communication cannot completely eliminate dissatisfaction in all cases.

Another theoretical contribution of this study is the new connection found between PRNs and consumer regret. Prior literature has widely acknowledged the importance of regret and regret reduction (see Bui et al., 2011; Lee & Cotte, 2009; Suwelack et al., 2011), but no study has studied the effect of preemptive risk communication on regret. From an attribution theory perspective, it was found that preemptive risk communication can reduce consumer regret because it creates a sense of consumer empowerment and a shared responsibility structure (Cranage et al., 2006). Similar to the effect of PRNs on dissatisfaction, consumers showed less regret when a PRN was present. Also, this regret cannot be effectively eliminated by issuing a PRN beforehand.

Our research enriches previous research on the effect of preemptive risk communication on repurchase intention. In service settings, research revealed that preemptive risk communication positively influences consumer loyalty (Cranage et al., 2006). In physical retailing settings, it has been found that consumers displayed higher intentions to repurchase from a seller when pre-purchase warnings were present (Hüttl-Maack et al., 2019). On the one hand, online purchasing is different from service consumption. Service is intangible, while products in ecommerce settings can be tangible; ecommerce is a remote shopping mode, and there is a natural physical separation between sellers and buyers, while the purchase of a service can be completed via face-to-face communication with service providers. On the other hand, ecommerce is distinct from physical retailing. The consumer can easily exit a relationship with an e-seller and switch to other e-sellers because there is a vast array of e-sellers on internet (Pei et al., 2014). The nuances in research settings could affect the "risk communication → repurchase intention" relationship established in previous studies. However, we have found that the positive effect of preemptive risk communication on repurchase intention was equally valid in an ecommerce context.

To summarize, in contrast to previous studies, we have focused on studying the direct effects of preemptive risk communication on a set of crucial variables. Regarding the hypothesized relationships that have been examined by prior research, some of our results are different. Specifically, in comparison to the negative relationship (preemptive risk communication → purchase intention) that was

documented in prior literature (Hüttl-Maack et al., 2019, a non-significant effect of preemptive risk communication on purchase intention was found in our study. In comparison to the non-significant relationship (preemptive risk communication → disappointment) that was reported in prior literature (Cranage et al., 2006), a significant effect of preemptive risk communication on dissatisfaction was found in our study. More specific details on how our study is different from previous studies are provided in Appendix 1. These differences add new perspectives to the relationships that were established in the previous literature. Furthermore, the study has discovered, in an ecommerce return context, the effects of preemptive risk communication on return intention, mismatch tolerance, and regret, which, to the best of our knowledge, have not been examined by relevant existing research until now. These discovered relationships help add new insights to the existing body of knowledge concerning ecommerce returns management. Apart from using restrictive return policies to reduce returns that have been documented in the existing return management literature (see Janakiraman et al., 2016), preemptive risk communication is also an effective approach to avoid ecommerce returns, reduce consumer regret, and heighten consumer tolerance with product appearance mismatches.

5.5.2. Managerial Implications

Considering the benefits of PRNs, e-sellers can use them to disclose potential risk related to product mismatches. We have found that using PRNs can effectively reduce returns caused by product mismatches. It can increase consumer tolerance and repurchase intention as well as alleviate consumer dissatisfaction and regret. Most interestingly, e-sellers can confidently use PRNs because it does not necessarily lead to fewer purchases and greater consumer skepticism. Prior research implies that using rewards (i.e., offering incentives to keep a purchased product) can avoid online returns and damage to sales (Gelbrich et al., 2017), but this practice also incurs new costs for e-sellers such as offering free gifts or free shipment for next orders of those who do not return. On the basis of our research findings, PRNs can avoid online returns and damage to sales; the difference is that using PRNs will not incur such costs for e-sellers. Considering all these benefits of PRNs, the value of PRNs has been noticed by e-sellers. For example, Realme Official Store, one of the top cellphone brands on Aliexpress.com, offers with honesty several possible mismatches regarding its Realme 7 cellphone such as its charging speed and download speed. The mismatch

disclosure strategy did not seem to be a significant matter, considering that the cellphone product hit the highest sales in Aliexpress.com's cellphone category. In another example, Vefadisa Official Store, a female-apparel e-seller on Aliexpress.com, incorporates a PRN on minor color and size mismatches on its product webpage and offers an unrestrictive free-return option for 15 days. This practice does not undermine this e-seller's ecommerce business: it obtained 98.2% positive feedback[3]. These two real examples reflect the viability of our research findings in today's ecommerce practice. On the one hand, using PRNs does not hinder consumers from buying. On the other hand, when a free-return policy is applied, using PRNs engenders positive consumer responses.

In practice, PRNs are often misused. Many e-sellers use a notice to disclose purchase risks but do not explicitly reveal how they manage the returns caused by the reasons mentioned in the notice. That could cause consumer misunderstandings. For example, e-sellers can deny returns caused by the mismatches mentioned in the notice because they assert that the risks had been clarified beforehand; consumers, meanwhile, could think that the notice is just a piece of cautionary information to assist them in their purchase decision-making and that mismatched products can be returned. This misunderstanding could lead to disputes between sellers and buyers. Therefore, PRNs need to be closely aligned to e-sellers' return policies. We suggest that e-sellers display PRNs in the product page along with other product details. Accordingly, the return policy should clearly indicate whether returns caused by mismatches mentioned in the PRN can be returned or not. A plausible way to use PRNs is to align free returns with PRNs, akin to our study.

In practice, many PRNs are too small, too wordy, and complex to be placed on product webpages. Due to the benefits generated by PRNs, e-sellers should pay closer attention when displaying PRNs on product webpages. Highlights or bold fonts can be used to increase their prominence on the site. PRNs should be condensed and displayed in a clear, concise, and attractive format. They can be placed exactly where required to warn of possible mismatches. For example, if product color accuracy cannot be guaranteed online, PRNs associated with color mismatches should be placed near the product pictures that might well give rise to color inaccuracy issues.

5.6 Limitations and Future Research

For the sake of experimental design, this study focuses on a sole product attribute (color). Future studies can focus on other product attributes, which can be evaluated online, such as aesthetic (e.g., attractiveness) or utilitarian attributes (e.g., size). Also, a unisex jacket cannot represent all product categories. Future research can add value by researching other product categories. Consumers' reactions to mismatches in different product categories may be different. A clothing product was chosen in our experiment because this product category has high return rates (Djordjevic, 2021) and has been adopted in prior experiment-based, return-related studies (see Dailey & Ülkü, 2018); other categories, such as consumer electronics, were also returned by online shoppers (Djordjevic, 2021). Consumers who purchase products from different categories can return them for performance mismatches (Hong & Pavlou, 2014). For example, a smart watch may not seem as smart as what is presented in promotional videos on ecommerce websites. Future research can examine the effect of preemptive risk communication on combating ecommerce returns in different product categories. Another weakness of this study is that we did not consider other formats of visualization techniques, such as videos, stereoscopic 3D pictures, and AR/VR. For example, AR is more accurate in ensuring that what is offered is what the consumer wants (Dacko, 2017). This format exceeds the quality of regular pictures with regard to the online presentation of products. It is expected that when these visualization features are available for shoppers, mismatches and ecommerce returns will decrease (Murdock, 2020). Further research on this topic would be interesting, especially regarding how consumers react when their purchase does not match product presentation through other digital formats.

We argue that returns caused by uncertainty in ecommerce can be avoided by preemptive risk communication, but this communication cannot totally alleviate consumer dissatisfaction and regret. Future studies can delve deeper into this line of research and explore other recovery strategies.

Consumers who have bought products can make online reviews about actual product appearance and performance. Online reviews provide product information for consumers before purchase (Filieri et al., 2018) and reduce product uncertainty (Sahoo et al., 2018). Research has shown that online reviews can create high consumer expectancy and affect product return behaviors (Li et al., 2021). Therefore, online reviews are a possible approach to reducing consumer disappointment with product mismatches that have been revealed in online reviews. Future research can

study the interaction effect between sellers' purchase-risk notices and online product reviews on consumers' return behaviors.

Finally, Study 2 uses a one-time online survey to examine postpurchase effects, where participants were asked to speculate about their level of regret, intention to repurchase, and return intention, among others, in the experimental hypothetical situation. We acknowledge that using an experimental scenario closer to reality and working with actual post purchase opinions in an experimental online shopping scenario established for that purpose would have been more accurate. Although more complex and costly, a future study could develop Study 2 with a real post purchase scenario to better validate our results and even extend them with new variables.

[1] Two cases can be seen at (Retrieval Date: January 5, 2020): https://www.aliexpress.com/item/32915663753.html (apparel); https://www.aliexpress.com/item/32960327041.html (electronics).

[2] A case of an e-vendor who accepts returns with color discrepancy can be seen at (Retrieval Date: July 5, 2021) https://www.tuckerglassanddesign.com/return-policy.

[3] Data source (Retrieval Date: July 5, 2021): https://www.aliexpress.com/item/1005002206212969.html?spm=a2g0o.store_pc_home.slider_1149422700.1.

CHAPTER VI Conclusions, Limitations and Recommendations

6.1 Conclusions

E-commerce develops rapidly and has become an important field of academic research (Abdulla et al., 2019; Tsagkias et al., 2021). It involves the use of electronic communication and digital information processing technology to carry out business transactions on the Internet (Xie & Wang, 2021). E-commerce provides customers with space-time flexibility, real-time interaction, and convenience, enabling global reach and personalized experience. Compared with traditional business, e-commerce could eliminate geographical restrictions (Al-Lami & Alnoor, 2021), reduce costs (Mofokeng, 2021), and provide opportunities for customized services (Bawack et al., 2022; Chandra et al., 2022; Zhang & Huang, 2022). The industry has shown strong global growth, with online retail sales reaching trillions of dollars, and further growth is expected in the coming years. However, the convenience of online shopping has resulted in lower consumer risk perception and higher product return rates (Walsh & Möhring, 2017; Yang et al., 2022). Now, the online return rate is significantly higher than that of physical stores, and the return rate of some categories is as high as 45%. Addressing online returns has become a focus of business practice and academic research aimed at reducing returns through return policy, information technology, quality control, and service optimization. While many measures have proven effective, challenges remain to be addressed. In order to solve the above problems, this thesis conducts two studies: one explores the role of return credits in online returns, and the other explores the role of purchase-risk notices in online returns.

(1) Return credit. Online returns may be related to various factors such as product quality, delivery delays, change of mind, and so on (Dopson, 2021). Of all the reasons for returns, satisfaction-related returns account for a large portion of online returns (Li & Choudhury, 2021). So, satisfaction-related returns deserve more academic attention. To address satisfaction-related returns, we designed a avoidance tool, namely return credit. The studies in this thesis related to return credit explore the outcomes of using different levels of return credit in online shopping. It was found that high credit amounts can help avoid satisfaction-related returns and have weaker side effects than low credit amounts. Additionally, consumers are more likely to keep unsatisfied purchases when there is a potential return penalty than when there are unlimited, always free returns. This finding could fill a research gap in the current literature, which pays less attention to mild punishment-oriented approaches to deter

satisfaction-related returns. Finally, this study provides new insights into the relationship between returns management policies and consumer satisfaction, emphasizing that consumer-friendly returns policies may be an effective strategy to enhance consumer loyalty and satisfaction.

(2) Purchase-risk notice. Among the reasons that lead to online returns, product fit uncertainty is a common reason for returns (Hong & Pavlou, 2014). Product fit uncertainty hurts customer satisfaction more than product quality uncertainty and leads to more returns (Ahsan & Rahman, 2021). In this thesis, the impact of purchase-risk notices (PRNs) in e-commerce returns management is explored through two experiments. Traditional approaches to returns management often limit returns, which can lead to a decrease in consumer's purchase intention. In contrast, the study found that the use of PRNs can effectively reduce online returns caused by mismatches without inhibiting consumers' purchase intention. In addition, PRNs have a weak effect on consumers' skepticism. The study also found that consumers who had received a PRN beforehand were more tolerant of mismatches. In addition, PRNs can reduce consumers' regret, but cannot completely eliminate dissatisfaction. The positive impact of pre-emptive risk communication on repurchase intentions is equally valid in the e-commerce environment. These findings provide new insights into the field of e-commerce returns management, suggesting that the PRN is an effective method to avoid online returns, reduce regret, and increase tolerance of mismatch.

6.2 Limitations of the Study

(1) Choosing Taobao as an experimental shopping platform may bring certain limitations to the research on return credits and purchase-risk notices. This may be related to the Taobao platform's own attributes, brand image, participants' previous shopping experience, etc.

First, Although Taobao is a well-known e-commerce shopping website in China, it does not represent all other shopping websites, such as Amazon, eBay, Zalando, etc. Each shopping site, even a global one, will have its own unique products, features or user groups. The uniqueness of each shopping platform may affect the judgments of experimental participants. Furthermore, it may affect the experimental results.

Second, due to the characteristics of Taobao and the influence of user behavior habits, the applicability of the research results to other shopping websites may have limitations. For example, one clear difference is the price sensitivity of Taobao customers. Taobao customers are generally accustomed to comparing prices and tracking discounts during the shopping process to find the best shopping opportunities. However, users of other shopping websites may have different shopping preferences and behavior patterns, and may have different levels of price sensitivity. Therefore, the price sensitivity characteristics of Taobao users may not necessarily apply to user groups of other shopping websites.

Third, Taobao users' previous experience on the Taobao platform may also affect the research results. For example, they may have had negative shopping or return experiences in the past, which may influence their response to return credits or purchase-risk notices. In the study, we selected participants who had shopping experience on Taobao in the past six months. However, participants were not surveyed in detail about their previous shopping or return experiences.

In summary, although Taobao is widely used in China, there are certain limitations to using Taobao as an experimental shopping platform. Of course, using other platforms may also face the same problem. We will explore how to avoid or mitigate the impact of these problems in future research directions.

(2) This study recruited experimental participants with Taobao shopping experience through a third-party data collection platform (Questionnaire Star, also known as Wen Juan Xing or WJX). Due to its online nature, this study recruited sufficient online participants within one week, thus saving time and cost. However, there are also many limitations to this approach that need to be avoided in future research designs.

First, in order to attract more online participants, our online experiment provides some monetary rewards. Participants who successfully complete the experiment can receive certain monetary rewards through the third-party data collection platform (Questionnaire Star). This may have attracted some people who participated in the experiment just for the reward. However, the motivations of experimental participants may affect the sample quality. In addition, third-party data collection platforms often have a large number of professional participants in their databases. These experienced professional participants may often participate in various online experiments, and they may predict the purpose of the study, thus

affecting the reliability of the experimental results. Finally, the data we collect through the third-party data collection platform (Questionnaire Star) mainly comes from China. There may be some limitations to the internationalization or diversity of the sample.

Second, this study involves consumers' post-purchase perceptions and behavioral intentions. In experimental research, in order to control variables, researchers usually design experimental scenarios and ask participants to speculate and answer relevant questions in the scenario. This experimental design simulates shopping scenarios in a simpler way and is helpful for comparing consumer reactions under different experimental conditions. In studies of return credits and purchase-risk notices, participants were asked to speculate on their intentions to return products (as well as other perceptions or intentions) in experimental situations. However, we acknowledge that experimental results would be more accurate using experimental scenarios that are closer to reality. By using an experimental design that more close reality, the responses of experimental participants can be better measured. Because the experimental design that is close to reality attempts to be conducted in as real an environment as possible to better simulate the actual behavior of consumers.

Therefore, due to the above considerations, future research can try to use more realistic experimental scenarios. Such a research design may deepen our research and draw more reliable conclusions. We will explore how to avoid or mitigate the impact of these problems in future research directions.

(3) Limitations related to experimental materials. Experimental materials can help us control experimental conditions, manipulate variables, and obtain data, etc., to gain insights into consumer perceptions, attitudes, behavioral intentions, etc. Therefore, experimental materials are crucial. In consumer behavior research, experimental materials are various stimuli, information, tasks, etc. used to present to experimental participants during the experiment. In the study of return credits and purchase-risk notices, we used certain experimental materials (including text and pictures, etc.). However, these experimental materials may also have certain limitations.

First, in the study of purchase-risk notices, we chose a piece of clothing (i.e., a jacket) as the experimental material, mainly because clothing is a category with a high return rate in online shopping. However, apparel products are not representative of all other product categories, as different product categories may elicit different responses

from consumers. Each product category has its own unique attributes, uses, and consumption characteristics, so consumers may have different perceptions or behavioral intentions when faced with purchasing decisions across different product categories. Although the return rate of clothing products is generally higher, this does not mean that customers will not return products in other categories. Different product categories have different product attributes, so consumers may have different return tendencies for products in different categories. In order to fully understand consumers' return reactions in different product categories, further research on multiple product categories and even comparative analysis is needed.

Second, for the purpose of experimental design, PRN-related studies only examined product attributes (i.e., color) and no other product attributes. This is another limitation related to the experimental materials in the study. In the experiment, we choose to focus on a specific variable (product attribute) and control other factors that may affect the results in order to more accurately study the impact of this variable on the experimental results. Specifically, our experimental material was a jacket, and the study was conducted by controlling color, a product attribute. Because, in many returns surveys related to the fashion industry, inconsistency between what consumers receive and what they see is a common reason for returns. However, there is more attributes to a product than just color. Other properties are worth exploring as well.

In short, experimental materials will also bring certain limitations, which are mainly reflected in the selection of product categories and the manipulation of product attributes.

6.3 Recommendations

The findings of this thesis provide contributions to business practice and academic research in terms of online returns avoidance. Based on two studies, this thesis provides two effective return avoidance methods for commercial practice: return credits and purchase-risk notices. This thesis also provides suggestions for future academic research to advance research on return avoidance.

6.3.1 Recommendations for E-retailers

Findings from two series of studies on online returns contribute to business practice. Through in-depth analysis of issues related to online returns, such as return rate, return reason, return process, etc., this thesis sets return avoidance as the research

focus and hopes to find effective, low-cost return avoidance methods with fewer side effects. Through an in-depth study of issues related to online returns and return avoidance, this thesis draws some conclusions that are valuable for business practice. These findings are as relevant in management as they are actionable. Specifically, the two tools (i.e., return credits and purchase-risk notices) can be implemented with relatively few resources. These conclusions can help companies better understand and deal with return issues, and take appropriate measures to reduce return rates.

(1) Research related to return credits demonstrates that the use of return credits can reduce satisfaction-related returns while also reducing negative outcomes (such as reducing repurchase and consumer churn). Also, high return credits have a similar effect on deterring returns, with fewer side effects than using low return credits. Therefore, e-retailers can reasonably increase the return amount to reduce the side effects of using the return amount and achieve the purpose of reducing returns. In addition, the successful use of returns credit requires a returns database to support it. On the one hand, e-retailers can use this database to understand the effect of using return credits (including data on returns and sales). On the other hand, e-retailers can use this database to determine a reasonable credit amount. E-tailers also need to consider displaying credit amounts for customers in the shopping system, which has the advantage of being able to remind customers of their remaining credit at any time. To prevent consumers from opening new accounts after using up their return credits, e-retailers could require consumers to create new accounts using their phone numbers. In conclusion, research related to returns credit provides an effective return avoidance tool for e-retailers. Not only is this tool effective in reducing online returns, but it also has fewer side effects.

(2) Research related to PRNs also provides many beneficial contributions to reducing online returns. Given the benefits of PRNs, e-retailers can use them to disclose potential risks associated with product mismatches. In this thesis, a series of studies related to PRNs finds that the use of PRNs can effectively reduce online returns due to product mismatch. At the same time, PRNs can also increase consumers' tolerance and willingness to repurchase, and reduce consumers' dissatisfaction and regret. Most interestingly, e-sellers can use PRNs with confidence, because it does not necessarily lead to fewer purchases and increased consumer skepticism. In practice, the PRN needs to work closely with the e-seller’s return policy. For example, the e-retailer’s return policy should clearly state whether returns

due to mismatches mentioned in the PRN are returnable. This can reduce disputes caused by returns. Given the benefits generated by PRN, e-retailers should clearly display PRN on product web pages. For example, an e-retailer can use highlighting to increase its prominence on the shopping website.

In conclusion, e-retailers can draw inspiration and methods on how to reduce online returns from the research findings. These methods are not only low-cost, effective but also have fewer side effects. From these approaches, e-retailers can choose the implementation path that suits their situation.

6.3.2 Recommendations for Future Research

This thesis provides suggestions for future academic research to advance research on return avoidance. These recommendations include in-depth research on the motivations and influencers of consumer return behavior and the exploration of new theories and frameworks in the area of return avoidance. The thesis also encourages the academic community to adopt new research methods and technologies to investigate deeper into the problem of online return avoidance. These recommendations help to promote more in-depth research on the problem of online returns in the academic community and provide guidance and direction for future research.

(1) Future research can explore the design of experimental scenarios that are closer to reality. Compared with studies conducted under online experimental conditions, experimental designs that are closer to reality enable researchers to more accurately understand consumers' post-purchase perceptions, behavioral intentions, and other influencing factors. This has the potential to further deepen the two studies of the thesis. For example, display PRNs on a more realistic website interface and observe how participants react to it. There may be some challenges with using this experimental design. For example, in studies that are close to real experimental scenarios, researchers may need to deal with more interference factors (including web page design, monitor resolution, etc.). However, despite these challenges, more rigorous research designs can provide deeper findings that are of great value to both academic research and commercial practice.

(2) In order to expand the scope and applicability of the research, more international shopping platforms such as Amazon, eBay, Zalando, Walmart, etc. can also be used. This may be a useful try and choice. Because international shopping

platforms often have a wider international market and consumer groups. By conducting research on international shopping platforms, researchers can obtain more data from different cultural backgrounds, economic backgrounds, and demand backgrounds, thereby obtaining more diverse research perspectives. Moreover, by exploring more international shopping platforms, subsequent research can better understand return behaviors in different cultural and market contexts. It should be noted that such studies can be more complex and expensive.

(3) The participants of the experiment are from Taobao users, and the previous shopping experience of Taobao users may affect their responses to online returns. Specifically, users' previous negative experiences on Taobao may affect their attitudes and behaviors toward return policies or certain return avoidance tools. Future research could consider these factors to deepen the research on the relationship between return avoidance tools (i.e., return credits and purchase-risk notices) and consumer responses. It is feasible to collect Taobao users' previous shopping or return experiences. For example, researchers could ask participants whether they have ever returned an item or had a negative return experience on Taobao. In the study of this thesis, we stipulated that all participants need to have had shopping experience on Taobao within the last six months. However, we did not investigate participants' experiences with returns on Taobao. Future research can incorporate this factor into the study in order to obtain more comprehensive research results.

(4) Future research could be devoted to exploring the boundary conditions under which return credit and purchase-risk notices come into work. Boundary conditions define the scope within which the model is effective. Therefore, many studies are concerned with the boundary conditions of theoretical models.

First, exploring the boundary conditions of return credit is critical to gain insight into the impact of return credits. Future research could investigate under what circumstances offering higher returns credit could trigger positive outcomes, such as intention to retain product, repurchase intentions, and customer satisfaction. This may involve factors such as consumer psychological characteristics, financial affordability, return experience, etc. By studying boundary conditions, we can reveal under what circumstances high return credit has a more significant positive impact on consumers' purchasing decisions and return decisions. Through a systematic study of return credits and boundary conditions, we can understand when and why high returns credits may have a positive impact on consumers, and under what circumstances it

may not. This understanding is critical and useful to optimizing online returns policy design and providing more specific recommendations.

Second, regarding purchase-risk notices, future research can explore under what circumstances purchase-risk notices play a positive role. For example, future research could examine the impact of risk notice cues on preventing online returns across different product categories. Because different product categories may involve different product attributes and customer psychology, understanding the relationship between these factors and return avoidance tools is critical to developing effective return avoidance strategies. For example, in different product categories, online customers may perceive the purchase risk differently, or perceive the risk notice cue differently. In addition, researchers can also explore other factors that may affect return behavior, such as product price, product involvement, brand reputation, etc., to further enrich research related to return avoidance.

(5) In addition to further in-depth research on return credits and purchase-risk notices, future research can also explore other possible return avoidance strategies, such as using artificial intelligence technology to explore personalized solutions, strengthening social proof and evaluation, etc.

First, explore the role of artificial intelligence in returns avoidance. By analyzing massive amounts of consumer data (including web browsing data, purchasing behavior data, return behavior data, etc.), artificial intelligence has the potential to identify individual consumer preferences and needs. This can increase e-retailers' understanding of online customers and provide a basis for decision-making in providing customized product or service solutions. For example, based on consumers' purchasing history, preferences and personal characteristics, artificial intelligence can recommend products that are more suitable for them to meet consumers' personalized needs and reduce the occurrence of returns.

Secondly, exploring the role of social evidence and evaluation is also a potential research direction. Social evidence, including consumer ratings, reviews and recommendations, can provide other consumers with reference and decision-making basis. Future research could explore how social evidence can be effectively used, such as through algorithmic analysis, to provide more accurate, useful, and reliable consumer feedback. This can help consumers better evaluate product quality or service quality and reduce returns caused by the uncertainty of online purchases.

Third, the role of other emerging technologies in returns avoidance can also be explored. For example, SeekXR reports a 25% reduction in product returns for AR-guided purchases. This is because augmented reality features can help many customers save time and choose the right product (Boland, 2021). Since augmented reality can help customers check for changes in previewed products, such as style or color differences, they are less likely to return items. Therefore, it is reasonable to speculate that emerging technologies like AR can play a role in avoiding returns.

References

Abbey, J., Ketzenberg, M., & Metters, R. (2018). A more profitable approach to product returns. MIT Sloan Management Review, 60(1), 1-6.

Abdulla, H., Abbey, J. D., & Ketzenberg, M. (2022). How consumers value retailer's return policy leniency levers: An empirical investigation. Production and Operations Management, 31(4), 1719–1733. https://doi.org/10.1111/poms.13640

Abdulla, H., Ketzenberg, M., & Abbey, J. (2019). Taking stock of consumer returns: A review and classification of the literature. Journal of Operations Management, 65. https://doi.org/10.1002/joom.1047

Abrams, K. (2021, July 14). These are the top global ecommerce markets. Insider Intelligence. https://www.insiderintelligence.com/content/top-global-ecommerce-markets

Ahsan, K., & Rahman, S. (2016). An investigation into critical service determinants of customer to business (C2B) type product returns in retail firms. International Journal of Physical Distribution & Logistics Management, 46(6/7), 606–633. https://doi.org/10.1108/IJPDLM-09-2015-0235

Ahsan, K., & Rahman, S. (2021). A systematic review of e-tail product returns and an agenda for future research. Industrial Management & Data Systems, 122(1), 137–166. https://doi.org/10.1108/IMDS-05-2021-0312

Akçay, Y., Boyacı, T., & Zhang, D. (2013). Selling with Money-Back Guarantees: The Impact on Prices, Quantities, and Retail Profitability. Production and Operations Management, 22(4), 777–791. https://doi.org/10.1111/j.1937-5956.2012.01394.x

Akrin, M. (2021, June 18). Council Post: How Consumers Compare Prices To Make Purchase Decisions. Forbes. https://www.forbes.com/sites/forbesbusinesscouncil/2021/06/18/how-consumers-compare-prices-to-make-purchase-decisions/

Akter, S., & Wamba, S. F. (2016). Big data analytics in E-commerce: A systematic review and agenda for future research. Electronic Markets, 26(2), 173–194. https://doi.org/10.1007/s12525-016-0219-0

Akturk, M. S., Ketzenberg, M., & Yıldız, B. (2021). Managing consumer returns with technology-enabled countermeasures. Omega, 102, 102337. https://doi.org/10.1016/j.omega.2020.102337

Alba, J., Lynch, J., Weitz, B., Janiszewski, C., Lutz, R., Sawyer, A., & Wood, S. (1997). Interactive Home Shopping: Consumer, Retailer, and Manufacturer Incentives to Participate in Electronic Marketplaces. Journal of Marketing, 61(3), 38–53. https://doi.org/10.1177/002224299706100303

Al-Barznji, K. (2022). Big Data Processing Frameworks for Handling Huge Data Efficiencies and Challenges: A Survey (SSRN Scholarly Paper 4143827). https://doi.org/10.2139/ssrn.4143827

Ali, A., & Rafiq, D. M. A. (2021). The Determinants of Customers' Intention to Use Smart Lockers for Last-Mile Deliveries: A Case of Pakistan. International Journal of Innovation, Creativity and Change, 15(2).

AlibabaGroup. (2018). Annual and transition report (foreign private issuer). Retrieved 15 January 2020 from https://otp.investis.com/clients/us/alibaba/SEC/sec-show.aspx?FilingId=12879202&Cik=0001577552&Type=PDF&hasPdf=1

Al-Jabri, I. M., Eid, M. I., & Abed, A. (2019). The willingness to disclose personal information: Trade-off between privacy concerns and benefits. Information & Computer Security, 28(2), 161–181. https://doi.org/10.1108/ICS-01-2018-0012

Al-Lami, G., & Alnoor, A. (2021). E-Commerce: Advantages and Limitations. International Journal of Academic Research in Accounting Finance and Management Sciences, 11, 153–165. https://doi.org/10.6007/IJARAFMS/v11-i1/8987

Alshamsi, A., & Diabat, A. (2015). A reverse logistics network design. Journal of Manufacturing Systems, 37, 589–598. https://doi.org/10.1016/j.jmsy.2015.02.006

Amazon. (2022, May 23). What happens to returned products at Amazon? EU About Amazon. https://www.aboutamazon.eu/news/retail/what-happens-to-returned-products-at-amazon

Ambilkar, P., Dohale, V., Gunasekaran, A., & Bilolikar, V. (2022). Product returns management: A comprehensive review and future research agenda. International Journal of Production Research, 60(12), 3920–3944. https://doi.org/10.1080/00207543.2021.1933645

Amorim, P., Calvo, E., & Wagner, L. (2023). How E-Commerce Companies Can Reduce Returns. MIT Sloan Management Review, 64(3). https://sloanreview.mit.edu/article/how-e-commerce-companies-can-reduce-returns/

Andersen, P. A., & Spitzberg, B. H. (2009). Myths and maxims of risk and crisis communication. Handbook of risk and crisis communication, 205-226.

Anderson, E. T., Hansen, K., & Simester, D. (2009). The Option Value of Returns: Theory and Empirical Evidence. Marketing Science, 28(3), 405–423. https://doi.org/10.1287/mksc.1080.0430

Andreoni, J., Harbaugh, W., & Vesterlund, L. (2003). The carrot or the stick: Rewards, punishments, and cooperation. American Economic Review, 93(3), 893-902.

Appriss Retail. (2019). Consumer returns in the retail industry 2019. Retrieved from https://appriss.com/retail/wp-content/uploads/sites/4/2020/01/AR3019-2019-Customer-Returns-in-the-Retail-Industry.pdf.

ApprissRetail. (2022). Consumer returns in the retail industry 2021. Retrieved 15 August 2022 from https://cdn.nrf.com/sites/default/files/2022-01/Customer%20Returns%20in%20the%20Retail%20Industry%202021.pdf

Arabian Business. (2021, May 23). The challenge of returns in e-commerce. https://www.arabianbusiness.com/opinion/comment/463641-the-challenge-of-returns-in-e-commerce

Arkes, H. R., & Blumer, C. (1985). The psychology of sunk cost. Organizational Behavior and Human Decision Processes, 35(1), 124–140.

Arvey, R. D., & Ivancevich, J. M. (1980). Punishment in organizations: A review, propositions, and research suggestions. Academy of management review, 5(1), 123-132.

Asdecker, B. (2015). Returning mail-order goods: Analyzing the relationship between the rate of returns and the associated costs. Logistics Research, 8(1), 3. https://doi.org/10.1007/s12159-015-0124-5

Askarifar, K., Dehbozorgi, Y., & Alsafi, A. (2022). How risk-aversion level of return policies impact consumer trust in online shopping? An intercultural study in the Middle East. Journal of Islamic Marketing, ahead-of-print(ahead-of-print). https://doi.org/10.1108/JIMA-07-2022-0193

Azzi, A., Battini, D., Persona, A., & Sgarbossa, F. (2012). Packaging Design: General Framework and Research Agenda. Packaging Technology and Science, 25(8), 435–456. https://doi.org/10.1002/pts.993

Ba, S., Whinston, A. B., & Zhang, H. (2003). Building trust in online auction markets through an economic incentive mechanism. Decision Support Systems, 35(3), 273–286. https://doi.org/10.1016/S0167-9236(02)00074-X

Bahn, K. D., & Boyd, E. (2014). Information and its impact on consumers′ reactions to restrictive return policies. Journal of Retailing and Consumer Services, 21(4), 415–423. https://doi.org/10.1016/j.jretconser.2014.03.002

Bai, C., & Sarkis, J. (2013). Flexibility in reverse logistics: A framework and evaluation approach. Journal of Cleaner Production, 47, 306–318. https://doi.org/10.1016/j.jclepro.2013.01.005

Bakker, M. (2023, June 21). The role of Visual Content in the buying journey – Alec Minnema. Bright River. https://bright-river.com/the-role-of-visual-content-in-the-buying-journey/

Barbee, J., Jayakumar, J., Touse, S., & Venkataraman, K. (2021, September 8). Faster omnichannel order fulfillment for retailers. McKinsey & Company. https://www.mckinsey.com/industries/retail/our-insights/retails-need-for-speed-unlocking-value-in-omnichannel-delivery

Bass, C. (2022, August 10). 3 eCommerce tactics to reduce your online return rates. Fresh Relevance. https://www.freshrelevance.com/blog/how-to-reduce-returns-in-ecommerce/

Batchelor, B. (2020, June 12). Council Post: How Your Return Policy Can Influence New Sales And Long-Term Loyalty. Forbes. https://www.forbes.com/sites/forbesbusinessdevelopmentcouncil/2020/06/12/how-your-return-policy-can-influence-new-sales-and-long-term-loyalty/

Bawack, R. E., Wamba, S. F., Carillo, K. D. A., & Akter, S. (2022). Artificial intelligence in E-Commerce: A bibliometric study and literature review. Electronic Markets, 32(1), 297–338. https://doi.org/10.1007/s12525-022-00537-z

Bayley, G., & Nancarrow, C. (1998). Impulse purchasing: A qualitative exploration of the phenomenon. Qualitative Market Research: An International Journal, 1(2), 99–114.

Beatty, S. E., & Ferrell, M. E. (1998). Impulse buying: Modeling its precursors. Journal of Retailing, 74(2), 169–191.

Belk, R. W. (1975). Situational Variables and Consumer Behavior. Journal of Consumer Research, 2(3), 157–164. https://doi.org/10.1086/208627

Belu, M. G., & Marinoiu, A.-M. (2014). A new distribution strategy: The omnichannel strategy. The Romanian Economic Journal, 17(52), 117–134.

Bennett, E. (2021, January 22). Tackling the Unsustainable Rate of Returns. Eco-Age. https://eco-age.com/resources/tackling-the-unsustainable-rate-of-returns/

Berger, J., Cohen, B. P., & Zelditch, M. (1972). Status Characteristics and Social Interaction. American Sociological Review, 37(3), 241–255. https://doi.org/10.2307/2093465

Berman, B. (1999). Planning the inevitable product recall. Business Horizons, 42(2), 69–70.

Bernon, M., Rossi, S., & Cullen, J. (2011). Retail reverse logistics: A call and grounding framework for research. International Journal of Physical Distribution & Logistics Management, 41(5), 484–510. https://doi.org/10.1108/09600031111138835

Berthene, A. (2019, September 12). Sizing issue is a top reason shoppers return online orders. Digital Commerce 360. https://www.digitalcommerce360.com/2019/09/12/sizing-issue-is-a-top-reason-shoppers-return-online-orders/

Besustringue, L., Garcia-Vigonte, F., & Abante, M. V. (2023). Flow of Household Income (SSRN Scholarly Paper 4366861). https://doi.org/10.2139/ssrn.4366861

Bettman, J. R., & Park, C. W. (1980). Effects of prior knowledge and experience and phase of the choice process on consumer decision processes: A protocol analysis. Journal of Consumer Research, 7(3), 234–248.

Bhattacharjee, R. (2022, March 29). eCommerce returns in India at 25-40%: What you should know for your D2C business. Blog Instamojo. https://www.instamojo.com/blog/ecommerce-returns-in-india-what-you-should-know-for-your-d2c-business/

Bhattarai, A. (2021, October 23). UPS says it will handle a record 1.4 million returns on Wednesday. Washington Post. https://www.washingtonpost.com/news/business/wp/2018/01/02/ups-says-it-will-handle-a-record-1-4-million-returns-on-wednesday/

Bitner, M. J., Booms, B. H., & Tetreault, M. S. (1990). The Service Encounter: Diagnosing Favorable and Unfavorable Incidents. Journal of Marketing, 54(1), 71–84. https://doi.org/10.1177/002224299005400105

Blackburn, J. D., Guide Jr, V. D. R., Souza, G. C., & Van Wassenhove, L. N. (2004). Reverse supply chains for commercial returns. California Management Review, 46(2), 6–22.

Bleich, C. (2023, June 2). How To Lessen the Impact of E-Commerce Returns. Bloomreach. https://www.bloomreach.com/en/blog/2023/e-commerce-returns

Blume Global. (2019, October 2). What Services do Third-Party Logistics Providers Offer? Blume Global - Supply Chain Solutions. https://www.blumeglobal.com/learning/services-third-party-logistics-providers-offer/

Boisvert, J., & Ashill, N. J. (2018). The impact of branding strategies on horizontal and downward line extension of luxury brands: A cross-national study. International marketing review, 35(6), 1033-1052.

Boland, M. (2021, September 28). Does AR Really Reduce eCommerce Returns? AR Insider. https://arinsider.co/2021/09/28/does-ar-really-reduce-ecommerce-returns-2/

Bonifield, C., Cole, C., & Schultz, R. L. (2010). Product returns on the Internet: A case of mixed signals? Journal of Business Research, 63(9), 1058–1065. https://doi.org/10.1016/j.jbusres.2008.12.009

Borges, A., Chebat, J.-C., & Babin, B. J. (2010). Does a companion always enhance the shopping experience? Journal of Retailing and Consumer Services, 17(4), 294–299. https://doi.org/10.1016/j.jretconser.2010.02.007

Bower, A. B., & Maxham, J. G. (2012). Return Shipping Policies of Online Retailers: Normative Assumptions and the Long-Term Consequences of Fee and Free Returns. Journal of Marketing, 76(5), 110–124. https://doi.org/10.1509/jm.10.0419

Bracken, M. (2021, March 30). 9 Ways to Reduce Product Returns. SkuVault. https://www.skuvault.com/blog/reduce-product-returns/

Brialey, T. (2020, January 20). Service Speed in Retail: Why Is It Important (And How Can You Improve It)? First Atlantic Commerce. https://firstatlanticcommerce.com/blog-fac/service-speed-in-retail-why-is-it-important-and-how-can-you-improve-it/

Britannica. (2023). Internet. Britannica Kids. https://kids.britannica.com/kids/article/Internet/353293

Bucko, J., Kakalejčík, L., & Ferencová, M. (2018). Online shopping: Factors that affect consumer purchasing behaviour. Cogent Business & Management, 5(1), 1535751. https://doi.org/10.1080/23311975.2018.1535751

Bui, M., Krishen, A. S., & Bates, K. (2011). Modeling regret effects on consumer post-purchase decisions. European Journal of Marketing, 45(7/8), 1068-1090.

Buldeo Rai, H., Mommens, K., Verlinde, S., & Macharis, C. (2019). How Does Consumers' Omnichannel Shopping Behaviour Translate into Travel and Transport Impacts? Case-Study of a Footwear Retailer in Belgium. Sustainability, 11(9), Article 9. https://doi.org/10.3390/su11092534

Business Wire. (2022, August 23). 66% of Shoppers Cautious After Returning Products Bought on Social Media Networks. https://www.businesswire.com/news/home/20220823005343/en/66-of-Shoppers-Cautious-After-Returning-Products-Bought-on-Social-Media-Networks

Cai, J., & Wohn, D. Y. (2019). Live Streaming Commerce: Uses and Gratifications Approach to Understanding Consumers' Motivations. Hawaii International Conference on System Sciences 2019 (HICSS-52). https://aisel.aisnet.org/hicss-52/dsm/live_streaming_services/3

Caldwell, A. (2020, November 26). What Is Customer Retention? Importance, Metrics & Strategies. Oracle NetSuite. https://www.netsuite.com/portal/resource/articles/crm/customer-retention.shtml

Callarman, S. (2019, October 23). A Guide to Ecommerce Return Policies in 2023. ShipBob. https://www.shipbob.com/blog/ecommerce-returns/

Canaves, S. (2023, February 15). Returns surged during the pandemic-fueled ecommerce boom, but some relief is in sight. https://www.insiderintelligence.com/content/returns-surged-during-pandemic-fueled-ecommerce-boom-some-relief-sight

Cancino-Montecinos, S., Björklund, F., & Lindholm, T. (2020). A General Model of Dissonance Reduction: Unifying Past Accounts via an Emotion Regulation Perspective. Frontiers in Psychology, 11. https://www.frontiersin.org/articles/10.3389/fpsyg.2020.540081

Cannon, M. (2023, March 4). The 12 Most Common Reasons for Returns. https://www.chargebackgurus.com/blog/return-reasons

Caramela, S. (2023, March 16). 5 Reasons Why Product Quality Matters. Business.Com. https://www.business.com/articles/5-reasons-why-product-quality-matters/

Cassill, N. L. (1998). Do customer returns enhance product and shopping experience satisfaction? The International Review of Retail, Distribution and Consumer Research, 8(1), 1–13. https://doi.org/10.1080/095939698342841

Castek, D., Kalathil, A., & Colehower, J. (2022). Striking a balance between returns avoidance and efficiency (p. 18). UST Global. https://www.ust.com/content/dam/ust/documents/Whitepaper_UST-Perspective-on-Retail-Returns-Management.pdf

CBRE. (2021). 'Tis the stressful season for holiday gift returns. Retrieved 15 August 2022 from https://www.cbre.com/insights/viewpoints/reverse-logistics-tis-the-stressful-season-for-holiday-gift-returns

Chaleshtari, A. S., Elahi, E., Fathi, M., & Khakifirooz, M. (2022). Impact of return leniency on retailers' profit and social welfare in monopoly markets. Computers & Industrial Engineering, 169, 108149.

Chambers, S. (2021, July 28). 6 Customer Service Recovery Strategies to Add to your Toolbox. https://blog.hubspot.com/service/service-recovery

Chandra, S., & Verma, S. (2023). Personalized Recommendation During Customer Shopping Journey. In C. L. Wang (Ed.), The Palgrave Handbook of Interactive Marketing (pp. 729–752). Springer International Publishing. https://doi.org/10.1007/978-3-031-14961-0_32

Chandra, S., Verma, S., Lim, W. M., Kumar, S., & Donthu, N. (2022). Personalization in personalized marketing: Trends and ways forward. Psychology & Marketing, 39(8), 1529–1562. https://doi.org/10.1002/mar.21670

Chang, H., Wang, Y., & Yang, W. (2009). The impact of e-service quality, customer satisfaction and loyalty on e-marketing: Moderating effect of perceived value. Total quality management, 20(4), 423-443.

Chang, H.-H., & Guo, Y.-Y. (2021). Online fraudulent returns in Taiwan: The impacts of e-retailers' transaction ethics and consumer personality. Journal of Retailing and Consumer Services, 61, 102529. https://doi.org/10.1016/j.jretconser.2021.102529

Chang, H.-H., & Lu, L.-C. (2019). Actively Persuading Consumers to Enact Ethical Behaviors in Retailing: The Influence of Relational Benefits and Corporate Associates. Journal of Business Ethics, 156(2), 399–416. https://doi.org/10.1007/s10551-017-3595-2

Chang, H.-H., & Yang, T.-S. (2022). Consumer rights or unethical behaviors: Exploring the impacts of retailer return policies. Journal of Retailing and Consumer Services, 64, 102779. https://doi.org/10.1016/j.jretconser.2021.102779

Chang, I., Chang, C., Wu, J., & Huang, T. (2015). Assessing the performance of long-term care information systems and the continued use intention of users. Telematics and Informatics, 32(2), 273-281.

Chang, L., Zhang, H., Xie, G., Yu, Z., Zhang, M., Li, T., Tian, G., & Yu, D. (2021). Reverse Logistics Location Based on Energy Consumption: Modeling and Multi-Objective Optimization Method. Applied Sciences, 11(14), Article 14. https://doi.org/10.3390/app11146466

Charlton G. (2020). Ecommerce returns: 2020 stats and trends. Retrieved from https://www.salecycle.com/blog/featured/ecommerce-returns-2018-stats-trends/.

Charlton, G. (2014, May 7). Multichannel retailers need to work on their returns policies. Econsultancy. https://econsultancy.com/multichannel-retailers-need-to-work-on-their-returns-policies/

Chen, H., Marmorstein, H., Tsiros, M., & Rao, A. R. (2012). When more is less: The impact of base value neglect on consumer preferences for bonus packs over price discounts. Journal of Marketing, 76(4), 64-77.

Chen, J., & Chen, B. (2016). Competing with customer returns policies. International Journal of Production Research, 54(7), 2093-2107.

Chen, J., Yu, B., Chen, B., & Liu, Z. (2023). Lenient vs. stringent returns policies in the presence of fraudulent returns: The role of customers' fairness perceptions. Omega, 117, 102843. https://doi.org/10.1016/j.omega.2023.102843

Chen, M., Chen, J., & Zheng, H. (2021). A study on the impact of apparel industry product image on customer purchase intention. In Proceedings of the Fourteenth International Conference on Management Science and Engineering Management: Volume 2 (pp. 301-314). Springer International Publishing.

Chen, T. (2008). Impulse purchase varied by products and marketing channels. Journal of International Management Studies, 3(1), 154–161.

Chen, Y., Ramamurthy, K., & Wen, K. (2012). Organizations' information security policy compliance: Stick or carrot approach? Journal of Management Information Systems, 29(3), 157-188.

Chen, Y.-C., Shang, R.-A., & Kao, C.-Y. (2009). The effects of information overload on consumers' subjective state towards buying decision in the internet shopping environment. Electronic Commerce Research and Applications, 8(1), 48–58. https://doi.org/10.1016/j.elerap.2008.09.001

Chetioui, Y., & El Bouzidi, L. (2023). An investigation of the nexus between online impulsive buying and cognitive dissonance among Gen Z shoppers: Are female shoppers different? Young Consumers, ahead-of-print.

Chevalier, S. (2022). Retail e-commerce sales worldwide from 2014 to 2025. Retrieved 15 August 2022 from https://www.statista.com/statistics/379046/worldwide-retail-e-commerce-sales/

Chevalier, S. (2023, April 12). Social commerce revenue forecast 2022-2030. Statista. https://www.statista.com/statistics/1231944/social-commerce-global-market-size/

Chircu, A. M., & Mahajan, V. (2006). Managing electronic commerce retail transaction costs for customer value. Decision Support Systems, 42(2), 898–914. https://doi.org/10.1016/j.dss.2005.07.011

Chiu, C. M., Chang, C. C., Cheng, H. L., & Fang, Y. H. (2009). Determinants of customer repurchase intention in online shopping. Online information review, 33(4), 761-784.

Chiu, C. M., Hsu, M. H., Lai, H., & Chang, C. M. (2012). Re-examining the influence of trust on online repeat purchase intention: The moderating role of habit and its antecedents. Decision Support Systems, 53(4), 835-845.

Chocarro, R., Cortiñas, M., & Villanueva, M.-L. (2013). Situational variables in online versus offline channel choice. Electronic Commerce Research and Applications, 12(5), 347–361.

Chu, W., Gerstner, E., & Hess, J. D. (1998). Managing dissatisfaction: How to decrease customer opportunism by partial refunds. Journal of Service Research, 1(2), 140–155.

Chueamuangphan, K., Kashyap, P., & Visvanathan, C. (2020). Packaging Waste from E-Commerce: Consumers' Awareness and Concern. In S. K. Ghosh (Ed.), Sustainable Waste Management: Policies and Case Studies (pp. 27–41). Springer. https://doi.org/10.1007/978-981-13-7071-7_3

Chung, S.-W., Kim, B.-K., & Song, W.-J. (2010). Removing chromatic aberration by digital image processing. Optical Engineering, 49(6), 067002. https://doi.org/10.1117/1.3455506

ClickPost. (2022, October 29). Relationship Between Product Returns and Customer Loyalty. https://www.clickpost.ai/blog/relationship-between-product-returns-and-customer-loyalty

Clickpost. (2023, February 1). ECommerce Returns in India. https://www.clickpost.ai/blog/ecommerce-returns-in-india

Cohen, E. B. (2009). A philosophy of informing science. Informing science, 12, 1.

Cohen, J. (1992). Quantitative methods in psychology: A power primer. Psychol. Bull., 112, 1155-1159.

Colburn, R. T. (2013). Determining the Effect of the Returns Management Experience on Consumer Satisfaction.

Collier, J. E., & Bienstock, C. C. (2006). Measuring service quality in e-retailing. Journal of Service Research, 8(3), 260–275.

Comstock, M. (2018). The return trip: How returns impact online shopping. Retrieved 15 May 2021 from https://moneyinc.com/the-return-trip-how-returns-impact-online-shopping/

Comstock, M. (2020, June 3). The Return Trip: How Returns Impact Online Shopping. https://moneyinc.com/the-return-trip-how-returns-impact-online-shopping/

Condea, C., Thiesse, F., & Fleisch, E. (2010). Assessing the impact of RFID and sensor technologies on the returns management of time-sensitive products. Business Process Management Journal, 16(6), 954–971. https://doi.org/10.1108/14637151011093017

Conley, P. (2023, January 24). Holiday returns decline as retailers raise fees. Digital Commerce 360. https://www.digitalcommerce360.com/2023/01/24/holiday-returns-decline-as-retailers-raise-fees/

Connolly, B. (2023, June 28). The Top Amazon Product Categories in 2023. Jungle Scout. https://www.junglescout.com/blog/amazon-product-categories/

Coombes, R. (2017, September 2). Equipment damage: 8 causes of products breaking in transit. GWP Group. https://www.gwp.co.uk/guides/equipment-damage-8-main-causes/

Cranage, D. A., Sujan, H., & Godbey, G. (2006). Sharing the responsibility for service failure with customers: The effects of informed choice and outcome foreseeability on customer loyalty and exit. Journal of Hospitality & Leisure Marketing, 13(3-4), 207-239.

Creyer, E. H., & Ross, W. T. (1999). The development and use of a regret experience measure to examine the effects of outcome feedback on regret and subsequent choice. Marketing Letters, 10, 373-386.

Crowley, A. E., & Hoyer, W. D. (1994). An integrative framework for understanding two-sided persuasion. Journal of Consumer research, 20(4), 561-574.

Cui, X., Lai, V. S., & Lowry, P. B. (2016). How do bidders' organism reactions mediate auction stimuli and bidder loyalty in online auctions? The case of Taobao in China. Information & Management, 53(5), 609-624.

Cullinane, S., & Cullinane, K. (2021). The Logistics of Online Clothing Returns in Sweden and How to Reduce its Environmental Impact. Journal of Service Science and Management, 14(01), Article 01. https://doi.org/10.4236/jssm.2021.141006

Culnan, M. J., & Armstrong, P. K. (1999). Information Privacy Concerns, Procedural Fairness, and Impersonal Trust: An Empirical Investigation. Organization Science, 10(1), 104–115. https://doi.org/10.1287/orsc.10.1.104

d'Astous, A., & Guèvremont, A. (2008). Effects of retailer post-purchase guarantee policies on consumer perceptions with the moderating influence of financial risk and product

complexity. Journal of Retailing and Consumer Services, 15(4), 306–314. https://doi.org/10.1016/j.jretconser.2007.06.005

Daaboul, J., Le Duigou, J., Penciuc, D., & Eynard, B. (2014). Reverse logistics network design: A holistic life cycle approach. Journal of Remanufacturing, 4(1), 7. https://doi.org/10.1186/s13243-014-0007-y

Dacko, S. G. (2017). Enabling smart retail settings via mobile augmented reality shopping apps. Technological forecasting and social change, 124, 243-256.

Dailey, L. C., & Ülkü, M. A. (2018). Retailers beware: On denied product returns and consumer behavior. Journal of Business Research, 86, 202-209.

Damen, A. (2023, January 17). What is Try Before You Buy? Shopify. https://www.shopify.com/retail/try-before-you-buy-programs

Dassanayake, D., & Herath, R. (2020). Factors Affecting on Customer Retention in Mobile Telecommunication Industry in Sri Lanka.

Daugherty, P. J., Bolumole, Y., & Grawe, S. J. (2018). The new age of customer impatience: An agenda for reawakening logistics customer service research. International Journal of Physical Distribution & Logistics Management, 49(1), 4-32.

Davis, S., Hagerty, M., & Gerstner, E. (1998). Return policies and the optimal level of "hassle". Journal of Economics and Business, 50(5), 445–460. https://doi.org/10.1016/S0148-6195(98)00013-7

de Araújo, A. C., Matsuoka, E. M., Ung, J. E., Massote, A., & Sampaio, M. (2018). An exploratory study on the returns management process in an online retailer. International Journal of Logistics Research and Applications, 21(3), 345–362. https://doi.org/10.1080/13675567.2017.1370080

de Brito, M. P., & de Koster, M. B. M. (2003). Product Return Handling (SSRN Scholarly Paper 411650). https://papers.ssrn.com/abstract=411650

de Brito, M. P., & Dekker, R. (2003). Modelling product returns in inventory control—Exploring the validity of general assumptions. International Journal of Production Economics, 81–82, 225–241. https://doi.org/10.1016/S0925-5273(02)00275-X

de Leeuw, S., Minguela-Rata, B., Sabet, E., Boter, J., & Sigurðardóttir, R. (2016). Trade-offs in managing commercial consumer returns for online apparel retail. International

Journal of Operations & Production Management, 36(6), 710–731. https://doi.org/10.1108/IJOPM-01-2015-0010

De, P., Hu, Y. (Jeffrey), & Rahman, M. S. (2013). Product-Oriented Web Technologies and Product Returns: An Exploratory Study. Information Systems Research, 24(4), 998–1010. https://doi.org/10.1287/isre.2013.0487

Deeter-Schmelz, D. R., Bizzari, A., Graham, R., & Howdyshell, C. (2001). Business-to-Business Online Purchasing: Suppliers' Impact on Buyers' Adoption and Usage Intent. Journal of Supply Chain Management, 37(4), 4–10. https://doi.org/10.1111/j.1745-493X.2001.tb00087.x

Delaney, A. (2022, April 13). Chronemics and the Nonverbal Language of Time. JSTOR Daily. https://daily.jstor.org/chronemics-and-the-nonverbal-language-of-time/

Deloitte Consulting. (2019). Reverse Logistics Management For Supply Chain (p. 7). Deloitte United States. https://www2.deloitte.com/us/en/pages/consulting/articles/reverse-logistics-management-for-supply-chains.html

Desai, A., & Rao, D. M. S. (2019). The Customer's On-Line Returns—A Study Based On Hyderabad Region. Think India Journal, 22(27), Article 27.

Deutskens, E., de Jong, A., de Ruyter, K., & Wetzels, M. (2006). Comparing the generalizability of online and mail surveys in cross-national service quality research. Marketing letters, 17, 119-136.

Dholakia, R. R., Zhao, M., & Dholakia, N. (2005). Multichannel retailing: A case study of early experiences. Journal of Interactive Marketing, 19(2), 63–74.

Difrancesco, R. M., & Huchzermeier, A. (2020). Multichannel retail competition with product returns: Effects of restocking fee legislation. Electronic Commerce Research and Applications, 43, 100993. https://doi.org/10.1016/j.elerap.2020.100993

Difrancesco, R. M., Huchzermeier, A., & Schröder, D. (2018). Optimizing the return window for online fashion retailers with closed-loop refurbishment. Omega, 78, 205–221. https://doi.org/10.1016/j.omega.2017.07.001

Dimoka, A., Hong, Y., & Pavlou, P. A. (2012). On product uncertainty in online markets: Theory and evidence. MIS quarterly, 395-426.

Dinev, T., & Hart, P. (2006). An Extended Privacy Calculus Model for E-Commerce Transactions. Information Systems Research, 17(1), 61–80. https://doi.org/10.1287/isre.1060.0080

Djordjevic, M. (2021). 18 ecommerce return rate statistics for an enhanced shopping experience in 2021. Retrieved May 10, 2022 from https://savemycent.com/ecommerce-return-rate-statistics/.

Djuraskovic, O. (2020, August 24). eCommerce Statistics (2023)—33 Useful Stats and Facts. FirstSiteGuide. https://firstsiteguide.com/ecommerce-stats/

Do, T. (2020). Return too many items on Amazon? Will Amazon ban your account? Retrieved 16 April 2021 from https://www.techwalls.com/amazon-ban-return-too-many-items/

Dootson, P., Johnston, K. A., Lings, I., & Beatson, A. (2018). Tactics to deter deviant consumer behavior: a research agenda. Journal of Consumer Marketing, 35(6), 577-587.

Dopson, E. (2021). The plague of ecommerce return rates and how to maintain profitability. Retrieved 8 September 2021 from https://www.shopify.com/enterprise/ecommerce-returns

Dopson, E. (2021, August 25). Ecommerce Returns: Expert Guide to Best Practices. Shopify Plus. https://www.shopify.com/enterprise/ecommerce-returns

Dopson, E. (2023a, March 16). Returnless Refunds: Amazon Does It—Should You? Shopify. https://www.shopify.com/retail/returnless-refunds

Dopson, E. (2023b, March 23). What Is Store Credit? How To Use It To Sell More (2023). Shopify. https://www.shopify.com/uk/retail/store-credit-for-customer-retention

Drew. (2022). Main problems in product distribution logistics. https://blog.wearedrew.co/en/main-problems-in-product-distribution-logistics

Duong, Q. H., Zhou, L., Meng, M., Van Nguyen, T., Ieromonachou, P., & Nguyen, D. T. (2022). Understanding product returns: A systematic literature review using machine learning and bibliometric analysis. International Journal of Production Economics, 243, 108340.

Dutta, P., Mishra, A., Khandelwal, S., & Katthawala, I. (2020). A multiobjective optimization model for sustainable reverse logistics in Indian E-commerce market. Journal of Cleaner Production, 249, 119348. https://doi.org/10.1016/j.jclepro.2019.119348

Dwyer, T. (2012, April 15). The Three Pillars of Effective Returns Management. Inbound Logistics. https://www.inboundlogistics.com/articles/the-three-pillars-of-effective-returns-management/

Easyship. (2023, June 17). How to Send a Prepaid Return Shipping Label. Easyship. https://www.easyship.com/blog/prepaid-return-labels

E-commerce Headlines. (2023, March 21). Live streaming is impulsive consumption, and returns and refunds cause internal friction. E-commerce News. https://www.dsb.cn/212616.html

Ecommerce News. (2016). Online returns in Europe. Ecommerce News. https://ecommercenews.eu/online-returns-in-europe/

Ecwid. (2020, February 10). Top Reasons for Returns and How to Minimize Them in Your Online Store. Ecwid | E-Commerce Shopping Cart. https://www.ecwid.com/blog/top-reasons-for-returns-and-how-to-minimize-them-in-your-online-store.html

Elbeltagi, I., & Agag, G. (2016). E-retailing ethics and its impact on customer satisfaction and repurchase intention: A cultural and commitment-trust theory perspective. Internet Research, 26(1), 288–310. https://doi.org/10.1108/IntR-10-2014-0244

El-Fadel, M., Findikakis, A. N., & Leckie, J. O. (1997). Environmental Impacts of Solid Waste Landfilling. Journal of Environmental Management, 50(1), 1–25. https://doi.org/10.1006/jema.1995.0131

Elliot, A. J., & Devine, P. G. (1994). On the motivational nature of cognitive dissonance: Dissonance as psychological discomfort. Journal of Personality and Social Psychology, 67(3), 382.

eMarketer. (2017). The cost of acquiring a mobile app user. Retrieved 15 December 2020 from https://www.emarketer.com/Article/Cost-of-Acquiring-Mobile-App-User/1016688

Ertekin, N. (2018). Immediate and long?term benefits of in?store return experience. Production and Operations Management, 27(1), 121-142.

Escursell, S., Llorach-Massana, P., & Roncero, M. B. (2021). Sustainability in e-commerce packaging: A review. Journal of Cleaner Production, 280, 124314. https://doi.org/10.1016/j.jclepro.2020.124314

European Union. (2023, April 19). Guarantees, cancelling and returning your purchases. Your Europe. https://europa.eu/youreurope/citizens/consumers/shopping/guarantees-returns/index_en.htm

Evans, P., & Wurster, T. S. (1999). Getting Real About Virtual Commerce. Harvard Business Review, 77(6), 85–85.

Fan, A., Wu, L., Miao, L., & Mattila, A. S. (2020). When does technology anthropomorphism help alleviate customer dissatisfaction after a service failure?–The moderating role of consumer technology self-efficacy and interdependent self-construal. Journal of Hospitality Marketing & Management, 29(3), 269-290.

Fan, H., Khouja, M., & Zhou, J. (2022). Design of win-win return policies for online retailers. European Journal of Operational Research, 301(2), 675-693.

Fan, Z.-P., & Chen, Z. (2020). When should the e-tailer offer complimentary return-freight insurance ? International Journal of Production Economics, 230, 107890. https://doi.org/10.1016/j.ijpe.2020.107890

Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2009). Statistical power analyses using G* Power 3.1: Tests for correlation and regression analyses. Behavior research methods, 41(4), 1149-1160.

Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. Behavior research methods, 39(2), 175-191.

Ferguson, M., Guide, V. D. R., & Souza, G. C. (2006). Supply Chain Coordination for False Failure Returns. Manufacturing & Service Operations Management, 8(4), 376–393. https://doi.org/10.1287/msom.1060.0112

Filieri, R., McLeay, F., Tsui, B., & Lin, Z. (2018). Consumer perceptions of information helpfulness and determinants of purchase intention in online consumer reviews of services. Information & management, 55(8), 956-970.

Finan, A. (2023, May 13). 7 Ecommerce Returns Statistics That Will Blow Your Mind! https://ecommercefastlane.com/7-ecommerce-returns-statistics-that-will-blow-your-

mind/, https://ecommercefastlane.com/7-ecommerce-returns-statistics-that-will-blow-your-mind/

FindLaw. (2016). Return policies and refunds. Retrieved 8 October 2022 from https://www.findlaw.com/consumer/consumer-transactions/return-policies-and-refunds.html#:~:text=Merchants%20may%20charge%20a%20restocking,these%20fees%20prior%20to%20purchase.

Fisher, S. (2022, June 3). 17 Pros and Cons of Shopping Online. Lifewire. https://www.lifewire.com/shopping-online-pros-and-cons-3482632

Flanagin, A. J., Metzger, M. J., Pure, R., Markov, A., & Hartsell, E. (2014). Mitigating risk in ecommerce transactions: perceptions of information credibility and the role of user-generated ratings in product quality and purchase intention. Electronic Commerce Research, 14(1), 1-23.

Flavián, C., Gurrea, R., & Orús, C. (2016). Choice confidence in the webrooming purchase process: The impact of online positive reviews and the motivation to touch. Journal of Consumer Behaviour, 15(5), 459-476.

Flower, C. (2014, August 27). Customer ordered item twice by mistake now wants refund! Amazon Seller Forums. https://sellercentral-europe.amazon.com/forums/t/customer-ordered-item-twice-by-mistake-now-wants-refund/120711

Fombrun, C., & Shanley, M. (1990). What's in a Name? Reputation Building and Corporate Strategy. Academy of Management Journal, 33(2), 233–258. https://doi.org/10.5465/256324

Forbes. (2015, October 30). How Mobile Ordering Can Impact Starbucks' Valuation. https://www.forbes.com/sites/greatspeculations/2015/10/30/how-mobile-ordering-can-impact-starbucks-valuation/?sh=697867fc12f4

Fornell, C., & Didow, N. M. (1980). Economic Constraints on Consumer Complaining Behavior. ACR North American Advances, NA-07. https://www.acrwebsite.org/volumes/9690/volumes/v07/NA-07/full

Fornell, C., & Wernerfelt, B. (1987). Defensive marketing strategy by customer complaint management: A theoretical analysis. Journal of Marketing Research, 24(4), 337–346.

Forsythe, S. M., & Shi, B. (2003). Consumer patronage and risk perceptions in Internet shopping. Journal of Business Research, 56(11), 867–875. https://doi.org/10.1016/S0148-2963(01)00273-9

Fortune Business Insights. (2023, December 4). E-commerce Packaging Market to Worth USD 66.51 Billion by 2030. GlobeNewswire News Room. https://www.globenewswire.com/news-release/2023/04/12/2645059/0/en/E-commerce-Packaging-Market-to-Worth-USD-66-51-Billion-by-2030-Fortune-Business-Insights.html

Fox, R. (2022a, March 23). 4 Types of eCommerce Returns and When to Offer Each Type. https://returngo.ai/return-types-merchants-should-know/

Fox, R. (2022b, October 31). How to Reduce Online Return Bracketing. https://returngo.ai/reduce-online-return-bracketing/

Foxall, G. R. (2003). The behavior analysis of consumer choice: An introduction to the special issue. Journal of Economic Psychology, 24(5), 581–588.

Franklin, A. (2022, November 22). Customer complaints: Definition, examples, and resolution tips. Zendesk. https://www.zendesk.com/blog/customer-complaints-10-tips-manage-better/

Frei, R., Jack, L., & Brown, S. (2020). Product returns: A growing problem for business, society and environment. International Journal of Operations & Production Management, 40(10), 1613–1621. https://doi.org/10.1108/IJOPM-02-2020-0083

Frei, R., Jack, L., & Krzyzaniak, S.-A. (2022). Mapping Product Returns Processes in Multichannel Retailing: Challenges and Opportunities. Sustainability, 14(3), Article 3. https://doi.org/10.3390/su14031382

Frisby, J. (2018). The world's biggest online spenders revealed. Retrieved 30 March 2021 from https://www.websitebuilderexpert.com/blog/worlds-biggest-online-spenders/

Frith, U., & Frith, C. (2001). The Biological Basis of Social Interaction. Current Directions in Psychological Science, 10(5), 151–155. https://doi.org/10.1111/1467-8721.00137

Fu, Y., Liu, G., Papadimitriou, S., Xiong, H., Li, X., & Chen, G. (2016). Fused latent models for assessing product return propensity in online commerce. Decision Support Systems, 91, 77–88. https://doi.org/10.1016/j.dss.2016.08.002

Furnier, U. P. J. (2017). What effect does' pre-failure recovery'have on customer satisfaction?. University of Surrey (United Kingdom).

Gallino, S., & Moreno, A. (2018). The Value of Fit Information in Online Retail: Evidence from a Randomized Field Experiment. Manufacturing & Service Operations Management, 20(4), 767–787. https://doi.org/10.1287/msom.2017.0686

Gardine, D., & Reefke, H. (2019). Advanced supply chain concepts: Technology and sustainability. In Operations Management for Business Excellence (4th ed.). Routledge.

Gäthke, J., Gelbrich, K., & Chen, S. (2022). A cross-national service strategy to manage product returns: e-tailers' return policies and the legitimating role of the institutional environment. Journal of Service Research, 25(3), 402-421.

Gehrt, K. C., & Yan, R. (2004). Situational, consumer, and retailer factors affecting Internet, catalog, and store shopping. International Journal of Retail & Distribution Management, 32(1), 5–18. https://doi.org/10.1108/09590550410515515

Gelbrich, K., Gäthke, J., & Hübner, A. (2017). Rewarding customers who keep a product: How reinforcement affects customers' product return decision in online retailing. Psychology & Marketing, 34(9), 853–867. https://doi.org/10.1002/mar.21027

Gensler, S., Dekimpe, M. G., & Skiera, B. (2007). Evaluating channel performance in multi-channel environments. Journal of Retailing and Consumer Services, 14(1), 17–23. https://doi.org/10.1016/j.jretconser.2006.02.001

George, B. P., & Yaoyuneyong, G. (2010). Impulse buying and cognitive dissonance: A study conducted among the spring break student shoppers. Young Consumers.

Ghosh, D. (2020). Customer satisfaction towards fast food through online food delivery (OFD) services: An exploratory study. International Journal of Management (IJM), 11(10), 645–658.

Gibson, D. C. (1995). Public relations considerations of consumer product recall. Public Relations Review, 21(3), 225–240. https://doi.org/10.1016/0363-8111(95)90023-3

Giddens, A. (1984). The constitution of society: Outline of the theory of structuration (1st ed.). CA: University of California Press.

Gilsenan, K. (2018, December 3). Online Shopping Returns: Everything Retailers Need to Know. GWI. https://blog.gwi.com/chart-of-the-week/online-shopping-returns/

Gkikas, D. C., & Theodoridis, P. K. (2022). AI in Consumer Behavior. In M. Virvou, G. A. Tsihrintzis, L. H. Tsoukalas, & L. C. Jain (Eds.), Advances in Artificial Intelligence-based Technologies: Selected Papers in Honour of Professor Nikolaos G. Bourbakis—Vol. 1 (pp. 147–176). Springer International Publishing. https://doi.org/10.1007/978-3-030-80571-5_10

Go-Globe. (2018). Shopping apps usage - statistics and trends [Infographic]. Retrieved 15 January 2020 from https://www.go-globe.hk/blog/shopping-apps-usage/

Gounaris, S. P., Tzempelikos, N. A., & Chatzipanagiotou, K. (2007). The Relationships of Customer-Perceived Value, Satisfaction, Loyalty and Behavioral Intentions. Journal of Relationship Marketing, 6(1), 63–87. https://doi.org/10.1300/J366v06n01_05

Grace, D. (2005). Consumer disposition toward satisfaction (CDS): scale development and validation. Journal of Marketing Theory and Practice, 13(2), 20-31.

Greatorex, M., & Mitchell, V. W. (1994). Modelling consumer risk reduction preferences from perceived loss data. Journal of Economic Psychology, 15(4), 669–685. https://doi.org/10.1016/0167-4870(94)90017-5

Greitemeyer, T., & Weiner, B. (2008). Asymmetrical effects of reward and punishment on attributions of morality. The Journal of Social Psychology, 148(4), 407-422.

Griffis, S. E., Rao, S., Goldsby, T. J., & Niranjan, T. T. (2012). The customer consequences of returns in online retailing: An empirical analysis. Journal of Operations Management, 30(4), 282–294. https://doi.org/10.1016/j.jom.2012.02.002

Gu, Z. (Jane), & Tayi, G. K. (2015). Consumer mending and online retailer fit-uncertainty mitigating strategies. Quantitative Marketing and Economics, 13(3), 251–282. https://doi.org/10.1007/s11129-015-9161-2

Guerra-Carrillo, B., Katovich, K., & Bunge, S. A. (2017). Does higher education hone cognitive functioning and learning efficacy? Findings from a large and diverse sample. PLOS ONE, 12(8), e0182276. https://doi.org/10.1371/journal.pone.0182276

Guide, V. D. R. (2000). Production planning and control for remanufacturing: Industry practice and research needs. Journal of Operations Management, 18(4), 467–483. https://doi.org/10.1016/S0272-6963(00)00034-6

Guide, V. D. R., Souza, G. C., Van Wassenhove, L. N., & Blackburn, J. D. (2006). Time value of commercial product returns. Management Science, 52(8), 1200–1214.

Gunasekara, L., Robb, D. J., & Zhang, A. (2023). Used product acquisition, sorting and disposition for circular supply chains: Literature review and research directions. International Journal of Production Economics, 260, 108844. https://doi.org/10.1016/j.ijpe.2023.108844

Gupta, A. (2014). E-Commerce: Role of E-Commerce in today's business. International Journal of Computing and Corporate Research, 4(1), 1–8.

Gustafsson, E., Jonsson, P., & Holmström, J. (2021). Reducing retail supply chain costs of product returns using digital product fitting. International Journal of Physical Distribution & Logistics Management, 51(8), 877–896. https://doi.org/10.1108/IJPDLM-10-2020-0334

Ha, H. Y. (2002). The effects of consumer risk perception on pre-purchase information in online auctions: Brand, word-of-mouth, and customized information. Journal of Computer-Mediated Communication, 8(1), JCMC813.

Haarlander, L. (2001). Diminishing returns: Target, home depot tighten return policies. The Buffalo News, 17(September), B1.

Hajli, N. (2015). Social commerce constructs and consumer's intention to buy. International Journal of Information Management, 35(2), 183–191. https://doi.org/10.1016/j.ijinfomgt.2014.12.005

Haley Messenger. (2021, January 12). Record-breaking holiday returns expected as consumers remain wary of exchanging gifts in-store. NBC News. https://www.nbcnews.com/business/consumer/record-breaking-holiday-returns-expected-consumers-remain-wary-exchanging-gifts-n1253975

Halzack, S. (2021, October 23). The surprising psychology of shoppers and return policies. Washington Post. https://www.washingtonpost.com/news/business/wp/2016/01/22/the-surprising-psychology-of-shoppers-and-return-policies/

Hamilton, L. (2016). How your return policy can affect customer retention. Retrieved from https://termsfeed.com/blog/how-return-policy-affect-customer-retention/.

Hanaysha, J. (2017). An Examination of Marketing Mix Elements and Customer Retention in Malaysian Retail Market. American Journal of Marketing Research, 3, 1–7.

Harris, L. C. (2010). Fraudulent consumer returns: Exploiting retailers' return policies. European Journal of Marketing, 44(6), 730–747. https://doi.org/10.1108/03090561011032694

Hartmans, A. (2022a, January 8). Shoppers are expected to return up to $120 billion worth of holiday gifts this year—The process is costly to retailers, annoying to consumers, and harmful to the planet. Business Insider. https://www.businessinsider.com/what-happens-to-returned-products-restock-resale-landfill-2022-1

Hartmans, A. (2022b, November 28). Over 60% of people who shop online are 'bracketing' their online purchases—And it's creating a logistical nightmare for retailers. Business Insider. https://www.businessinsider.com/bracketing-online-shopping-downsides-explained-2021-11

Hasan, A., Khan, M., ur Rehman, K., Ali, I., & Sobia, W. (2009). Consumer's Trust in the Brand: Can it be built through Brand Reputation, Brand Competence and Brand Predictability. International Business Research, 3. https://doi.org/10.5539/ibr.v3n1p43

Hasan, G., & Pattikawa, S. N. (2022). The Effect of Online Trust and Repurchase Intention on Consumer Behavior in Online Shopping at E-Commerce. Conference on Business, Social Sciences and Technology (CoNeScINTech), 2(1), Article 1.

Hausmann, L., Herrmann, N., Krause, J., & Netzer, T. (2014). Same-day delivery: The next evolutionary step in parcel logistics. Retrieved 15 December 2020 from https://www.mckinsey.com/industries/travel-transport-and-logistics/our-insights/same-day-delivery-the-next-evolutionary-step-in-parcel-logistics

He, Y., Xu, Q., & Wu, P. (2020). Omnichannel retail operations with refurbished consumer returns. International Journal of Production Research, 58(1), 271–290. https://doi.org/10.1080/00207543.2019.1629672

Hedin, N. (2018, October 2). Global Consumer Survey. https://insights.centiro.com/global-consumer-survey

Heim, G. R., & Field, J. M. (2007). Process drivers of e-service quality: Analysis of data from an online rating site. Journal of Operations Management, 25(5), 962–984. https://doi.org/10.1016/j.jom.2006.10.002

Heiman, A., Just, D. R., McWilliams, B. P., & Zilberman, D. (2015). A prospect theory approach to assessing changes in parameters of insurance contracts with an application to money-back guarantees. Journal of Behavioral and Experimental Economics, 54, 105–117. https://doi.org/10.1016/j.socec.2014.11.006

Heiman, A., McWilliams, B., & Zilberman, D. (2001). Demonstrations and money-back guarantees: Market mechanisms to reduce uncertainty. Journal of Business Research, 54(1), 71–84. https://doi.org/10.1016/S0148-2963(00)00181-8

Hellemann, N. J., & Brettel, M. (2016). The Impact of Website Stimuli on Product Returns in Online Retailing: A Structured Abstract. In K. K. Kim (Ed.), Celebrating America's Pastimes: Baseball, Hot Dogs, Apple Pie and Marketing? (pp. 71–75). Springer International Publishing. https://doi.org/10.1007/978-3-319-26647-3_10

Henderson, J. A. J., & Twerski, A. D. (1997). Achieving Consensus on Defective Product Design. Cornell Law Review, 83, 867.

Hennig-Thurau, T., Gwinner, K. P., Walsh, G., & Gremler, D. D. (2004). Electronic word-of-mouth via consumer-opinion platforms: What motivates consumers to articulate themselves on the Internet? Journal of Interactive Marketing, 18(1), 38–52. https://doi.org/10.1002/dir.10073

Herbst, K. C., Finkel, E. J., Allan, D., & Fitzsimons, G. M. (2012). On the dangers of pulling a fast one: Advertisement disclaimer speed, brand trust, and purchase intention. Journal of consumer research, 38(5), 909-919.

Herbst, K. C., Hannah, S. T., & Allan, D. (2013). Advertisement disclaimer speed and corporate social responsibility:"Costs" to consumer comprehension and effects on brand trust and purchase intention. Journal of business ethics, 117, 297-311.

Herpin, T. (2021). The biggest ecommerce markets in 2021. Retrieved 10 October 2022 from https://www.ecommerce-nation.com/top-ecommerce-markets/

Hess, J. D., Chu, W., & Gerstner, E. (1996). Controlling product returns in direct marketing. Marketing Letters, 7(4), 307–317. https://doi.org/10.1007/BF00435538

Heuer, D., Brettel, M., & Kemper, J. (2015). Brand competition in fashion e-commerce. Electronic Commerce Research and Applications, 14(6), 514-522.

Hjort, K. (2010). Returns Avoidance and Gatekeeping to Enhance E-commerce Performance. https://urn.kb.se/resolve?urn=urn:nbn:se:hb:diva-3574

Hjort, K., & Ericsson, D. (2010). An application of Avoidance and Gatekeeping to manage returns in a distance selling setting. Nordic Researchers in Logistics, Kolding, Denmark, June 10-11, 2010. https://urn.kb.se/resolve?urn=urn:nbn:se:hb:diva-6490

Hjort, K., & Lantz, B. (2016). The impact of returns policies on profitability: A fashion e-commerce case. Journal of Business Research, 69(11), 4980–4985. https://doi.org/10.1016/j.jbusres.2016.04.064

Hjort, K., Hellström, D., Karlsson, S., & Oghazi, P. (2019). Typology of practices for managing consumer returns in internet retailing. International Journal of Physical Distribution & Logistics Management, 49(7), 767–790. https://doi.org/10.1108/IJPDLM-12-2017-0368

Hjort, K., Lantz, B., Ericsson, D., & Gattorna, J. (2013). Customer segmentation based on buying and returning behaviour. International Journal of Physical Distribution & Logistics Management, 43(10), 852-865.

Ho, A., Sharma, P., & Hosie, P. (2015). Exploring customers' zone of tolerance for B2B professional service quality. Journal of Services Marketing, 29(5), 380-392.

Hoehle, H., Aloysius, J. A., Chan, F., & Venkatesh, V. (2018). Customers' tolerance for validation in omnichannel retail stores: Enabling logistics and supply chain analytics. The International Journal of Logistics Management, 29(2), 704-722.

Holland, F. (2021, December 16). Retailers face rising holiday-return costs due to supply chain issues, a new report says. CNBC. https://www.cnbc.com/2021/12/16/retailers-face-rising-holiday-return-costs-a-new-cbre-optoro-report-says.html

Holloway, B. B., & Beatty, S. E. (2003). Service Failure in Online Retailing: A Recovery Opportunity. Journal of Service Research, 6(1), 92–105. https://doi.org/10.1177/1094670503254288

Hong, Y. (Kevin), & Pavlou, P. A. (2014). Product Fit Uncertainty in Online Markets: Nature, Effects, and Antecedents. Information Systems Research, 25(2), 328–344. https://doi.org/10.1287/isre.2014.0520

Hong, Y., & Pavlou, P. A. (2014). Product fit uncertainty in online markets: Nature, effects, and antecedents. Information systems research, 25(2), 328-344.

Hsu, C. L., Chang, K. C., & Chen, M. C. (2012). The impact of website quality on customer satisfaction and purchase intention: perceived playfulness and perceived flow as mediators. Information Systems and e-Business Management, 10, 549-570.

Hsu, C. L., Yu, L. C., & Chang, K. C. (2017). Exploring the effects of online customer reviews, regulatory focus, and product type on purchase intention: Perceived justice as a moderator. Computers in Human Behavior, 69, 335-346.

Hübner, A., Wollenburg, J., & Holzapfel, A. (2016). Retail logistics in the transition from multi-channel to omni-channel. International Journal of Physical Distribution & Logistics Management, 46(6/7), 562–583. https://doi.org/10.1108/IJPDLM-08-2015-0179

Hüttl-Maack, V., Pick, D., & Gierl, H. (2019). Handle with care! How majority cues can reduce the negative effects of warnings of foreseeable product failures. Review of Managerial Science, 13, 689-723.

Ibarra, O. (2014). Retail strategy and policy in emerging markets (Colombia). In Retailing in Emerging Markets (pp. 179–197). Routledge.

Imam, F. (2013). Gender differences in impulsive buying behavior and post-purchasing dissonance under incentive conditions. Journal of Business Strategies, 7(1), 23.

Inbound Logistics. (2014, February 28). Managing Retail Returns: The Good, the Bad, and the Ugly. Inbound Logistics. https://www.inboundlogistics.com/articles/managing-retail-returns-the-good-the-bad-and-the-ugly/

Independent. (2023, May 3). Managing online returns: The challenges retailers face today. The Independent. https://www.independent.co.uk/news/business/business-reporter/returns-online-shopping-customer-experience-retail-b2330439.html

Insight Quality Services. (2021, April 13). Incoming Materials Inspection: Key Considerations for Quality. Insight Quality Services. https://insight-quality.com/handling-incoming-materials/

Intelligence, I. (2021, July 10). Inmar Intelligence Survey Reveals that a Good Return Experience is a High Priority for Online Shoppers. GlobeNewswire News Room. https://www.globenewswire.com/news-release/2021/10/07/2310189/0/en/Inmar-Intelligence-Survey-Reveals-that-a-Good-Return-Experience-is-a-High-Priority-for-Online-Shoppers.html

Invisible Commerce. (2023, May 15). Repackaging Returned Products: Best Practices and Common Mistakes. Invisible Commerce. https://www.invisiblecommerce.com/repackaging-returned-products-best-practices-and-common-mistakes/

Ivanova, I. (2020). Those holiday returns come with a massive environmental footprint. Retrieved 15 August 2022 from https://www.cbsnews.com/news/holiday-returns-evironmental-costs-shipping/

Jablonsky, S. F., & DeVries, D. L. (1972). Operant conditioning principles extrapolated to the theory of management. Organizational Behavior and Human Performance, 7(2), 340-358.

Jack, L., Frei, R., & Krzyzaniak, S.-A. C. (2019). Buy online, return to store: the challenges and opportunities of product returns in a multichannel environment. ECR Shrink Group.

Jackson, J. E., & Xu, X. (2022). Does Scarcity Add Value in Influencing Consumers in the Try-Before-You-Buy Model? International Journal of Electronic Commerce, 26(1), 25–48. https://doi.org/10.1080/10864415.2021.2010004

Jacoby, J., Speller, D. E., & Kohn, C. A. (1974). Brand Choice Behavior as a Function of Information Load. Journal of Marketing Research, 11(1), 63–69. https://doi.org/10.1177/002224377401100106

Jain, N. K., Gajjar, H., Shah, B. J., & Sadh, A. (2015). A Conceptual Framework for Measuring E-fulfillment Dimensions: A Consumer Perspective. Journal of Internet Commerce, 14(3), 363–383. https://doi.org/10.1080/15332861.2015.1080056

Jaiswal, A. K., Niraj, R., Park, C. H., & Agarwal, M. K. (2018). The effect of relationship and transactional characteristics on customer retention in emerging online markets. Journal of Business Research, 92, 25-35.

Janakiraman, N., & Ordóñez, L. (2012). Effect of effort and deadlines on consumer product returns. Journal of Consumer Psychology, 22(2), 260–271. https://doi.org/10.1016/j.jcps.2011.05.002

Janakiraman, N., Syrdal, H. A., & Freling, R. (2016). The Effect of Return Policy Leniency on Consumer Purchase and Return Decisions: A Meta-analytic Review. Journal of Retailing, 92(2), 226–235. https://doi.org/10.1016/j.jretai.2015.11.002

Javed, M. K., Wu, M., Qadeer, T., Manzoor, A., Nadeem, A. H., & Shouse, R. C. (2020). Role of Online Retailers' Post-sale Services in Building Relationships and Developing Repurchases: A Comparison-Based Analysis Among Male and Female Customers. Frontiers in Psychology, 11. https://www.frontiersin.org/articles/10.3389/fpsyg.2020.594132

Jena, S. K., & Meena, P. (2022). Shopping in the omnichannel supply chain under price competition and product return. Journal of Retailing and Consumer Services, 65, 102848.

Jeng, S.-P. (2017). Increasing customer purchase intention through product return policies: The pivotal impacts of retailer brand familiarity and product categories. Journal of Retailing and Consumer Services, 39, 182–189. https://doi.org/10.1016/j.jretconser.2017.08.013

JFdaily. (2017). Rejection of returned goods is a 'pain point' of online shopping. Can the newly implemented '7-day no-reason return' rule improve it? https://www.jfdaily.com/wx/detail.do?id=49016

Jiang, D., Li, X., Aneja, Y. P., Wang, W., & Tian, P. (2022). Integrating order delivery and return operations for order fulfillment in an online retail environment. Computers & Operations Research, 143, 105749. https://doi.org/10.1016/j.cor.2022.105749

Jiang, P. (2003). Understanding customers' intention to seek for a better deal in electronic marketplace: the role of tolerance for sacrifice gap. Journal of Internet Commerce, 2(3), 39-63.

Jiang, P., & Rosenbloom, B. (2005). Customer intention to return online: Price perception, attribute-level performance, and satisfaction unfolding over time. European Journal of Marketing, 39(1/2), 150–174. https://doi.org/10.1108/03090560510572061

Jiang, P., & Rosenbloom, B. (2014). Consumer Knowledge and External Pre-Purchase Information Search: A Meta-Analysis of the Evidence. In Consumer Culture Theory (Vol. 15, pp. 353–389). Emerald Group Publishing Limited. https://doi.org/10.1108/S0885-2111(2013)0000015023

Ju, I. (2017). The effects of advertising skepticism in consumer prescription drug advertising: The moderating role of risk disclosure location. International Journal of Pharmaceutical and Healthcare Marketing, 11(4), 395-411.

Ju, I., Ohs, J. E., & Park, J. S. (2019). Consumer's regulatory knowledge of prescription drug advertising and health risk awareness: the moderating role of risk information prominence. Health Communication.

Ju, I., Ohs, J. E., & Park, J. S. (2020). Consumer's Regulatory Knowledge of Prescription Drug Advertising and Health Risk Awareness: The Moderating Role of Risk Information Prominence. Health Communication, 35(6), 696–706. https://doi.org/10.1080/10410236.2019.1584738

Kalakota, R., & Whinston, A. B. (1996). Frontiers of electronic commerce. Addison Wesley Longman Publishing Co., Inc.

Kang, M. (2023). Comprehensive Return Policy, A Development Direction for Return Services. Frontiers in Business, Economics and Management, 8(2), Article 2. https://doi.org/10.54097/fbem.v8i2.6870

Kaplan, M. (2018). Retailers (including Amazon) crack down on return fraud. Retrieved 15 December 2020 from https://www.practicalecommerce.com/retailers-including-amazon-crack-return-fraud

Kardes, F. R., Cline, T. W., & Cronley, M. L. (2011). Consumer behavior: Science and practice, Internationalth edn. South Western College, Cengage Learning, Mason.

Karlsson, S. (2020). Towards returns management strategies in internet retailing [PhD Thesis]. Lund University.

Kaya, B., Behravesh, E., Abubakar, A. M., Kaya, O. S., & Orús, C. (2019). The Moderating Role of Website Familiarity in the Relationships Between e-Service Quality, e-Satisfaction and e-Loyalty. Journal of Internet Commerce, 18(4), 369–394. https://doi.org/10.1080/15332861.2019.1668658

Kedia, A., Kusumastuti, D., & Nicholson, A. (2019). Establishing Collection and Delivery Points to Encourage the Use of Active Transport: A Case Study in New Zealand Using a Consumer-Centric Approach. Sustainability, 11(22), Article 22. https://doi.org/10.3390/su11226255

Keenan, M. (2021, November 23). Retail Returns: How to Manage Returns and Exchanges. Shopify. https://www.shopify.com/retail/retail-returns-exchanges

Keith, S. (2014). Back to the 1990s? Comparing the discourses of 20th-and 21st-century digital image ethics debates. Visual Communication Quarterly, 21(2), 61-71.

Keng Kau, A., Tang, Y. E., & Ghose, S. (2003). Typology of onlineshoppers. Journal of Consumer Marketing, 20(2), 139–156. https://doi.org/10.1108/07363760310464604

Kennedy, J. P. (2020). Counterfeit Products Online. In T. J. Holt & A. M. Bossler (Eds.), The Palgrave Handbook of International Cybercrime and Cyberdeviance (pp. 1001–1024). Springer International Publishing. https://doi.org/10.1007/978-3-319-78440-3_46

Kenton, W. (2022, November 24). Warranty Definition, Types, Example, and How It Works. Investopedia. https://www.investopedia.com/terms/w/warranty.asp

Ketzenberg, M. E., & Zuidwijk, R. A. (2009). Optimal Pricing, Ordering, and Return Policies for Consumer Goods. Production and Operations Management, 18(3), 344–360. https://doi.org/10.1111/j.1937-5956.2009.01017.x

Ketzenberg, M. E., Abbey, J. D., Heim, G. R., & Kumar, S. (2020). Assessing customer return behaviors through data analytics. Journal of Operations Management, 66(6), 622–645. https://doi.org/10.1002/joom.1086

Kim, J. H., & Jang, S. S. (2014). The fading affect bias: Examining changes in affect and behavioral intentions in restaurant service failures and recoveries. International Journal of Hospitality Management, 40, 109-119.

Kim, J., & Wansink, B. (2012). How Retailers' Recommendation and Return Policies Alter Product Evaluations. Journal of Retailing, 88(4), 528–541. https://doi.org/10.1016/j.jretai.2012.04.004

Kiniulis, M. (2021a, June 10). E-commerce Product Return Rate – Statistics and Trends (2023). https://www.markinblog.com/ecommerce-product-return-rates/

Kiniulis, M. (2021b, June 10). What Are E-commerce Product Return Rates? https://www.markinblog.com/ecommerce-product-return-rates/

Kirmani, A., & Rao, A. R. (2000). No pain, no gain: A critical review of the literature on signaling unobservable product quality. Journal of Marketing, 64(2), 66–79.

Kissmetrics. (2016). How do colors affect purchases?. Retrieved from https://neilpatel.com/blog/color-psychology/.

Kohan, S. E. (2022, October 30). Consumers Say Hassle-Free Returns Are More Important Than Ever. Forbes.

https://www.forbes.com/sites/shelleykohan/2022/10/30/consumers-say-hassle-free-returns-are-more-important-than-ever/

Koopmans, M. (2017). Perspectives on Complexity, Its Definition and Applications in the Field. Complicity: An International Journal of Complexity and Education, 14(1). https://doi.org/10.29173/cmplct27611

Koslow, S. (2000). Can the truth hurt? How honest and persuasive advertising can unintentionally lead to increased consumer skepticism. Journal of consumer Affairs, 34(2), 245-267.

Koufaris, M., Kambil, A., & Labarbera, P. A. (2001). Consumer Behavior in Web-Based Commerce: An Empirical Study. International Journal of Electronic Commerce, 6(2), 115–138. https://doi.org/10.1080/10864415.2001.11044233

Kozlowska, H. (2018, August 13). Shoppers are buying clothes just for the Instagram pic, and then returning them. Quartz. https://qz.com/quartzy/1354651/shoppers-are-buying-clothes-just-for-the-instagram-pic-and-then-return-them

KPMG. (2017). Future-proof your reverse logistics (p. 20). KPMG International. https://assets.kpmg.com/content/dam/kpmg/id/pdf/2017/08/id-future-proof-reverse-logistics-2august.pdf

Kukolj, G. (2020, August 26). The Returns Management Process: How to Make the Most Out of Returns and Exchanges. OptimoRoute. https://optimoroute.com/returns-management-process/

Kumar, V., George, M., & Pancras, J. (2008). Cross-buying in retailing: Drivers and consequences. Journal of Retailing, 84(1), 15–27. https://doi.org/10.1016/j.jretai.2008.01.007

kumari, V. (2023, June 8). Streamlining Your Logistics: The Convenience of Door-to-Door Pick-up and Delivery Services. Medium. https://medium.com/@vanyak820/streamlining-your-logistics-the-convenience-of-door-to-door-pick-up-and-delivery-services-d3dbf48a987c

Lala, V., & Chakraborty, G. (2015). Impact of consumers' effort investments on buying decisions. Journal of Consumer Marketing, 32(2), 61–70.

Lambert, D. M. (2004). The Eight Essential Supply Chain Managament Processes. SUPPLY CHAIN MANAGEMENT REVIEW, V. 8, NO. 6 (SEPT. 2004), P. 18-26: ILL, 8(6). https://trid.trb.org/view/749012

Lambert, D. M. (2008). Supply chain management: Processes, partnerships, performance. Supply Chain Management Inst.

Lambert, S., Riopel, D., & Abdul-Kader, W. (2011). A reverse logistics decisions conceptual framework. Computers & Industrial Engineering, 61(3), 561–581. https://doi.org/10.1016/j.cie.2011.04.012

Landin, L., & Harrysson, H. (2015). A Total Cost Analysis of the Return Process Online and in Store.

Lantz, B., & Hjort, K. (2013). Real e-customer behavioural responses to free delivery and free returns. Electronic Commerce Research, 13(2), 183-198.

Leberman, D. (2015, March 26). Buy Online Return In Store (BORIS) and Buy Online Pickup In Store (BOPIS): The Two Acronyms All Small Businesses Should Know. https://www.inc.com/dan-leberman/buy-online-return-in-store-boris-and-buy-online-pickup-in-store-bopis-the-two-ac.html

Lee, D. H. (2015). An Alternative Explanation of Consumer Product Returns from the Postpurchase Dissonance and Ecological Marketing Perspectives. Psychology & Marketing, 32(1), 49–64. https://doi.org/10.1002/mar.20757

Lee, S. H., & Cotte, J. (2009). Post-purchase consumer regret: Conceptualization and development of the PPCR scale. ACR North American Advances.

Lee, S., & Yi, Y. (2017). “Seize the Deal, or Return It Losing Your Free Gift”: The Effect of a Gift-With-Purchase Promotion on Product Return Intention. Psychology & marketing, 34(3), 249-263.

Lee, S., & Yi, Y. (2019). “Retail is detail! Give consumers a gift rather than a bundle”: Promotion framing and consumer product returns. Psychology & Marketing, 36(1), 15-27.

Lee, S., & Yi, Y. (2022). Is returning a product worth my time? The impact of time cues on consumer product returns. Psychology & Marketing, 39(7), 1413–1427. https://doi.org/10.1002/mar.21662

Leeuw, S. de, Minguela-Rata, B., Sabet, E., Boter, J., & Sigurðardóttir, R. (2016). Trade-offs in managing commercial consumer returns for online apparel retail. International Journal of Operations & Production Management, 36(6), 710–731. https://doi.org/10.1108/IJOPM-01-2015-0010

Lehmann, E. L. (1958). Significance level and power. The Annals of Mathematical Statistics, 29(4), 1167-1176.

Lesonsky, R. (2016, February 10). How a Lenient Return Policy Can Actually Boost Sales. Small Business Trends. https://smallbiztrends.com/2016/02/lenient-return-policy-boost-sales.html

Levi, D. (2021, October 19). 8 Proven Tactics to Reduce Product Returns. TechSee. https://techsee.me/blog/how-to-reduce-returns/

Levin, A. M., Dato?on, M. C., & Manolis, C. (2007). Deterring illegal downloading: The effects of threat appeals, past behavior, subjective norms, and attributions of harm. Journal of Consumer Behaviour: An International Research Review, 6(2?3), 111-122.

Li, C.-Y., & Ku, Y.-C. (2018). The power of a thumbs-up: Will e-commerce switch to social commerce? Information & Management, 55(3), 340–357. https://doi.org/10.1016/j.im.2017.09.001

Li, H., Fang, Y., Wang, Y., Zeng, J., Zhang, J., & Lin, Z. (2021). Web Technologies, Page Views and Product Returns: Investigating a Mediated Model with Evidence from an E-Marketplace (SSRN Scholarly Paper 3772059). https://papers.ssrn.com/abstract=3772059

Li, M., & Choudhury, A. H. (2021). Using website information to reduce postpurchase dissonance: A mediated moderating role of perceived risk. Psychology & Marketing, 38(1), 56–69. https://doi.org/10.1002/mar.21409

Li, X., Ma, B., & Chu, H. (2021). The impact of online reviews on product returns. Asia Pacific Journal of Marketing and Logistics, 33(8), 1814-1828.

Li, Y., Feng, C., & Liu, H. (2021). Package-Free Returns: A Trend in Green Ecommerce. In F. J. Martínez-López & D. López López (Eds.), Advances in Digital Marketing and eCommerce (pp. 330–334). Springer International Publishing. https://doi.org/10.1007/978-3-030-76520-0_34

Li, Y., Li, G., Tayi, G. K., & Cheng, T. C. E. (2021). Return shipping insurance: Free versus for-a-fee? International Journal of Production Economics, 235, 108110. https://doi.org/10.1016/j.ijpe.2021.108110

Li, Y., Xu, L., & Li, D. (2013b). Examining relationships between the return policy, product quality, and pricing strategy in online direct selling. International Journal of Production Economics, 144(2), 451–460. https://doi.org/10.1016/j.ijpe.2013.03.013

Li, Y., Xu, L., Choi, T.-M., & Govindan, K. (2014). Optimal advance-selling strategy for fashionable products with opportunistic consumers returns. IEEE Transactions on Systems, Man, and Cybernetics: Systems, 44(7), 938–952. Scopus. https://doi.org/10.1109/TSMC.2013.2280558

Liao, T.-H., & Keng, C.-J. (2013). Online shopping delivery delay: Finding a psychological recovery strategy by online consumer experiences. Computers in Human Behavior, 29(4), 1849–1861. https://doi.org/10.1016/j.chb.2013.03.004

Liberto, D. (2023, May 29). What Are Consumer Protection Laws? Investopedia. https://www.investopedia.com/articles/pf/10/know-your-consumer-protection-laws.asp

Lim, H., & Dubinsky, A. J. (2004). Consumers' perceptions of e-shopping characteristics: An expectancy-value approach. Journal of Services Marketing, 18(7), 500–513. https://doi.org/10.1108/08876040410561839

Lim, S. H., Lee, S., & Kim, D. J. (2017). Is online consumers' impulsive buying beneficial for e-commerce companies? An empirical investigation of online consumers' past impulsive buying behaviors. Information Systems Management, 34(1), 85-100.

Lin, C.-Y., Chao, Y.-C., & Tang, T.-W. (2017). Why not be "smarter"? Examining the factors that influence the behavioral intentions of non-smartphone users. Industrial Management & Data Systems, 117(1), 32-49.

Lin, D., Lee, C. K. M., Siu, M. K., Lau, H., & Choy, K. L. (2020). Analysis of customers' return behaviour after online shopping in China using SEM. Industrial Management & Data Systems, 120(5), 883–902. https://doi.org/10.1108/IMDS-05-2019-0296

Lin, L., & Chen, C. (2006). The influence of the country-of-origin image, product knowledge and product involvement on consumer purchase decisions: An empirical study of

insurance and catering services in Taiwan. Journal of Consumer Marketing, 23(5), 248–265. https://doi.org/10.1108/07363760610681655

Lind, E. A., & Tyler, T. R. (1988). The Social Psychology of Procedural Justice. Springer Science & Business Media.

Lindsey, K. (2016, July 12). Why retail has a growing reverse supply chain problem—And how to fix it. Retail Dive. https://www.retaildive.com/news/why-retail-has-a-growing-reverse-supply-chain-problemand-how-to-fix-it/422136/

Liu, D. (2014). Network site optimization of reverse logistics for E-commerce based on genetic algorithm. Neural Computing and Applications, 25(1), 67–71. https://doi.org/10.1007/s00521-013-1448-1

Lowry, P. B., Moody, G., Vance, A., Jensen, M., Jenkins, J., & Wells, T. (2012). Using an elaboration likelihood approach to better understand the persuasiveness of website privacy assurance cues for online consumers. Journal of the American Society for Information Science and Technology, 63(4), 755–776. https://doi.org/10.1002/asi.21705

Lucier, C. A., & Gareau, B. J. (2019). Electronic waste recycling and disposal: An overview. Assessment and Management of Radioactive and Electronic Wastes, 1–12.

Lucking-Reiley, D. (2000). Auctions on the Internet: What's Being Auctioned, and How? The Journal of Industrial Economics, 48(3), 227–252. https://doi.org/10.1111/1467-6451.00122

Lysenko-Ryba, K. (2017). The Impact of Reverse Logistics on Customers Satisfaction. Przedsiębiorczość i Zarządzanie, 18(8.2), 137–146.

Lysenko-Ryba, K., Zimon, D., Madzík, P., & Širová, E. (2022). Examination of aspects of pro-consumer refund system. The TQM Journal, Forthcoming.

Ma, S., Guo, J., & Zhang, H. (2019). Policy Analysis and Development Evaluation of Digital Trade: An International Comparison. China & World Economy, 27(3), 49–75. https://doi.org/10.1111/cwe.12280

Mackie, J. (2023, February 18). Return and Refund Laws in the EU. TermsFeed. https://www.termsfeed.com/blog/return-refund-laws-eu/

Mahapatra, S. N. (2014). An Empirical Analysis of Cause of Consumer Dissatisfaction and the Reasons Why Consumers Enduring Dissatisfaction. Serbian Journal of Management, 9(1), Article 1. https://doi.org/10.5937/sjm9-5181

Makkonen, M., Frank, L., & Kemppainen, T. (2021). The Effects of Consumer Demographics and Payment Method Preference on Product Return Frequency and Reasons in Online Shopping. Bled eConference. https://doi.org/10.18690/978-961-286-385-9.2

Mandal, P., Basu, P., & Saha, K. (2021). Forays into omnichannel: an online retailer's strategies for managing product returns. European Journal of Operational Research, 292(2), 633-651.

Marcellis-Warin, N. de, & Teodoresco, S. (2012). Corporate Reputation: Is Your Most Strategic Asset at Risk? CIRANO Burgundy Reports, Article 2012rb–01. https://ideas.repec.org//p/cir/cirbur/2012rb-01.html

Martín?Ruiz, D., & Rondán?Cataluña, F. J. (2008). The nature and consequences of price unfairness in services: A comparison to tangible goods. International Journal of Service Industry Management.

Martínez-López, F. J., Feng, C., Li, Y., & López-López, D. (2022). Using instant refunds to improve online return experiences. Journal of Retailing and Consumer Services, 68, 103067. https://doi.org/10.1016/j.jretconser.2022.103067

Martínez-López, F. J., Feng, C., Li, Y., & Mata, M. S. (2022). Restoring the buyer-seller relationship through online return shipping: The role of return shipping method and return shipping fee. Electronic Commerce Research and Applications, 54, 101170.

Mathu, K. (2021). Supply Chain Management as a Competitive Advantage of Fast-Moving Consumer Goods SMEs in South Africa. Journal of Energy and Natural Resources, 10(1), 33.

Max. (2017, June 20). 4 Types of Consumer Products and Marketing Considerations—Convenience, Shopping, Specialty and Unsought Products. Marketing-Insider. https://marketing-insider.eu/4-types-of-consumer-products/

Mccoll-Kennedy, J. R., & Sparks, B. A. (2003). Application of Fairness Theory to Service Failures and Service Recovery. Journal of Service Research, 5(3), 251–266. https://doi.org/10.1177/1094670502238918

McCollough, M. A., & Gremler, D. D. (2004). A conceptual model and empirical examination of the effect of service guarantees on post?purchase consumption evaluations. Managing Service Quality: An International Journal.

McGregor, L. (2018). Top 5 e-commerce challenges and how to overcome them. Retrieved 30 March 2021 from https://blog.edesk.com/resources/e-commerce-challenges-trends

McKinsey & Company. (2021, May 25). Improving returns management for apparel companies. https://www.mckinsey.com/industries/retail/our-insights/returning-to-order-improving-returns-management-for-apparel-companies

Mcleod, S. (2022, November 3). What Is Cognitive Dissonance? Definition and Examples. https://www.simplypsychology.org/cognitive-dissonance.html

Meek, A. (2020, May 14). 7 Common Mistakes with Product Assembly and Installation Instructions. BILT Intelligent Instructions®. https://biltapp.com/news/7-common-mistakes-with-product-assembly-and-installation-instructions/

Meilatinova, N. (2021). Social commerce: Factors affecting customer repurchase and word-of-mouth intentions. International Journal of Information Management, 57, 102300. https://doi.org/10.1016/j.ijinfomgt.2020.102300

Messer, J. (2021, July 10). Try Before You Buy: The Next Big Thing In Ecommerce? ShipStation. https://www.shipstation.com/blog/try-before-you-buy/

Millward, S. (2014, February 18). New regulations force China's e-stores to offer hassle-free, 7-day product returns. Tech in Asia. https://www.techinasia.com/nee-regulations-for-china-ecommerce-7day-item-returns

Min, D. J., & Cunha Jr, M. (2019). The influence of horizontal and vertical product attribute information on decision making under risk: The role of perceived competence. Journal of business research, 97, 174-183.

Min, H., Ko, C. S., & Ko, H.-J. (2008). Managing product returns in customer-centric e-tail environments. International Journal of Services Technology and Management, 9(1), 51–70. https://doi.org/10.1504/IJSTM.2008.016811

Minnema, A., Bijmolt, T. H. A., Gensler, S., & Wiesel, T. (2016). To Keep or Not to Keep: Effects of Online Customer Reviews on Product Returns. Journal of Retailing, 92(3), 253–267. https://doi.org/10.1016/j.jretai.2016.03.001

Minnema, A., Bijmolt, T. H. A., Petersen, J. A., & Shulman, J. D. (2018). Managing Product Returns Within the Customer Value Framework. In R. W. Palmatier, V. Kumar, & C. M. Harmeling (Eds.), Customer Engagement Marketing (pp. 95–118). Springer International Publishing. https://doi.org/10.1007/978-3-319-61985-9_5

Mo, C. (2021, April 1). Product User Instructions Requirements in the European Union: An Overview. Compliance Gate. https://www.compliancegate.com/product-user-instructions-requirements-european-union/

Mofokeng, T. E. (2021). The impact of online shopping attributes on customer satisfaction and loyalty: Moderating effects of e-commerce experience. Cogent Business & Management, 8(1), 1968206. https://doi.org/10.1080/23311975.2021.1968206

Mohan, T. M., & Karpagam, T. (2020). AN EMPIRICAL STUDY ON EFFECT OF BRANDS ON PRODUCT RETURNS. ISBR MANAGEMENT JOURNAL ISSN (Online) - 2456-9062, 5(2). https://doi.org/10.52184/isbrmj.v5i2.89

Mollenkopf, D. A., Rabinovich, E., Laseter, T. M., & Boyer, K. K. (2007). Managing internet product returns: a focus on effective service operations. Decision Sciences, 38(2), 215-250.

Mollenkopf, D., Russo, I., & Frankel, R. (2007). The returns management process in supply chain strategy. International Journal of Physical Distribution & Logistics Management, 37(7), 568–592. https://doi.org/10.1108/09600030710776482

Mouawad, M., & Kleiner, B. H. (1996). New developments in customer service training. Managing Service Quality: An International Journal, 6(2), 49–56. https://doi.org/10.1108/09604529610109774

Moustakas, K., Nikolakis, G., Kostopoulos, K., Tzovaras, D., & Strintzis, M. G. (2007). Haptic rendering of visual data for the visually impaired. IEEE MultiMedia, 14(1), 62-72.

Mukherjee, I., & Goswami, B. (2017). The volatility of returns from commodity futures: Evidence from India. Financial Innovation, 3(1), 15. https://doi.org/10.1186/s40854-017-0066-9

Mukhopadhyay, S. K., & Setoputro, R. (2004). Reverse logistics in e-business: Optimal price and return policy. International Journal of Physical Distribution & Logistics Management, 34(1), 70–89. https://doi.org/10.1108/09600030410515691

Murdock, H. (2020). How to reduce ecommerce returns. Retrieved May 10, 2022 from https://www.threekit.com/blog/how-to-reduce-ecommerce-returns-part-1.

Muruganantham, G., & Bhakat, R. S. (2013). A review of impulse buying behavior. International Journal of Marketing Studies, 5(3), 149.

Nah, F. F. H. (2004). A study on tolerable waiting time: how long are web users willing to wait?. Behaviour & Information Technology, 23(3), 153-163.

Narang, U., & Shankar, V. (2019). Mobile App Introduction and Online and Offline Purchases and Product Returns. Marketing Science, 38(5), 756–772. https://doi.org/10.1287/mksc.2019.1169

Narvar. (2019, September 10). Narvar Global Study Finds Consumers Expect Easier Returns than Retailers Are Delivering. https://www.prnewswire.com/news-releases/narvar-global-study-finds-consumers-expect-easier-returns-than-retailers-are-delivering-300914602.html

Narvar. (2022a, July 12). Narvar Study Finds Nearly Two-Thirds of Customers Bend the Rules When It Comes to Returns. https://www.prnewswire.com/news-releases/narvar-study-finds-nearly-two-thirds-of-customers-bend-the-rules-when-it-comes-to-returns-301584365.html

Narvar. (2022b, October 31). Narvar Research Finds Nearly 25% of Consumers Will Pay for Product Returns in Exchange for Convenience. https://www.prnewswire.com/news-releases/narvar-research-finds-nearly-25-of-consumers-will-pay-for-product-returns-in-exchange-for-convenience-301663371.html

National Retail Federation. (2021a, January 11). $428 Billion in Merchandise Returned in 2020. NRF. http://nrf.com/media-center/press-releases/428-billion-merchandise-returned-2020

National Retail Federation. (2021b, January 11). Customer Returns in the Retail Industry. NRF. http://nrf.com/research/customer-returns-retail-industry

Needle, F. (2021, October 12). 10 Consumer Behavior Models (& Which One Applies to Your Business). https://blog.hubspot.com/service/consumer-behavior-model

Nel, J. D., & Badenhorst, A. (2020). A conceptual framework for reverse logistics challenges in e-commerce. International Journal of Business Performance Management, 21(1–2), 114–131. https://doi.org/10.1504/IJBPM.2020.106119

Netral News. (2021, January 28). The Number of Internet Users in the World Reaches 4.66 Billion. Netral.News. https://netral.news/en/the-number-of-internet-users-in-the-world-reaches-4-66-billion.html

NetSuite.com. (2021, January 14). A Guide to Reverse Logistics. Oracle NetSuite. https://www.netsuite.com/portal/resource/articles/inventory-management/reverse-logistics.shtml

Ng, Y. T., Lu, W.-F., Lee, H. M., & Song, B. (2013). Systematic Product Inspection and Verification to Improve Returned Product Recovery. In A. Y. C. Nee, B. Song, & S.-K. Ong (Eds.), Re-engineering Manufacturing for Sustainability (pp. 371–376). Springer. https://doi.org/10.1007/978-981-4451-48-2_61

Ngobo, P. (2004). Drivers of customers' cross-buying intentions. European Journal of Marketing, 38(9/10), 1129–1157. https://doi.org/10.1108/03090560410548906

Nicholson, M., Clarke, I., & Blakemore, M. (2002). 'One brand, three ways to shop': Situational variables and multichannel consumer behaviour. The International Review of Retail, Distribution and Consumer Research, 12(2), 131–148. https://doi.org/10.1080/09593960210127691

Nikbin, D., Ismail, I., Marimuthu, M., & Armesh, H. (2012). Perceived justice in service recovery and switching intention: Evidence from Malaysian mobile telecommunication industry. Management Research Review, 35(3/4), 309-325.

Nikiema, J., & Asiedu, Z. (2022). A review of the cost and effectiveness of solutions to address plastic pollution. Environmental Science and Pollution Research, 29(17), 24547–24573. https://doi.org/10.1007/s11356-021-18038-5

Nilsson, M., Olsson, S., & Bågmark, P. (2015, January). Stereoscopic 3D to reduce product uncertainty in e-commerce. In 2015 48th Hawaii International Conference on System Sciences (pp. 497-506). IEEE.

Nitse, P. S., Parker, K. R., Krumwiede, D., & Ottaway, T. (2004). The impact of color in the e-commerce marketing of fashions: an exploratory study. European Journal of Marketing, 38(7), 898-915.

NRF. (2022a). Retail Returns Increased to $761 Billion in 2021 as a Result of Overall Sales Growth. NRF. http://nrf.com/media-center/press-releases/retail-returns-increased-761-billion-2021-result-overall-sales-growth

NRF. (2022b, December 14). 2022 Retail Returns Rate Remains Flat at $816 Billion. NRF. https://nrf.com/media-center/press-releases/2022-retail-returns-rate-remains-flat-816-billion

Nshift Returns. (2023, August 1). Retailers convert 30% of returns to exchanges by going digital. https://nshift.com/blog/retailers-convert-30-of-returns-to-exchanges-by-going-digital

Nshift. (2021, December 1). Parcel damage: What it means, and how to prevent it. https://nshift.com/blog/parcel-damage-what-it-means-and-how-to-prevent-it

Nugroho, A., & Wang, W.-T. (2023). Credibility of Youtube product reviews and customers' product return intention: A product fit uncertainty perspective. Information Technology & People, ahead-of-print(ahead-of-print). https://doi.org/10.1108/ITP-11-2021-0838

O'Neill, S., & Chu, J. (2001). Online returns management strategies. IBM Global Service EStrategy Report.

O'Donoghue, D. (2019). 11 tips to perfect your product photography. Retrieved from https://learn.g2.com/product-photography.

Ofek, E., Katona, Z., & Sarvary, M. (2011). "Bricks and Clicks": The Impact of Product Returns on the Strategies of Multichannel Retailers. Marketing Science, 30(1), 42–60. https://doi.org/10.1287/mksc.1100.0588

Oghazi, P., Karlsson, S., Hellström, D., & Hjort, K. (2018). Online purchase return policy leniency and purchase decision: Mediating role of consumer trust. Journal of Retailing and Consumer Services, 41, 190–200. https://doi.org/10.1016/j.jretconser.2017.12.007

Oketch, J., Kilika, J., & Kinyua, G. (2020). Top Management Team Psychological Characteristics and Organizational Performance. Journal of Business and Economic Development, 5, 36. https://doi.org/10.11648/j.jbed.20200501.15

Okigbo, C. C. (2014). Strategy: What It Is. In C. C. Okigbo (Ed.), Strategic Urban Health Communication (pp. 1–9). Springer. https://doi.org/10.1007/978-1-4614-9335-8_1

Olenski, S. (2017). Marketing's next big hurdle: the rising cost of customer acquisition. Retrieved 30 March 2021 from https://www.forbes.com/sites/steveolenski/2017/11/18/marketings-next-big-hurdle-the-rising-cost-of-customer-acquisition/#18de76d12298

Oliveira, L. K. de, Oliveira, R. L. M. de, Sousa, L. T. M. de, Caliari, I. de P., & Nascimento, C. de O. L. (2019). Analysis of accessibility from collection and delivery points: Towards the sustainability of the e-commerce delivery. Urbe. Revista Brasileira de Gestão Urbana, 11, e20190048. https://doi.org/10.1590/2175-3369.011.e20190048

Oliver, R. L. (1980). A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions. Journal of Marketing Research, 17(4), 460–469. https://doi.org/10.1177/002224378001700405

Oliver, R. L., & Burke, R. R. (1999). Expectation processes in satisfaction formation: A field study. Journal of Service Research, 1(3), 196–214.

Othman, A. K., Wan Taha, N. A., Omar, N. A., Radzuan, N. F., Che Mat, S. N. A., & Mohd Hanipiah, S. N. F. (2019). Factors affecting customers' online purchasing behaviour: The mediating role of purchase intention / Abdul Kadir Othman... [et al.]. Insight Journal (IJ), 4(13), Article 13.

Ow, T. T., & Wood, C. A. (2011). Which online channel is right? Online auction channel choice for personal computers in the presence of demand decay. Electronic Commerce Research and Applications, 10(2), 203–213. https://doi.org/10.1016/j.elerap.2009.06.001

Paazl. (2017). E-commerce returns rates – how much is coming back?. Retrieved from https://www.paazl.com/blog/e-commerce-returns-in-europe/.

Paço, A., Leal Filho, W., Ávila, L. V., & Dennis, K. (2021). Fostering sustainable consumer behavior regarding clothing: Assessing trends on purchases, recycling and disposal. Textile Research Journal, 91(3–4), 373–384. https://doi.org/10.1177/0040517520944524

Padmanabhan, V., & Png, I. P. L. (1997). Manufacturer's Return Policies and Retail Competition. Marketing Science, 16(1), 81–94. https://doi.org/10.1287/mksc.16.1.81

Pålsson, H., Pettersson, F., & Winslott Hiselius, L. (2017). Energy consumption in e-commerce versus conventional trade channels—Insights into packaging, the last mile,

unsold products and product returns. Journal of Cleaner Production, 164, 765–778. https://doi.org/10.1016/j.jclepro.2017.06.242

Pandey, N., Tripathi, A., Jain, D., & Roy, S. (2020). Does price tolerance depend upon the type of product in e-retailing? Role of customer satisfaction, trust, loyalty, and perceived value. Journal of Strategic Marketing, 28(6), 522-541.

Pandey, S. K., & Sharma, D. (2019). Sunk time fallacy with recoverable monetary costs. Marketing Intelligence & Planning, 37(2), 154–167. https://doi.org/10.1108/MIP-02-2018-0052

Pant, G., & Pant, S. (2018). Visibility of corporate websites: The role of information prosociality. Decision Support Systems, 106, 119–129. https://doi.org/10.1016/j.dss.2017.12.006

Park, D. H., Lee, J., & Han, I. (2007). The effect of on-line consumer reviews on consumer purchasing intention: The moderating role of involvement. International journal of electronic commerce, 11(4), 125-148.

Parker, K. R., Nitse, P. S., & Tay, S. M. A. (2009). The impact of inaccurate color on customer retention and CRM. Informing Sci. Int. J. an Emerg. Transdiscipl., 12, 105-122.

Passy, C. (2002). Cranky consumer: Get set for many unhappy returns. Wall Street Journal, 12(November), D2.

Patel, A. (2020, August 28). How Buy Online Return In Store (BORIS) Makes Returns Blessings in Disguise. https://www.hotwax.co/blog/how-buy-online-return-in-store-makes-returns-blessings-in-disguise

Patel, R. (2023, January 19). Returns Management: Meaning, Process, Best Practices. https://www.upperinc.com/guides/returns-management/

Pavlou, P. A., Liang, H., & Xue, Y. (2007). Understanding and Mitigating Uncertainty in Online Exchange Relationships: A Principal-Agent Perspective. MIS Quarterly, 31(1), 105–136. https://doi.org/10.2307/25148783

Pei, Z., & Paswan, A. (2017). Consumers' Legitimate and Opportunistic Product Return Behaviors: An Extended Abstract. In P. Rossi (Ed.), Marketing at the Confluence between Entertainment and Analytics (pp. 1405–1408). Springer International Publishing. https://doi.org/10.1007/978-3-319-47331-4_278

Pei, Z., & Paswan, A. (2018). CONSUMERS'LEGITIMATE AND OPPORTUNISTIC PRODUCT RETURN BEHAVIORS IN ONLINE SHOPPING. Journal of Electronic Commerce Research, 19(4), 301-319.

Pei, Z., Paswan, A., & Yan, R. (2014). E-tailer′s return policy, consumer′s perception of return policy fairness and purchase intention. Journal of Retailing and Consumer Services, 21(3), 249–257. https://doi.org/10.1016/j.jretconser.2014.01.004

Petersen, J. A., & Kumar, V. (2009). Are Product Returns a Necessary Evil? Antecedents and Consequences. Journal of Marketing, 73(3), 35–51. https://doi.org/10.1509/jmkg.73.3.035

Petersen, J. A., & Kumar, V. (2010). Can product returns make you money? MIT Sloan Management Review.

Petrescu, M., Mingione, M., Gironda, J., & Brotspies, H. (2019). Ad scepticism and retouch-free disclaimers: Are they worth it?. Journal of Marketing Communications, 25(7), 738-762.

Piron, F., & Young, M. (2000). Retail borrowing: Insights and implications on returning used merchandise. International Journal of Retail & Distribution Management, 28(1), 27–36. https://doi.org/10.1108/09590550010306755

Pizzutti, C., Gonçalves, R., & Ferreira, M. (2022). Information search behavior at the post-purchase stage of the customer journey. Journal of the Academy of Marketing Science, 50(5), 981–1010. https://doi.org/10.1007/s11747-022-00864-9

Placek, M. (2022, April 13). Reverse logistics costs in United States. Statista. https://www.statista.com/statistics/871365/reverse-logistics-cost-united-states/

Porteus, E. L. (1986). Optimal Lot Sizing, Process Quality Improvement and Setup Cost Reduction. Operations Research, 34(1), 137–144. https://doi.org/10.1287/opre.34.1.137

Posazhennikova, V., Davey, K., & Hirschfeld, C. (2010). Catching the Boomerang: The Product Return Process of Swedish E-Retailers. https://urn.kb.se/resolve?urn=urn:nbn:se:hj:diva-12341

Posselt, T., Gerstner, E., & Radic, D. (2008). Rating E-Tailers' Money-Back Guarantees. Journal of Service Research, 10(3), 207–219. https://doi.org/10.1177/1094670507306684

Power Reviews. (2021, September 8). Consumer Survey: Returns in Retail in 2021. Power Reviews. https://www.powerreviews.com/insights/consumer-survey-retail-returns-2021/

Powers, T. L., & Jack, E. P. (2015). Understanding the causes of retail product returns. International Journal of Retail & Distribution Management, 43(12), 1182–1202. https://doi.org/10.1108/IJRDM-02-2014-0023

Punakivi, M. (2003). Comparing alternative home delivery models for e-grocery business. Helsinki University of Technology. https://aaltodoc.aalto.fi:443/handle/123456789/2092

Pymnts. (2021, January 11). NEW DATA: Discounts Can Help Merchants Reduce Holiday Returns. https://www.pymnts.com/news/ecommerce/2021/discounts-holiday-returns-consumers-shipping-online-ordering/

Rabinovich, E., Sinha, R., & Laseter, T. (2011). Unlimited shelf space in Internet supply chains: Treasure trove or wasteland? Journal of Operations Management, 29(4), 305–317. https://doi.org/10.1016/j.jom.2010.07.002

Raghunathan, R., & Corfman, K. (2006). Is Happiness Shared Doubled and Sadness Shared Halved? Social Influence on Enjoyment of Hedonic Experiences. Journal of Marketing Research, 43(3), 386–394. https://doi.org/10.1509/jmkr.43.3.386

Ranganathan, C., Seo, D., & Babad, Y. (2006). Switching behavior of mobile users: do users' relational investments and demographics matter? European Journal of Information Systems, 15(3), 269-276.

Rao, S., Rabinovich, E., & Raju, D. (2014). The role of physical distribution services as determinants of product returns in Internet retailing. Journal of Operations Management, 32(6), 295–312. https://doi.org/10.1016/j.jom.2014.06.005

Raphaeli, O., Goldstein, A., & Fink, L. (2017). Analyzing online consumer behavior in mobile and PC devices: A novel web usage mining approach. Electronic Commerce Research and Applications, 26, 1–12. https://doi.org/10.1016/j.elerap.2017.09.003

Razack, Z. (2019). Best practices for reducing your e-commerce return rate in 2019. Retrieved from https://exponea.com/blog/best-practices-for-reducing-your-e-commerce-return-rate/.

Reagan, C. (2019, January 12). That sweater you don't like is a trillion-dollar problem for retailers. These companies want to fix it. CNBC. https://www.cnbc.com/2019/01/10/growing-online-sales-means-more-returns-and-trash-for-landfills.html

Reimer, T., & Benkenstein, M. (2016). When good WOM hurts and bad WOM gains: The effect of untrustworthy online reviews. Journal of Business research, 69(12), 5993-6001.

Rekaiti, P., & Van den Bergh, R. (2000). Cooling-Off Periods in the Consumer Laws of the EC Member States. A Comparative Law and Economics Approach. Journal of Consumer Policy, 23(4), 371–408. https://doi.org/10.1023/A:1007203426046

Repko, M. (2022, January 25). A more than $761 billion dilemma: Retailers' returns jump as online sales grow. CNBC. https://www.cnbc.com/2022/01/25/retailers-average-return-rate-jumps-to-16point6percent-as-online-sales-grow-.html

Research and Markets. (2022, September). Global E-commerce Market 2021-2030 by Trade Category, Type of Commodities, Payment Method, Distribution Channel, Business Model, and Region: Trend Forecast and Growth Opportunity. https://www.researchandmarkets.com/reports/5134760/global-e-commerce-market-2021-2030-by-trade

ReturnLogic. (2022, February 26). Why automated returns are critical for growing ecommerce retailers. ReturnLogic. https://www.returnlogic.com/blog/automated-returns-why-its-critical-for-growing-e-commerce-retailers/

ReturnLogic. (2023). Returns Management: Meaning, Processes and Best Practices (2023). ReturnLogic. https://www.returnlogic.com/returns-management-software/

Reuters Events. (2020, January 21). 52% of consumers have abandoned an online purchase out of fear of a difficult return process. https://www.reutersevents.com/supplychain/ecommerceretail/52-consumers-have-abandoned-online-purchase-out-fear-difficult-return-process

Rintamäki, T., Spence, M. T., Saarijärvi, H., Joensuu, J., & Yrjölä, M. (2021a). Customers' perceptions of returning items purchased online: Planned versus unplanned product returners. International Journal of Physical Distribution & Logistics Management, 51(4), 403–422. https://doi.org/10.1108/IJPDLM-10-2019-0302

Robertson, T. S., Hamilton, R., & Jap, S. D. (2020). Many (Un)happy Returns? The Changing Nature of Retail Product Returns and Future Research Directions. Journal of Retailing, 96(2), 172–177. https://doi.org/10.1016/j.jretai.2020.04.001

Robosize. (2022, October 24). How to Reduce Returns in the E-commerce Fashion Industry. Robosize. https://robosize.com/blog/how-reduce-returns-ecommerce/

Rodrigues, R. I., Lopes, P., & Varela, M. (2021). Factors Affecting Impulse Buying Behavior of Consumers. Frontiers in Psychology, 12. https://www.frontiersin.org/articles/10.3389/fpsyg.2021.697080

Rogers, D. S., & Tibben-Lembke, R. S. (1999). Going backwards: Reverse logistics trends and practices (Vol. 2). Reverse Logistics Executive Council Pittsburgh, PA.

Rogers, D. S., Lambert, D. M., Croxton, K. L., & García-Dastugue, S. J. (2002). The Returns Management Process. The International Journal of Logistics Management, 13(2), 1–18. https://doi.org/10.1108/09574090210806397

Rogers, D. S., Melamed, B., & Lembke, R. S. (2012). Modeling and Analysis of Reverse Logistics. Journal of Business Logistics, 33(2), 107–117. https://doi.org/10.1111/j.0000-0000.2012.01043.x

Röllecke, F. J., Huchzermeier, A., & Schröder, D. (2018). Returning customers: The hidden strategic opportunity of returns management. California Management Review, 60(2), 176-203.

Roman, S. (2007). The Ethics of Online Retailing: A Scale Development and Validation from the Consumers' Perspective. Journal of Business Ethics, 72(2), 131–148. https://doi.org/10.1007/s10551-006-9161-y

Rong-Da Liang, A., Lee, C.-L., & Tung, W. (2014). The role of sunk costs in online consumer decision-making. Electronic Commerce Research and Applications, 13(1), 56-68.

Rosenbaum, M. S., & Kuntze, R. (2005). Looking good at the retailer's expense: Investigating unethical retail disposition behavior among compulsive buyers. Journal of Retailing and Consumer Services, 3(12), 217–225.

Ruiz-Benítez, R., Ketzenberg, M., & van der Laan, E. A. (2014). Managing consumer returns in high clockspeed industries. Omega, 43, 54–63. https://doi.org/10.1016/j.omega.2013.06.004

Russo, I., & Cardinali, S. (2012). Product Returns and Customer Value: A Footware Industry Case. In H. Jodlbauer, J. Olhager, & R. J. Schonberger (Eds.), Modelling Value (pp. 79–97). Physica-Verlag HD. https://doi.org/10.1007/978-3-7908-2747-7_5

Saad El Deen, M. (2023, February 13). The role of marketing to avoid product returns in online shopping [Second cycle, A2E]. SLU, Dept. of Economics. https://stud.epsilon.slu.se/18640/

Saarijärvi, H., Sutinen, U.-M., & Harris, L. C. (2017). Uncovering consumers' returning behaviour: A study of fashion e-commerce. The International Review of Retail, Distribution and Consumer Research, 27(3), 284–299. https://doi.org/10.1080/09593969.2017.1314863

Sahoo, N., Dellarocas, C., & Srinivasan, S. (2018). The Impact of Online Product Reviews on Product Returns. Information Systems Research, 29(3), 723–738. https://doi.org/10.1287/isre.2017.0736

SaleCycle. (2020, January 15). Ecommerce Returns: 2020 Stats and Trends. https://www.salecycle.com/blog/featured/ecommerce-returns-2018-stats-trends/

Saleh, K. (2016, April 5). E-commerce Product Return Rate – Statistics and Trends. Invesp. https://www.invespcro.com/blog/ecommerce-product-return-rate-statistics/

Salleh, S., Hashim, N. H., & Murphy, J. (2016). The role of information quality, visual appeal and information facilitation in restaurant selection intention. In Information and Communication Technologies in Tourism 2016: Proceedings of the International Conference in Bilbao, Spain, February 2-5, 2016 (pp. 87-97). Springer International Publishing.

Samorani, M., Alptekinoğlu, A., & Messinger, P. R. (2019). Product Return Episodes in Retailing. Service Science, 11(4), 263–278. https://doi.org/10.1287/serv.2019.0250

San Martín, S., & Jiménez, N. H. (2011). Online buying perceptions in Spain: can gender make a difference? Electronic Markets, 21(4), 267-281.

Schäfer, N. (2023). Making transparency transparent: A systematic literature review to define and frame supply chain transparency in the context of sustainability. Management Review Quarterly, 73(2), 579–604. https://doi.org/10.1007/s11301-021-00252-7

Schulz, P., Shehu, E., & Clement, M. (2019). When consumers can return digital products: Influence of firm- and consumer-induced communication on the returns and

profitability of news articles. International Journal of Research in Marketing, 36(3), 454–470. https://doi.org/10.1016/j.ijresmar.2019.01.003

Segran, E. (2019, September 17). Online returns will cost U.S. retailers $550 billion by 2020. https://www.fastcompany.com/90404710/its-time-to-kill-free-return-shipping

Selvaraju, K., & Karthikeyan, P. (2016). Impact on E-Commerce towards Online Shopping and Customer Buying Behavior. Asian Journal of Research in Social Sciences and Humanities, 6(7), 1260. https://doi.org/10.5958/2249-7315.2016.00511.6

Sendcloud. (2021). 2021/2022 E-commerce Delivery Compass (p. 80). Sendcloud & Nielsen. https://www.sendcloud.co.uk/wp-content/uploads/2021/08/SC_consumer-research_EN-Checked-1.pdf

Seo, J. Y., Yoon, S., & Vangelova, M. (2016). Shopping plans, buying motivations, and return policies: Impacts on product returns and purchase likelihoods. Marketing Letters, 27(4), 645–659. https://doi.org/10.1007/s11002-015-9381-y

Serkan Akturk, M., Ketzenberg, M., & Heim, G. R. (2018). Assessing impacts of introducing ship-to-store service on sales and returns in omnichannel retailing: A data analytics study. Journal of Operations Management, 61, 15–45. https://doi.org/10.1016/j.jom.2018.06.004

Serravalle, F., Vannucci, V., & Pantano, E. (2022). "Take it or leave it?": Evidence on cultural differences affecting return behaviour for Gen Z. Journal of Retailing and Consumer Services, 66, 102942.

Shang, G., Ferguson, M. E., & Galbreth, M. R. (2019). Where Should I Focus My Return Reduction Efforts? Empirical Guidance for Retailers. Decision Sciences, 50(4), 877–909. https://doi.org/10.1111/deci.12344

Shang, G., Ghosh, B. P., & Galbreth, M. R. (2017). Optimal retail return policies with wardrobing. Production and Operations Management, 26(7), 1315-1332.

Shang, G., Pekgün, P., Ferguson, M., & Galbreth, M. (2017). How much do online consumers really value free product returns? Evidence from eBay. Journal of Operations Management, 53–56, 45–62. https://doi.org/10.1016/j.jom.2017.07.001

Shao, B., Cheng, Z., Wan, L., & Yue, J. (2021). The impact of cross border e-tailer's return policy on consumer's purchase intention. Journal of Retailing and Consumer Services, 59, 102367.

Sharma, A. (2021, November 23). Council Post: Personalized Returns Are The Future Of The Post-Purchase Customer Experience. Forbes. https://www.forbes.com/sites/forbestechcouncil/2021/11/23/personalized-returns-are-the-future-of-the-post-purchase-customer-experience/

Shehu, E., Papies, D., & Neslin, S. A. (2020). Free shipping promotions and product returns. Journal of Marketing Research, 57(4), 640–658.

Shen, B., Deng, Y., Wang, X., & Li, Q. (2020). Overstated product sustainability: Real cases and a game-theoretical analysis. Annals of Operations Research, 291(1), 779–797. https://doi.org/10.1007/s10479-018-3002-0

Shin, J. I., Chung, K. H., Oh, J. S., & Lee, C. W. (2013). The effect of site quality on repurchase intention in Internet shopping through mediating variables: The case of university students in South Korea. International Journal of Information Management, 33(3), 453-463.

Shipping Easy. (2022, April 27). Prepaid Return Labels. ShippingEasy. https://support.shippingeasy.com/hc/en-us/articles/4405557937435-Prepaid-Return-Labels

Shramenko, N., Muzylyov, D., & Karnaukh, M. (2018). The Principles of the Choice of Management Decisions Based on Fuzzy Logic for Cargo Delivery of Grain to the Seaport. International Journal of Engineering & Technology, 7(4.3), 211. https://doi.org/10.14419/ijet.v7i4.3.19789

Shulman, J. D., Coughlan, A. T., & Savaskan, R. C. (2009). Optimal Restocking Fees and Information Provision in an Integrated Demand-Supply Model of Product Returns. Manufacturing & Service Operations Management, 11(4), 577–594. https://doi.org/10.1287/msom.1090.0256

Shulman, J. D., Coughlan, A. T., & Savaskan, R. C. (2010). Optimal reverse channel structure for consumer product returns. Marketing Science, 29(6), 1071-1085.

Shulman, J. D., Coughlan, A. T., & Savaskan, R. C. (2011). Managing Consumer Returns in a Competitive Environment. Management Science, 57(2), 347–362. https://doi.org/10.1287/mnsc.1100.1274

Singh, S. (2023, February 28). How to Choose the Right Shipping Carrier for Your Ecommerce Business. Shipway Blog | Tips for Ecommerce Fulfillment and Logistics.

https://blog.shipway.com/how-to-choose-the-right-shipping-carrier-for-your-ecommerce-business/

Smink, A. R., Frowijn, S., van Reijmersdal, E. A., van Noort, G., & Neijens, P. C. (2019). Try online before you buy: How does shopping with augmented reality affect brand responses and personal data disclosure. Electronic Commerce Research and Applications, 35, 100854. https://doi.org/10.1016/j.elerap.2019.100854

Smitha, & Aslekar, A. (2022). IoT in Inventory Management. 2022 International Conference on Decision Aid Sciences and Applications (DASA), 1045–1050. https://doi.org/10.1109/DASA54658.2022.9765137

Söderholm, P., & Ekvall, T. (2020). Metal markets and recycling policies: Impacts and challenges. Mineral Economics, 33(1), 257–272. https://doi.org/10.1007/s13563-019-00184-5

Song, J., & Gamborg Nielsen, G. (2017). The potential of using digital lockers as a delivery and return method for online purchasing of clothes. https://gupea.ub.gu.se/handle/2077/52798

Soni, V. D. (2020). Emerging Roles of Artificial Intelligence in Ecommerce (SSRN Scholarly Paper 3648698). https://papers.ssrn.com/abstract=3648698

Soocial. (2023). 25 Surprising Ecommerce Return Statistics (2023)—Soocial. https://www.soocial.com/ecommerce-return-statistics/

Sparks, B. A., Bradley, G. L., Jennings, G. R., & Johnston, N. R. (2014). Cooling off and backing out: Understanding consumer decisions to rescind a product purchase. Journal of Business Research, 67(1), 2903–2910. https://doi.org/10.1016/j.jbusres.2012.06.003

Sparks, B., & Fredline, L. (2007). Providing an explanation for service failure: Context, content, and customer responses. Journal of Hospitality & Tourism Research, 31(2), 241-260.

Speights, D. (2013). Return Fraud and Abuse: How to Protect Profits.

Spera, N. (2022, November 13). The ideal e-comm: Easy returns, instant refunds. Finshark. https://finshark.io/the-ideal-e-commerce-easy-returns-instant-refunds/

Spitzberg, P. A. A., Brian H. (2010). Myths and Maxims of Risk and Crisis Communication. In Handbook of Risk and Crisis Communication. Routledge.

Stambor, Z. (2022, April 18). Online returns eat into retailers' bottom lines. Insider Intelligence. https://www.insiderintelligence.com/content/online-returns-eat-retailers-bottom-lines

Startups. (2008, December 22). How to start a waste and recycling business. Startups.Co.Uk. https://startups.co.uk/guides/how-to-start-a-waste-and-recycling-business/

Statista Research Department. (2023, February 27). Mobile shopping penetration 2022. Statista. https://www.statista.com/statistics/280134/online-smartphone-purchases-in-selected-countries/

Statista. (2022a, July 27). Retail: Value of retail returns worldwide 2015-2019. Statista. https://www.statista.com/statistics/1142864/worldwide-retail-returns-value/

Statista. (2022b, September 8). Internet usage in Australia. Statista. https://www.statista.com/topics/5261/internet-usage-in-australia/

Statista. (2023a, February 20). Global e-commerce share of retail sales 2026 | Statista. https://www.statista.com/statistics/534123/e-commerce-share-of-retail-sales-worldwide/

Statista. (2023b, February 27). E-commerce worldwide—Statistics & facts. https://www.statista.com/topics/871/online-shopping/

Statista. (2023c, March 30). E-Commerce in China. Statista. https://www.statista.com/topics/1007/e-commerce-in-china/

Statista. (2023d, June 7). Most returned online purchases by category in Australia 2023. Statista. https://www.statista.com/forecasts/1187931/most-returned-online-purchases-by-category-in-australia

Stock, J. R., & Mulki, J. P. (2009). Product Returns Processing: An Examination of Practices of Manufacturers, Wholesalers/Distributors, and Retailers. Journal of Business Logistics, 30(1), 33–62. https://doi.org/10.1002/j.2158-1592.2009.tb00098.x

Stock, J., Speh, T., & Shear, H. (2006). Managing Product Returns for Competitive Advantage. MIT Sloan Management Review, 48(1), 57–62.

Stöcker, B., Baier, D., & Brand, B. M. (2021). New insights in online fashion retail returns from a customers' perspective and their dynamics. Journal of Business Economics, 91(8), 1149–1187. https://doi.org/10.1007/s11573-021-01032-1

Stone, M. (2011). Literature review on complaints management. Journal of Database Marketing & Customer Strategy Management, 18(2), 108–122. https://doi.org/10.1057/dbm.2011.16

Stuart, J. A., Bonawi-tan, W., Loehr, S., & Gates, J. (2005). Reducing costs through improved returns processing. International Journal of Physical Distribution & Logistics Management, 35(7), 468–480. https://doi.org/10.1108/09600030510615806

Su, X. (2009). Consumer Returns Policies and Supply Chain Performance. Manufacturing & Service Operations Management, 11(4), 595–612. https://doi.org/10.1287/msom.1080.0240

Suh, B., & Han, I. (2003). The impact of customer trust and perception of security control on the acceptance of electronic commerce. International Journal of electronic commerce, 7(3), 135-161.

Surprenant, C. F., & Solomon, M. R. (1987). Predictability and Personalization in the Service Encounter. Journal of Marketing, 51(2), 86–96. https://doi.org/10.1177/002224298705100207

Suwelack, T., Hogreve, J., & Hoyer, W. D. (2011). Understanding Money-Back Guarantees: Cognitive, Affective, and Behavioral Outcomes. Journal of Retailing, 87(4), 462–478. https://doi.org/10.1016/j.jretai.2011.09.002

Suzuki, Y., & Miah, M. D. (2022). Digital Transformation in Islamic Finance: A Critical and Analytical View. Taylor & Francis.

Sweeny, K., & Dillard, A. (2014). The effects of expectation disconfirmation on appraisal, affect, and behavioral intentions. Risk analysis, 34(4), 711-720.

Szpekman, A. H. (1992). Quality service sets you apart. HR MAGAZINE, 37, 73–73.

Tariq, M. U., Babar, M., Poulin, M., Khattak, A. S., Alshehri, M. D., & Kaleem, S. (2021). Human Behavior Analysis Using Intelligent Big Data Analytics. Frontiers in Psychology, 12. https://www.frontiersin.org/articles/10.3389/fpsyg.2021.686610

Tay, K. (2017). Best ways to handle customers who ask for refunds. Retrieved from https://wholesalesuiteplugin.com/best-ways-handle-customers-ask-refunds/.

Taylor, T. (2021, November 29). What Exactly Does a Customer Service Rep Do? https://blog.hubspot.com/service/what-does-customer-service-rep-do

TechTarget. (2018, July). What is 3PL (third-party logistics)? ERP. https://www.techtarget.com/searcherp/definition/3PL-third-party-logistics

Thiebaut, R. (2019). AI Revolution: How Data Can Identify and Shape Consumer Behavior in Ecommerce. In B. S. Sergi & C. C. Scanlon (Eds.), Entrepreneurship and Development in the 21st Century (pp. 191–229). Emerald Publishing Limited. https://doi.org/10.1108/978-1-78973-233-720191012

Tian, X., & Sarkis, J. (2022). Emission burden concerns for online shopping returns. Nature Climate Change, 12(1), Article 1. https://doi.org/10.1038/s41558-021-01246-9

Tran, T., Gurnani, H., & Desiraju, R. (2018). Optimal design of return policies. Marketing Science, 37(4), 649-667.

Trianasari, N., Butcher, K., & Sparks, B. (2018). Understanding guest tolerance and the role of cultural familiarity in hotel service failures. Journal of Hospitality Marketing & Management, 27(1), 21-40.

Tsagkias, M., King, T. H., Kallumadi, S., Murdock, V., & de Rijke, M. (2021). Challenges and research opportunities in eCommerce search and recommendations. ACM SIGIR Forum, 54(1), 2:1-2:23. https://doi.org/10.1145/3451964.3451966

Turner, J. H. (1988). A Theory of Social Interaction. Stanford University Press.

Tyagi, V. (2021). Return Policy of E-retailers: An Extensive Review. The Journal of Contemporary Issues in Business and Government. https://www.academia.edu/65608685/Return_Policy_of_E_retailers_An_Extensive_Review

Tyagi, V., & Dhingra, V. (2021). Return policy of e-retailers: An extensive review. Journal of Contemporary Issues in Business and Government, 27(2), 1316-1336.

Tyko, K. (2023, August 30). Regretting some of your Prime Day purchases? Here's how to get perks out of Amazon returns, no box required. USA TODAY.

https://www.usatoday.com/story/money/shopping/2021/06/21/amazon-return-kohls-ups-store-whole-foods-prime-day-orders/7654712002/

Ucuzoglu, J., & Hagel III, J. (2020, April 24). Use Your Customer Data to Actually Help Your Customers. Harvard Business Review. https://hbr.org/2020/04/use-your-customer-data-to-actually-help-your-customers

Ülkü, M. A., & Gürler, Ü. (2018). The impact of abusing return policies: A newsvendor model with opportunistic consumers. International Journal of Production Economics, 203, 124–133. https://doi.org/10.1016/j.ijpe.2018.05.016

UN Environment Programme. (2017, September 26). Sustainable transport and air pollution. UNEP - UN Environment Programme. http://www.unep.org/explore-topics/resource-efficiency/what-we-do/cities/sustainable-transport-and-air-pollution

Van Dijk, W. W., Zeelenberg, M., & Van der Pligt, J. (2003). Blessed are those who expect nothing: Lowering expectations as a way of avoiding disappointment. Journal of Economic Psychology, 24(4), 505-516.

Vasić, N., Kilibarda, M., Kaurin, T., Vasić, N., Kilibarda, M., & Kaurin, T. (2019). The Influence of Online Shopping Determinants on Customer Satisfaction in the Serbian Market. Journal of Theoretical and Applied Electronic Commerce Research, 14(2), 70–89. https://doi.org/10.4067/S0718-18762019000200107

Vazquez, E. E. (2021). Effect of an e-retailer's product category and social media platform selection on perceived quality of e-retail products. Electronic Markets, 31(1), 139–157. https://doi.org/10.1007/s12525-020-00394-8

Veltri, G. A., Lupiáñez-Villanueva, F., Folkvord, F., Theben, A., & Gaskell, G. (2023). The impact of online platform transparency of information on consumers' choices. Behavioural Public Policy, 7(1), 55–82. https://doi.org/10.1017/bpp.2020.11

Venosta, C., & Temperelli, E. (2020). Reverse logistics in B2C e-commerce: A model to assess return costs.

Wachter, K., Vitell, S. J., Shelton, R. K., & Park, K. (2012). Exploring consumer orientation toward returns: Unethical dimensions. Business Ethics: A European Review, 21(1), 115–128. https://doi.org/10.1111/j.1467-8608.2011.01639.x

Waldorf, T. J. (2021). Rising Return Rates Are Bad for Business. Here's How to Prevent Them. RIS News. https://risnews.com/rising-return-rates-are-bad-business-heres-how-prevent-them

Waller, D. S. (2015). Photoshop and deceptive advertising: An analysis of blog comments. Studies in Media and Communication.

Walsh, G., & Brylla, D. (2017). Do product returns hurt relational outcomes? Some evidence from online retailing. Electronic Markets, 27(4), 329–339. https://doi.org/10.1007/s12525-016-0240-3

Walsh, G., & Möhring, M. (2017). Effectiveness of product return-prevention instruments: Empirical evidence. Electronic Markets, 27(4), 341–350. https://doi.org/10.1007/s12525-017-0259-0

Walsh, G., Albrecht, A. K., Kunz, W., & Hofacker, C. F. (2016). Relationship between Online Retailers' Reputation and Product Returns. British Journal of Management, 27(1), 3–20. https://doi.org/10.1111/1467-8551.12120

Walsh, G., Möhring, M., Koot, C., & Schaarschmidt, M. (2014, June 1). Preventive Product Returns Management Systems: A Review and a Model. ECIS 2014 Proceedings - 22nd European Conference on Information Systems.

Wan, X., Li, D., Chen, J., & Lei, Y. (2020). Managing customer returns strategy with the option of selling returned products. International Journal of Production Economics, 230, 107794.

Wang, J. N., Du, J., Chiu, Y. L., & Li, J. (2018). Dynamic effects of customer experience levels on durable product satisfaction: Price and popularity moderation. Electronic Commerce Research and Applications, 28, 16-29.

Wang, R., Cheng, Z., & Wang, Q. (2021). Research on Availability Model of Two-dimensional Warranty Products Based on Incomplete Maintenance. IOP Conference Series: Materials Science and Engineering, 1043(3), 032046. https://doi.org/10.1088/1757-899X/1043/3/032046

Wang, S., Beatty, S. E., & Foxx, W. (2004). Signaling the trustworthiness of small online retailers. Journal of interactive marketing, 18(1), 53-69.

Wang, T. (2022). An Analysis on Runaway from Perspective of Cognitive Dissonance. Pacific International Journal, 5(3), 100–104.

Wang, W., Liu, Y., & Wei, Y. (2013). Research on Management Strategies of Reverse Logistics in E-Commerce Environments. In Z. Zhang, R. Zhang, & J. Zhang (Eds.), LISS 2012 (pp. 321–326). Springer. https://doi.org/10.1007/978-3-642-32054-5_48

Wang, X. (2009). Retail return policy, endowment effect, and consumption propensity: an experimental study. The BE Journal of Economic Analysis & Policy, 9(1).

Wang, Y., Anderson, J., Joo, S.-J., & Huscroft, J. R. (2019). The leniency of return policy and consumers' repurchase intention in online retailing. Industrial Management & Data Systems, 120(1), 21–39. https://doi.org/10.1108/IMDS-01-2019-0016

Wang, Y., Ramachandran, V., & Liu Sheng, O. R. (2021). Do Fit Opinions Matter? The Impact of Fit Context on Online Product Returns. Information Systems Research, 32(1), 268–289. https://doi.org/10.1287/isre.2020.0965

Weathers, D., Sharma, S., & Wood, S. L. (2007). Effects of online communication practices on consumer perceptions of performance uncertainty for search and experience goods. Journal of retailing, 83(4), 393-401.

Webretailer. (2021). Online marketplaces in Europe: Dynamic, diverse and disjointed. Retrieved 10 October 2022 from https://www.webretailer.com/marketplaces-worldwide/online-marketplaces-europe/

Weiner, B. (1972). Attribution theory, achievement motivation, and the educational process. Review of educational research, 42(2), 203-215.

Weiner, B., Graham, S., & Reyna, C. (1997). An attributional examination of retributive versus utilitarian philosophies of punishment. Social Justice Research, 10(4), 431-452.

Westbrook, R. A., & Reilly, M. D. (1983). Value-Percept Disparity: An Alternative to the Disconfirmation of Expectations Theory of Consumer Satisfaction. ACR North American Advances, NA-10. https://www.acrwebsite.org/volumes/6120/volumes/v10/NA-10/full

Whittaker-Wood, F. (2019, February 13). What Country Has the Highest Online Shopping Return Rate? PaymentsJournal. https://www.paymentsjournal.com/highest-online-shopping-return-rate/

Wighton, P., Lee, T. K., Lui, H., McLean, D., & Atkins, M. S. (2011). Chromatic aberration correction: An enhancement to the calibration of low-cost digital dermoscopes. Skin

Research and Technology, 17(3), 339–347. https://doi.org/10.1111/j.1600-0846.2011.00504.x

Williams, D. J., & Noyes, J. M. (2007). How does our perception of risk influence decision-making? Implications for the design of risk information. Theoretical issues in ergonomics science, 8(1), 1-35.

Williams, R. (2018, January 12). App Annie: Shopping app use jumped 54% in 2017. Retail Dive. https://www.retaildive.com/news/app-annie-shopping-app-use-jumped-54-in-2017/514722/

Williamson, O. E. (1981). The Economics of Organization: The Transaction Cost Approach. American Journal of Sociology, 87(3), 548–577. https://doi.org/10.1086/227496

Winkler, N. (2018). Ecommerce returns: Policy, rates, best practices & statistics (2018 holiday Ed.). Retrieved 16 April 2021 from https://www.shopify.com/enterprise/ecommerce-returns

Wirunphan, P., & Ussahawanitchakit, P. (2016). Brand competency and brand performance: An empirical research of cosmetic businesses and health products business in Thailand. The Business & Management Review, 7(5), 329.

Wood, S. L. (2001). Remote Purchase Environments: The Influence of Return Policy Leniency on Two-Stage Decision Processes. Journal of Marketing Research, 38(2), 157–169. https://doi.org/10.1509/jmkr.38.2.157.18847

Wood, S. L. (2001). Remote purchase environments: The influence of return policy leniency on two-stage decision processes. Journal of Marketing Research, 38(2), 157-169.

Worrell, E., & Reuter, M. A. (2014). Handbook of Recycling: State-of-the-art for Practitioners, Analysts, and Scientists. Newnes.

Wu, J. J., Chen, Y. H., & Chung, Y. S. (2010). Trust factors influencing virtual community members: A study of transaction communities. Journal of Business Research, 63(9-10), 1025-1032.

Wu, L. W., & Wang, C. Y. (2012). Satisfaction and zone of tolerance: the moderating roles of elaboration and loyalty programs. Managing Service Quality: An International Journal, 22(1), 38-57.

Wu, S. (2003). The relationship between consumer characteristics and attitude toward online shopping. Marketing Intelligence & Planning, 21(1), 37–44. https://doi.org/10.1108/02634500310458135

Xiao, T., & Shi, J. (2016). Consumer returns reduction and information revelation mechanism for a supply chain. Annals of Operations Research, 240(2), 661–681. https://doi.org/10.1007/s10479-014-1592-8

Xie, C., Gong, Y., Xu, X., Chiang, C.-Y., & Chen, Q. (2023). The influence of return channel type on the relationship between return service quality and customer loyalty in omnichannel retailing. Journal of Enterprise Information Management, 36(4), 1105–1134. https://doi.org/10.1108/JEIM-02-2021-0073

Xie, G. X. (2016). Deceptive advertising and third-person perception: The interplay of generalized and specific suspicion. Journal of Marketing Communications, 22(5), 494-512.

Xie, J., & Wang, L. (2021). Collaborative innovation of E-Commerce enterprises based on FPGA and convolutional neural network. Microprocessors and Microsystems, 80, 103595. https://doi.org/10.1016/j.micpro.2020.103595

Xu, J., Hong, L., & Li, Y. (2011). Designing of Collection and Delivery Point for E-Commerce Logistics. 2011 International Conference of Information Technology, Computer Engineering and Management Sciences, 3, 349–352. https://doi.org/10.1109/ICM.2011.23

Xu, L. (2020, September 17). All Sales Are Final Policy. Termly. https://termly.io/resources/articles/all-sales-are-final-policy/

Xu, L., Li, Y., Govindan, K., & Xu, X. (2015). Consumer returns policies with endogenous deadline and supply chain coordination. European Journal of Operational Research, 242(1), 88–99. https://doi.org/10.1016/j.ejor.2014.09.049

Xue, S., Li, G., Yang, L., Liu, L., Nie, Q., & Mehmood, M. S. (2019). Spatial pattern and influencing factor analysis of attended collection and delivery points in Changsha city, China. Chinese Geographical Science, 29, 1078–1094.

Yadav, H. (2021). AN EMPIRICAL STUDY OF THE COVID-19 IMPACT ON THE REVERSE LOGISTICS OF E-RETAILERS. Weser Books, 83.

Yan, B., Chen, Y. R., Zhou, X. T., & Fang, J. (2019). Consumer behavior in the omni-channel supply chain under social networking services. Industrial Management & Data Systems, 119(8), 1785-1801.

Yan, R., & Pei, Z. (2019). Return policies and O2O coordination in the e-tailing age. Journal of Retailing and Consumer Services, 50, 314–321. https://doi.org/10.1016/j.jretconser.2018.07.006

Yang, G., Ji, G., & Tan, K. H. (2022). Impact of artificial intelligence adoption on online returns policies. Annals of Operations Research, 308(1), 703–726. https://doi.org/10.1007/s10479-020-03602-y

Yang, J., Sarathy, R., & Lee, J. (2016). The effect of product review balance and volume on online Shoppers' risk perception and purchase intention. Decision Support Systems, 89, 66-76.

Yang, L., Li, X., Xia, Y., & Aneja, Y. P. (2023). Returns operations in omnichannel retailing with buy-online-and-return-to-store. Omega, 119, 102874. https://doi.org/10.1016/j.omega.2023.102874

Yang, Z., & Peterson, R. T. (2004). Customer perceived value, satisfaction, and loyalty: The role of switching costs. Psychology & Marketing, 21(10), 799–822.

Yerpude, S., Singhal, T. K., & Rawat, S. (2018). Internet of Things Augmented Effectiveness in Returns Management: An Empirical Validation. International Journal of Global Business and Competitiveness, 13(1), 53–64.

Yi, Y., & Gong, T. (2013). Customer value co-creation behavior: Scale development and validation. Journal of Business research, 66(9), 1279-1284.

Yltaevae, L. (2023, May 25). France: Main reasons for online returns 2022. Statista. https://www.statista.com/statistics/1382007/france-reasons-for-returns/

Yu, C.-C., & Wang, C.-S. (2008). A hybrid mining approach for optimizing returns policies in e-retailing. Expert Systems with Applications, 35(4), 1575–1582. https://doi.org/10.1016/j.eswa.2007.08.099

Yu, H., & Gao, Q. (2012). Analysis of influencing factors of taobao consumer behavior. WHICEB, AIS Electronic Library.

Yu, M.-C., & Goh, M. (2012). Time-bound product returns and optimal order quantities for mass merchandisers. International Journal of Systems Science, 43(1), 163–179. https://doi.org/10.1080/00207721.2010.481367

Yuan, L. (2018). E-commerce returns 101: How to offer free shipping & more. Retrieved 15 December 2020 from https://goshippo.com/blog/ecommerce-returns-offer-free-shipping/

Zaki, M., McColl-Kennedy, J. R., & Neely, A. (2021, May 4). Using AI to Track How Customers Feel—In Real Time. Harvard Business Review. https://hbr.org/2021/05/using-ai-to-track-how-customers-feel-in-real-time

Zarei, M. M., Agudo-Peregrina, Á. F., & Ponce-Cueto, E. (2020). Choosing the delivery and return method in purchases: The effect of situational factors in omni-channel contexts. Economic Research-Ekonomska Istraživanja, 33(1), 2120–2137. https://doi.org/10.1080/1331677X.2019.1596825

Zeithaml, V. A. (1988). Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence. Journal of Marketing, 52(3), 2–22. https://doi.org/10.1177/002224298805200302

Zeithaml, V. A., Berry, L. L., & Parasuraman, A. (1993). The nature and determinants of customer expectations of service. Journal of the academy of Marketing Science, 21, 1-12.

Zhang, D., & Huang, M. (2022). A Precision Marketing Strategy of e-Commerce Platform Based on Consumer Behavior Analysis in the Era of Big Data. Mathematical Problems in Engineering, 2022, e8580561. https://doi.org/10.1155/2022/8580561

Zhang, D., Frei, R., Senyo, P. K., Bayer, S., Gerding, E., Wills, G., & Beck, A. (2023). Understanding fraudulent returns and mitigation strategies in multichannel retailing. Journal of Retailing and Consumer Services, 70, 103145. https://doi.org/10.1016/j.jretconser.2022.103145

Zhang, J., Li, H., Yan, R., & Johnston, C. (2017). Examining the Signaling Effect of E-tailers' Return Policies. Journal of Computer Information Systems, 57(3), 191–200. https://doi.org/10.1080/08874417.2016.1183989

Zhang, Y., Voorhees, C. M., Lin, C., Chiang, J., Hult, G. T. M., & Calantone, R. J. (2022). Information Search and Product Returns Across Mobile and Traditional Online

Channels. Journal of Retailing, 98(2), 260–276. https://doi.org/10.1016/j.jretai.2021.05.001

Zhao, H., Zhao, Z.-Y., & Jiang, Y. (2011). Study on Identification of Product Life Cycle Based on Fuzzy Diagnosis Model. In China's Reality and Global Vision (pp. 171–187). WORLD SCIENTIFIC. https://doi.org/10.1142/9789814287913_0009

Zhao, S., Wu, F., Jia, T., & Shu, L. (2018). The impact of product returns on price and delivery time competition in online retailing. Computers & Industrial Engineering, 125, 658–667. https://doi.org/10.1016/j.cie.2018.01.007

Zhao, X., Hu, S., & Meng, X. (2020). Who should pay for return freight in the online retailing? Retailers or consumers. Electronic Commerce Research, 20(2), 427–452. https://doi.org/10.1007/s10660-019-09360-9

Zhou, T. (2011). An empirical examination of initial trust in mobile banking. Internet Research, 21(5), 527-540.

Zhou, W., & Hinz, O. (2016). Determining profit-optimizing return policies – a two-step approach on data from taobao.com. Electronic Markets, 26(2), 103–114. https://doi.org/10.1007/s12525-015-0198-6

Zhou, W., Hinz, O., & Benlian, A. (2018). The impact of the package opening process on product returns. Business Research, 11, 279-308.

Zhu, Z., Nakata, C., Sivakumar, K., & Grewal, D. (2007). Self-service technology effectiveness: the role of design features and individual traits. Journal of the Academy of Marketing Science, 35(4), 492-506.

Zhuang, G., Tsang, A. S. L., Zhou, N., Li, F., & Nicholls, J. A. F. (2006). Impacts of situational factors on buying decisions in shopping malls: An empirical study with multinational data. European Journal of Marketing, 40(1/2), 17–43. https://doi.org/10.1108/03090560610637293

Zouari, A. (2019). Relationships between eco-design, resources commitment and reverse logistics: Conceptual framework. Journal of Advanced Mechanical Design, Systems, and Manufacturing, 13(2), JAMDSM0039–JAMDSM0039. https://doi.org/10.1299/jamdsm.2019jamdsm0039

Appendix: Return Credits

1. Experimental Stimuli

Group 1 (low credit amount):

Taobao plans to issue a new return management practice from 1 January 2020 and wants to know your opinions on it.

First, all returns related to defective products or guarantee-related reasons are eligible for a full refund without limits. Second, returns due to subjective or satisfaction reasons have a specific amount limit that corresponds to your credit for free returns. Beyond that amount, you will be charged a 20% fee to be deducted from your refund. For example, you buy a coat, you take delivery of it at home, you try it on, you do not like how it looks on you and decide to return it. If the coat price is within the amount, you can return it with no charge; if the price exceeds the amount, the surplus proportion is liable to a 20% restocking fee. Now imagine that you spent 462 yuan on a coat on Taobao on 1 January 2020. You try it on, it fits you well and you consider it an acceptable purchase, but you are not completely satisfied with how it looks on you. Therefore, you consider returning it to get your money back. You issue a return request on Taobao. Then Taobao reminds you:

Now that the monetary amount that you can return, due to subjective or satisfaction reasons, with no charge in 2020 is limited to 465 yuan, this amount will be refreshed to 465 yuan in 2021.

If you still decide to return this product, your return credit will be reduced to 3 yuan (465-462). In the future, if the monetary amount of your return exceeds your return credit, you will be liable to pay a restocking fee for each return, 20% of the amount of the purchase price minus your return credit. This fee will be deducted from your refund. You can always check your return credit before purchase.

Group 2 (high credit amount):

Taobao plans to issue a new return management practice from 1 January 2020 and wants to know your opinions on it.

First, all returns related to defective products or guarantee-related reasons are eligible for a full refund without limits. Second, returns due to subjective or satisfaction reasons have a specific amount limit that corresponds to your credit for free returns. Beyond that amount, you will be charged a 20% fee to be deducted from your refund. For example, you buy a coat, you take delivery of it at home, you try it on, you do not like how it looks on you and decide to return it. If the coat price is within the amount, you can return it with no charge; if the price exceeds the amount, the surplus proportion is liable to a 20% restocking fee. Now imagine that you spent 462 yuan on a coat on Taobao on 1 January 2020. You try it on, it fits you well and you consider it an acceptable purchase, but you are not completely satisfied with how it looks on you. Therefore, you consider returning it to get your money back. You issue a return request on Taobao. Then Taobao reminds you:

Now that the monetary amount that you can return, due to subjective or satisfaction reasons, with no charge in 2020 is limited up to 5500 yuan, this amount will be refreshed to 5500 yuan in 2021.

If you still decide to return this product, your return credit will be reduced to 5038 yuan (5500-462). In the future, if the monetary amount of your return exceeds your return credit, you need to pay a restocking fee for each return, 20% of the amount of the purchase price minus your return credit. This fee will be deducted from your refund. You can always check your return credit before purchase.

Group 3 (unrestricted free return):

You spent 462 yuan on a coat on Taobao. It fits you well and you consider it an acceptable purchase, but you are not completely satisfied with how it looks on you. Therefore, you consider returning it to get your money back. You issue a return request on Taobao. Then Taobao reminds you:

Based on our return management practice, your purchase is eligible for our free return policy. You can return it and get a full refund.

2. Scales

Manipulation check

If your free returns amount on Taobao is […] in 2020, do you consider it enough for you to make satisfaction-related returns?

1. Not nearly enough 1 2 3 4 5 6 7 More than enough.

Variable: perceived fit between the buyer's requirement on returning products and the e-commerce site's return management practice (adapted from [64])

Taobao's return management practice is____ for me to return products bought on Taobao.

1. A bad fit 1 2 3 4 5 6 7 A good fit.
2. Not at all logical 1 2 3 4 5 6 7 Very logical.
3. Not at all appropriate 1 2 3 4 5 6 7 Very appropriate.

Variable: satisfaction with how the e-commerce site copes with product returns (adapted from [103])

Regarding how Taobao copes with product returns, I feel:

1. Very dissatisfied 1 2 3 4 5 6 7 Very satisfied.
2. Very displeased 1 2 3 4 5 6 7 Very pleased.
3. Very frustrated 1 2 3 4 5 6 7 Very contented.
4. Absolutely terrible 1 2 3 4 5 6 7 Absolutely delighted.

Variable: intention to keep the product (adapted from [52])

(1: strongly disagree, 7: strongly agree)

1. It is very likely that I would keep the coat.
2. I could imagine keeping the coat.
3. I would intend to keep the coat.

Variable: intention to repurchase products on the site (adapted from [104])

(1: strongly disagree, 7: strongly agree)

Considering Taobao's return management practice, _____

1. I would like to buy products from Taobao once more.

2. I would like to buy products continuously from Taobao.

3. Next time I would like to buy products from Taobao.

Variable: intention to switch from the current e-commerce website to other ecommerce websites (adapted from [105]).

(1: strongly disagree, 7: strongly agree)

Considering Taobao's return management practice, _____

1. I plan to switch to other shopping sites as soon as possible.

2. I will switch to other shopping sites in the near future.

3. I am willing to switch to other shopping sites.

Appendix: Purchase-Risk Notices

1. How Our Paper is Different From Relevant Previous Studies (Purchase-Risk Notices)

Previous studies	Context	Difference
Cranage et al. [9] studied the effect of preemptive information regarding long service times on disappointment and consumer loyalty. Loyalty was found to be higher when such information was present [9]. No significant difference in disappointment between the presence and the absence of the information was found [9].	Service failure in restaurant	The research context in the reference article is somewhat different from ours. Restaurant service is different from ecommerce wherein consumption activities are conducted remotely via electronic devices. Despite the fact that the constructs of loyalty and disappointment are similar to our constructs of repurchase intention and dissatisfaction, they are different constructs. For example, loyalty was measured by the extent to which consumers are willing to keep the relationship with the restaurant and forget the incident (service failure) [9]. In contrast, in the present study, the repurchase intention was measured by the extent to which consumers are willing to keep purchasing from the e-seller. Contrary to the non-significant effect of the information on disappointment in the reference study, a small difference in dissatisfaction between the presence and the absence of the preemptive information was found in our study.
Herbst et al. [27] and Herbst et al. [28] studied the effect of fast (vs. normal-paced) end-of-ad disclaimers on purchase intention.	Brand advertising	The authors studied the pace of ad disclaimers. However, we were not interested in the issue of pace in preemptive risk communication. How the presence (vs. absence) of risk communication was related to purchase intention and other variables (e.g., return intention) in an ecommerce context was examined in the present study.

Previous studies	Context	Difference
Ju [38] studied the moderating effect of risk information location (benefit information first vs. risk information first) on the relationship between consumer skepticism and perceived message effectiveness.	Pharmaceutical advertising	The author studied where and how risk communication should be made. However, we were not interested in the information location issue. How the presence (vs. absence) of risk information was related to consumer skepticism and other variables in an ecommerce context was examined in the present study.
Hüttl-Maack et al. [35] studied the effects of risk information (warnings of foreseeable product failures) on purchase intention and repurchase intention. A negative effect on purchase intention and a positive effect on repurchase intention were found [35].	Physical retailing	The risk information in the reference study concerns warnings of foreseeable product failures. However, the risk information in the present study concerns mismatches between a product's online appearance and its actual appearance, which is more relevant to ecommerce activities. A significant positive effect of risk information on repurchase intention was also found in the present study. However, no significant effect of risk information on purchase intention was found, which is different from the reference study. Furthermore, in contrast to the reference study, we built more connections between risk information presence and return intention, dissatisfaction, and other variables.
Petrescu et al. [65] studied the role of disclaimers on moderating the effects of advertising skepticism on ad believability, attitudes toward the ad, trust in the manufacturers, and intentions to use the product.	Product advertising	The risk information in the reference study concerns warnings of product photo genuineness, which is similar to our study. However, we did not examine the moderating effect of such information. The direct effects of such information on consumers in an ecommerce context were observed.

Previous studies	Context	Difference
Ju et al. [39] studied the moderating role of risk information prominence (vs. less salient information) on the effects of regulatory knowledge on perceived attention to risk information.	Pharmaceutical advertising	The authors studied how risk communication should be made. However, we were not interested in the information prominence issue. How the presence (vs. absence) of risk information was related to purchase intention and return intention and other variables was examined in the present study.

2. Experiment Scenarios

Stimuli used in study 1

Please imagine that you are considering about buying a unisex jacket on a shopping site. When you are browsing options on the site, you found a 480-yuan jacket.

On the product page, you saw a purchase-risk notice offered by the seller:

Purchase-risk notice: The color of the actual item may vary from our product picture (e.g., different computer screens and different monitor settings could cause color discrepancy). Thank you for your understanding.

[In the one group, the above two paragraphs were present; in the control group, the two were absent]

According to the shopping site's free return policy, in case of considering about returning the clothing due to the color discrepancy in the future, you can return it with no charge and get a full refund. The webpage exhibits enough stock of your size and you have enough money to purchase the jacket. Now, you can decide to buy it or not.

Stimuli used in study 2

Please imagine that you are considering about buying a unisex jacket on a shopping site. When you are browsing options on the site, you found a 480-yuan jacket.

On the product page, you saw a purchase-risk notice offered by the seller:

Purchase-risk notice: The color of the actual item may vary from our product picture (e.g., different computer screens and different monitor settings could cause color discrepancy). Thank you for your understanding.

[In the one group, the above two paragraphs were present; in the control group, the two were absent]

Eventually, you bought it and you received the jacket you ordered. You observe that the color of the jacket you have received is different (a darker blue) to the one shown in the seller's product picture.

To conclude, according to the shopping site's free return policy, in case of considering about returning the clothing due to the color discrepancy, you can return it with no charge and get a full refund. Now you can decide to return it or not.

Note: product pictures can be accessed by contacting the corresponding author.

3. Scales

Scales in study 1

Consumer skepticism toward the genuineness of the seller's product picture (Adapted from [67]).

(1: strongly disagree, 7: strongly agree)

- 1. I am basically doubtful about the genuineness of the seller's product picture.
- 2. The genuineness of the seller's product picture is questionable.
- 3. I am generally uncertain about the genuineness of the seller's product picture.
- 4. I am generally skeptical about the genuineness of the seller's product picture.

Intention to purchase the item (adapted from [34])

(1: strongly disagree, 7: strongly agree)

Please indicate your intention to purchase the jacket.

- 1. I plan to buy the jacket.
- 2. I intend to buy the jacket.
- 3. I predict I would buy the jacket.

Scales in study 2

Intention to return the product (adapted from [46]).

(From 1 to 7, 7-point scale)

Please rate your intention to return the jacket.

- 1. It is unlikely that I return the jacket/It is likely that I return the jacket.
- 2. It is improbable that I return the jacket/It is probable that I return the jacket.
- 3. I will keep the jacket/I will return the jacket.

Regret in purchasing the item (adapted from [10])

(1: strongly disagree, 7: strongly agree)

- 1. I regret my decision in purchasing the jacket.

- 2. Before I received the jacket, I knew that I had made an excellent decision.[R]
- 3. I am confident I made the best decision in purchasing the jacket based on the information I had available.[R]
- 4 I really feel good about my decision in purchasing the jacket.[R]

Tolerance toward differences between what is shown in the seller's product picture and the product finally received (adapted from [77])
(From 1 to 7, 7-point scale)

I feel that the product mismatch between the product's online appearance and its actual appearance would be:_____.

- 1. Intolerable – Tolerable
- 2. Unacceptable – Acceptable
- 3. Unreasonable – Reasonable
- 4. Unforgivable – Forgivable

Dissatisfaction with the product (Adapted from [18])
(1: strongly disagree, 7: strongly agree)

- 1. I feel unhappy with the jacket I bought
- 2. I am not pleased with the jacket I bought
- 3. I am not satisfied with the jacket I bought

Intention to repurchase from the seller (adapted from [72])
(1: strongly disagree, 7: strongly agree)

- 1. I would like to buy products from the seller once more.
- 2. I would like to buy products continuously from the seller.
- 3. Next time I would like to buy products from the seller.