Effect of Word-of-Mouth Communication and Consumers’ Purchase Decisions for Remanufactured Products: An Exploratory Study

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Abstract: In this study, we explored the interactive relationship between social media online word-of-mouth and offline word-of-mouth and its impact on consumers’ decision process for purchasing remanufactured products in China. This study adopted an exploratory approach, and we conducted semi-structured in-depth interviews with 30 Chinese consumers in Guangdong, China. As per our findings, it was determined that social media online word-of-mouth, offline word-of-mouth, and information source credibility are the main factors that affect Chinese consumers in the decision process for purchasing remanufactured products. In addition, offline word-of-mouth was noted to play a moderating role in the influence of social media online word-of-mouth in terms of purchase decisions. Information source credibility influences consumers’ purchase decisions and also plays a mediating role in the influence of offline word-of-mouth on the purchase decision. The result of our study provides managerial insights for Chinese remanufactured product enterprises to improve consumer awareness, influence purchase decisions, and cultivate habits toward remanufactured products.

Keywords: social media online word-of-mouth; offline word-of-mouth; purchase decisions; information source credibility; remanufactured products

1. Introduction

As per a new report released by the UN Intergovernmental Panel on Climate Change, human-caused climate change is wreaking havoc on the natural world. Globally, if greenhouse gas emissions are not reduced, the heat and humidity of the planet are expected to test the limits of human tolerance, and China will be one of the regions most affected [1]. Guangzhou is the most economically vulnerable city in China to sea-level rise. It is estimated that if emissions are left unchecked, Guangzhou will lose USD 331 billion per year by 2050, a figure that will rise to USD 1.4 trillion by 2100. If emissions can be reduced rapidly, this figure could be limited to USD 254 million per year by 2050 [1]. Continued global warming is seen to further impact China’s economy. High temperatures will cut into labor productivity, especially in agricultural labor. Climate change will hit international supply chains, markets, finance, and trade hard, potentially affecting the normal supply of Chinese domestic commodities, which could lead to an increase in prices while potentially disrupting export markets for Chinese commodities [2]. The impact of climate change on China and the world economy, such as reduced agricultural production, damage to critical infrastructure, and higher commodity prices, could further destabilize financial markets. Climate change will not only directly affect China but will also impact other countries, which will indirectly but profoundly affect China [3]. Thus, a response to global climate change should be on the horizon.
Since the pandemic, consumer groups have become more significantly environmentally aware, which will undoubtedly further enhance their willingness to consume green [4]. Most consumers are willing to buy remanufactured products, but they do not know which ones are green [5]. There are many factors that contribute to carbon emissions in the world, and it is necessary to give a specific example of non-low-carbon and low-carbon products in our daily life. For example, product packaging is one of the most important factors affecting the environment. Taking beverages as an example, we commonly have bottles of beverages made of glass and polyethylene terephthalate (PET) plastic, and many consumers understand plastic bottles, but not much is known about the carbon footprint of glass bottles. In fact, if produced and used only once, the carbon footprint of glass bottles is noted to be higher compared to that of PET plastic bottles because glass manufacturing requires more resources and is conducted at extremely high temperatures. Moreover, glass bottles are heavier; thus, transporting them causes greater carbon emissions from transportation. Some consumers choose glass bottles for beverages because they “look” more convenient to recycle, but that is not quite true either. The carbon footprint of glass bottles used three times is comparable to that of 0.5 L PET bottles, and if the recycling rate of PET bottles is increased to 60%, glass bottles need to be reused 20 times to bring their carbon footprint down to the same level [6]. In short, in the case of ensuring recycling technology and recycling efficiency, it is better to buy PET plastic bottles with a large volume and small material area [7].

In addition, China has announced that corrective actions will be taken in relation to the CO$_2$ emissions by 2030 and carbon neutrality by 2060 [8]. Remanufacturing involves the key operational processes in a closed-loop supply chain, such as product acquisition, logistics planning, inspection, and possible part and/or component disposal. There are substantial research studies on operational issues and product improvement and acquisition. All these operational improvement activities require the promotion and cooperation of governments and enterprises, in order to increase individual consumers’ environmental awareness of remanufactured products and cultivate consumers’ green consumption habits. It is necessary to disseminate the correct information about remanufactured products through effective information dissemination channels, to increase consumers’ awareness of environmental protection, cultivate green consumption habits, and eventually image consumers’ purchasing habits. Social media has been recognized as an important information dissemination platform for information acquisition and influencing consumer behavior. In fact, remanufactured products have received low market recognition from consumers. Existing research on the impact of social media online word-of-mouth (WOM) on Chinese consumers’ intention to purchase remanufactured products remains unexplored. Thus, this study used a qualitative approach to investigate the relationship between online and offline WOM and its impact on Chinese consumers’ decision-making process for purchasing remanufactured products. In addition, we assert that this study can also provide a practical understanding of consumer acceptance and awareness of promoting remanufactured products toward sustainability.

2. Theoretical Lenses

2.1. Remanufactured Products and Their Market Perception

Remanufacturing is a closed-loop supply chain strategy aimed at recovering the residual value [9]. Remanufacturing is bringing a used product to the same condition as a new product; remanufactured products have essentially the same quality, functionality, and performance as brand new products [10]. Remanufacturing is fundamentally different from repair, recycling, and reuse. It is the process of converting an old product into a new one. In practice, many consumers in China confuse recycled products with remanufactured products or equate remanufactured products with recycled products [6].

Some countries have taken action to reduce carbon emissions in response to energy sustainability to support the Paris Agreement [11]. International communities’ and countries’ advocacy of remanufactured products will influence consumers’ future consumption.
habits and purchasing decisions [10]. The benefits of remanufactured products in reducing landfill and waste, reducing energy use, increasing sustainability awareness, and reducing manufacturing costs have been proven in previous studies [9]. The success of remanufactured products in the market depends on factors such as consumer awareness, consumption habits, and acceptance, which have been identified to be the main obstacles limiting the development of the remanufacturing industry [6]. Therefore, it is necessary for remanufacturers to understand consumers' intention to purchase remanufactured products and the factors that might influence their purchasing decisions to increase their market demand.

2.2. Remanufactured Products and Consumer Recognition

To cope with the increasingly serious environmental pollution and CO₂ emissions due to production operations, remanufacturing has drawn significant attention from governments and enterprises [12]. In previous studies, consumer acceptance and awareness of remanufactured products remained limited; moreover, consumers are also reluctant to purchase remanufactured products [13] due to the low consumer market recognition of remanufactured products in the community. However, prior studies have shown that remanufacturing operations can help minimize landfill and waste, reduce energy use, and reduce manufacturing costs [14]. The success of introducing remanufactured products in the market depends on consumers' environmental awareness, consumption habits, and acceptance. These can be classified as the main barriers for the development of the remanufacturing industry in many countries, as discussed in the previous literature [13]. Moreover, social media and WOM have evolved beyond a unified digital platform for sharing information and developed into an instrumental strategy for global marketing. In general, companies are increasingly focusing on social media and WOM platforms to influence consumers' opinions and purchase behavior [8] to increase sales and profits.

2.3. Social Media Influences and Opportunities for Remanufactured Products

The development of Internet communication information technology and Web 2.0 technology is changing every aspect of our daily lives; for one, it has been significantly affecting consumers' purchase decisions. The advent of social media and the popularity of digital devices and/or smartphones in China and many countries have led to a dramatic change in the way people access information. As an essential part of new media, social media is defined as “a technical software built on Web 2.0 that supports users to create content and communicate with each other” [15] (pp. 197–199). As an essential source of information for consumers, social media plays a crucial role in influencing consumers’ daily purchasing decisions [16]. As an emerging information medium and communication platform, social media is changing the way that companies communicate with their potential customers. In addition, the rapid development of online communication methods, such as social media, websites, and blogs, has led to an increasing academic interest in social media online WOM [17]. The emergence of social media has provided unprecedented opportunities for the development of promoting new products into the market to support future business development. Local remanufactured industries can gain substantial benefits by disseminating information via social media and WOM to increase consumers' awareness and acceptance of remanufactured products.

2.4. Influence of Social Media Online WOM on Consumers' Purchase Intention of Remanufactured Products

Recently, the communication and interaction between companies and consumers have rapidly evolved due to the advancement of technologies. The advent of social media has shifted the initiative of how to access and disseminate information from companies to consumers effectively and efficiently. This is a challenge for manufacturing industries. In addition, consumers can access or share information about any company, product, or brand name through online social media platforms, which might have a strong influence on consumers’ purchase decisions by extracting and reviewing online WOM information [18].
Consumer purchase intention is a subjective norm of consumers, which is stimulated by external factors and the possibility of buying a certain product or service. The intention to purchase aspect may be a decisive factor. It is also an important part of consumers’ purchase decision process [19]. Studies have also examined the usefulness of social media online WOM and the importance of information dissemination. It is also open to all online users, allowing extensive information dissemination on digital platforms. There are exploratory studies on social media online WOM having a significant impact on consumer behavior and purchase intention [20]. Since the start of the COVID-19 pandemic, online purchasing has become very popular. There are numerous remanufactured products that are being sold by online and/or retail shops. The information source credibility to evaluate remanufactured product recommendations has become a challenge. It can also influence the final purchase decision of consumers directly. The research focus of consumer environmental awareness and purchase intention is still at the budding stage. In line with this, the relationship of social media influence and WOM in terms of information dissemination can impact consumers’ decision to purchase remanufactured products.

2.5. Influence of Offline WOM on Consumers’ Purchase Decisions

In this context, offline WOM communication is defined as face-to-face communication between information disseminators and information receivers, as mentioned in many previous studies [21]. Regarding offline WOM, it is defined as information dissemination and communication among consumers about any product or service. It is also built on the relationship of information dissemination and consumers’ decision making without other external influences [21]. In the context of consumer behavior, offline WOM can play a vital role in shaping and changing consumers’ attitudes in terms of purchase decisions toward products and services [17,22]. The interpersonal communication used in offline WOM allows consumers to learn about the usefulness and characteristics of products or services through non-advertising channels that are beyond information dissemination via any enterprise [23]. Therefore, offline WOM is one of the most influential factors affecting consumers’ purchase decisions for any product and/or service.

2.6. Information Source Credibility and Explanatory Likelihood Model (ELM)

In consumer behavior, trust is an important aspect of the willingness of one party to promote and build a confidence level for acquiring new products or services from other parties [24]. Consumers’ trust in product and/or service providers can help reduce consumers’ purchase risk and insecurity [25]. Information source credibility has been widely used in consumer behavior research, focusing on the influences of online WOM from offline WOM communication. Information source credibility can increase the willingness of buyers and sellers to cooperate, and of consumers to make purchase decisions about any product or service [25].

Our study adapted the ELM as a key theoretical foundation to explore consumer behavior and purchase decisions for remanufactured products. It can help us understand better how consumers process information dissemination and explain how consumers are influenced by information dissemination [26]. Information source credibility is the main determinant of persuasive messages that leads to purchase decision making for any product or service [27]. ELM theory also suggests that information source credibility is the extent to which information receivers’ judge whether the information they receive is credible. In fact, information with high credibility is perceived as reliable and useful for purchase decisions and therefore more likely to be adopted by consumers. Moreover, social relationship refers to the duration, emotional strength, and degree of mutual trust in consumers [28]. Information dissemination with strong social connections can be more influential, credible, and trustworthy [6]. In line with this, there is a need to understand the influence of offline WOM and online WOM. There are two different classifications in terms of information dissemination among consumers. The classification of a strong tie means the information dissemination is through offline WOM. On the other hand, the information
dissemination classification of a weak tie among consumers is proportional to information dissemination through online WOM. However, both strong and weak ties in information dissemination can still affect consumers’ perceptions and purchase intentions [27].

2.7. Key Aspects of the Theoretical Lenses

By analyzing studies on the impacts of social media online WOM and offline WOM and their influences on consumers’ purchase decisions, we argue that both social media online WOM and offline WOM communication have a strong influence on consumers’ purchase decisions. In addition, information source credibility is also a decisive factor in distinguishing different communication modes, such as social media online WOM and offline WOM. The success of remanufactured products in the market depends on consumer awareness, consumption habits, and acceptance, which are the main barriers limiting the development of the remanufacturing industry [18]. Therefore, remanufacturers must understand consumers’ purchase intentions for remanufactured products and the factors that influence consumers’ purchase decisions to increase their market demand. However, much of the existing research studied remanufactured products and intention to purchase based on perceived quality, risk, and brand name but ignored the information source creditability [29,30]. This study aims to fill a gap in the current literature by investigating the influence of information source credibility and WOM on the intention to purchase remanufactured products.

3. Methods and Materials

3.1. Research Method

This research was performed using the ELM with source information credibility. Existing research focused on the intention to purchase remanufactured products taking into consideration purchase attitude, subjective norm, and perceived behavioral control [26]. The relationship of source information credibility and the ELM can also significantly impact the purchase decision of consumers, as shown in previous studies [28]. In this connection, this research study adopted an exploratory approach to examine a small subset of individuals who have buying experience using both social media influence and WOM before making purchase decisions, representing the broader study population. A content analysis of the interviews with the respondent population was used to explore the practical scenarios of respondents’ purchasing decisions and their environmental awareness of remanufactured products. Further, this research also employed a qualitative research technique by conducting in-depth interviews to build the research subjects’ perspectives with regard to their purchase decision and information dissemination via online and offline WOM. Based on previous research [31], qualitative research methods are considered appropriate ways of answering “what” and “how” research questions in consumer behavior. Therefore, in the research design, focus group sessions and open-ended questionnaires were used to collect data and develop managerial insights and moral beliefs that can also reshape consumers’ purchase behavior toward remanufactured products and their decision-making process.

The focus group interview method (known as the group interview method) uses a mini-symposium format to decide on a group of consumers or customers with homogeneous characteristics for participation in a study. By gaining direct insights from pertinent issues, the actual thoughts and beliefs of consumers can be captured directly through a free response format. In this study, respondents were asked to list their interest in a particular behavior of purchase decision making [32]. To gather concise feedback from respondents, an open-ended questionnaire was used in the focus groups.

Participants were informed about the objectives and the purpose of the study. Each participant signed a consent form prior to the start of the interview session. We also provided participants with a definition of remanufactured products to ensure a common understanding of the topics discussed. To facilitate a smooth discussion and obtain satisfactory data, we also developed a semi-structured guide of key questions for the interviews.
to inform the discussion. Participants were asked if social media online WOM and offline WOM have influenced them in buying remanufactured products. What are the attributes and factors they consider when choosing a remanufactured product? The focus group also included a series of questions. The purpose of these questions was to ask participants to consider positive and negative WOM in terms of purchasing remanufactured products and perceptions of the facilitators or inhibitors that influence the decision of choosing a remanufactured product to purchase. Several questions were asked to ensure adequate consideration by the participants. Follow-up questions were asked for elaboration or clarification when needed [33]. A researcher led the focus group discussions. The discussion was audio recorded.

At the end of each focus group interview, we took verbatim notes and organized the responses of the college consumers interviewed. A thematic content analysis technique was then employed. Our study adopted the data analysis process of Braun and Clarke (2006), where we first familiarized ourselves with the data by transcribing and reading the qualitative data. The data were initially coded, themes were looked for and aligned, and the codes were arranged into potential themes. Themes were next reviewed to check and confirm that they were consistent with the codes and the entire dataset. Themes were then defined and renamed. Single theme details, as well as the specifics of each theme, were analyzed and refined; each theme was given a clear definition and name, for example, using the roles of online WOM, offline WOM, and credibility of information sources. Finally, the results were presented and discussed.

This study was conducted following the criteria of credibility, dependability, and confirmability, as proposed by Lincoln and Guba (1985) in terms of reliability and validity. Our study examined the extent to which student consumers elaborated on each topic item in the discussion through an open-ended questionnaire and a qualitative thematic analysis research method of focus group discussion. Thematic analysis and interpretation of the study were conducted by independent coders during the interviews to ensure the credibility of the study data. In terms of dependability, our study specifically explains the procedures and processes of data collection and thematic analysis used in this study. Finally, confirmability was achieved by saturating the analysis of qualitative data sources and acknowledging the limited generalizability of the study results.

3.2. Data Collection and Analysis

Our research adopted an exploratory study approach to focus on the importance of social media online WOM and offline WOM and their impact on Chinese consumers’ decision-making process for purchasing remanufactured products. This study conducted in-depth interviews with 30 university student consumers in Guangzhou, China, in February 2022. Table 1 shows the demographic information of the study sample. This study also used the same interview guide and semi-open-ended questions for all interviewees. This exploratory study examined the factors that influence student consumers’ decision-making process for purchasing remanufactured products.

In terms of data collection, our semi-structured in-depth interviews focused on the factors that influence university student consumers in their decision-making process for purchasing remanufactured products. The respondents were between 19 and 22 years old. There were 21 females (70%) and 9 males (30%), as shown in Table 1. During the interviews, respondents were asked about the type of information they consume when purchasing remanufactured products, for example, the extent to which they are influenced by social media online WOM and offline WOM, and the extent to which they are influenced by the information source credibility in their decision-making process in terms of purchasing remanufactured products.
Table 1. Participants’ demographic profile ($n = 30$).

<table>
<thead>
<tr>
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<th>Frequency ($n$)</th>
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<tbody>
<tr>
<td><strong>Gender</strong></td>
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<td></td>
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<tr>
<td>Male</td>
<td>9</td>
<td>30</td>
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<tr>
<td>Female</td>
<td>21</td>
<td>70</td>
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<tr>
<td><strong>Age</strong></td>
<td></td>
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<td>19</td>
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<td>21</td>
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<td>22</td>
<td>7</td>
<td>24</td>
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<tr>
<td><strong>Education level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undergraduate</td>
<td>30</td>
<td>100</td>
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<tr>
<td><strong>Online purchases</strong></td>
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<tr>
<td>Multiple times a day</td>
<td>0</td>
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<tr>
<td>Once per day</td>
<td>2</td>
<td>6.67%</td>
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<tr>
<td>Once per week</td>
<td>15</td>
<td>50%</td>
</tr>
<tr>
<td>Once per month</td>
<td>9</td>
<td>30%</td>
</tr>
<tr>
<td>Less than monthly</td>
<td>4</td>
<td>13.33%</td>
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<tr>
<td><strong>Remanufactured product purchases</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple times a day</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Once per day</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Once per week</td>
<td>3</td>
<td>10%</td>
</tr>
<tr>
<td>Once per month</td>
<td>9</td>
<td>30%</td>
</tr>
<tr>
<td>Less than monthly</td>
<td>18</td>
<td>60%</td>
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<tr>
<td><strong>Income level (RMB/month)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1000–2000</td>
<td>22</td>
<td>73.30%</td>
</tr>
<tr>
<td>2001–3000</td>
<td>6</td>
<td>20%</td>
</tr>
<tr>
<td>3000+</td>
<td>2</td>
<td>6.70%</td>
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<tr>
<td><strong>Disposable income (RMB/month)</strong></td>
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<tr>
<td>Below 1000</td>
<td>8</td>
<td>26.70%</td>
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<tr>
<td>1000–2000</td>
<td>20</td>
<td>66.70%</td>
</tr>
<tr>
<td>2000–3000</td>
<td>2</td>
<td>6.60%</td>
</tr>
<tr>
<td>3000+</td>
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A summary of the dialog was written for each interview to understand students’ behaviors as consumer perspectives and motivations and the extent to which their purchase decisions are influenced by social media online WOM and offline WOM. This study used thematic analysis, similar to prior studies [34]. A different iteration was made between the existing literature and the empirical data to develop themes (codes) for analysis. Some of the codes are emergent, and others are from the literature. There are three codes (one emerged from our study, and the other two were generated from the literature), as shown in Appendix A. Following the recommendation of Miles and Huberman (2014), we used matrix tables with the different identified themes to facilitate the comparison between the different behaviors of students [35].

For the study sample, in-depth interviews were conducted to explore the experiences, attitudes, and deep-seated perceptions of 30 Chinese university students in Guangdong regarding online and offline WOM in their decision process for purchasing remanufactured products. For exploratory research, larger sample sizes do not represent greater applicability, and depth may not be adequately analyzed as data attitudes can be sacrificed to breadth [36]. Therefore, in this study, 30 university students in Guangzhou, Guangdong Province, China, were selected. They were all local to Guangdong Province, ensuring they shared roughly the same cultural and consumption habits. In this case, our in-depth interviews were designed to obtain as much data as possible until the information became repetitive or no longer provided new directions and questions [26].
4. Results

In this research, a summary was written to understand students’ behaviors and motivations and the extent to which their buying decisions are influenced by WOM (online or offline). This research used thematic analysis. A different iteration has been made by comparing the existing literature and the empirical data to develop themes/codes to be analyzed. Some of the codes are emergent, and others are from the literature. There are three codes (one emerged from our study, and two were from the literature). Following the recommendation of Miles and Huberman (2002), this study used matrix tables with the different identified themes to facilitate the comparison between the different behaviors of students, as shown in Appendices A and B.

Our research found two main findings as follows. First, student consumers rely mainly on social media online WOM in the decision process for purchasing remanufactured products. Offline WOM plays a moderating role in the relationship between social media online WOM and purchase decision. Second, offline WOM indirectly influences purchase decisions for remanufactured products through the mediator of information source credibility.

4.1. The Influence of Online and Offline WOM on Purchase Decisions

As per our findings, both social media online WOM and offline WOM impact student consumers’ purchase decision for remanufactured products. Offline WOM plays a moderating role between online WOM and purchase decisions.

In the dialog, students explained that they use social media online WOM to support their purchase decision, while offline WOM was used to confirm the information received from online WOM. Our interviews indicated that this is the main reason for offline WOM use advocated by almost all the interviewed students. A total of 80% of the student consumers (24 out of 30) reported that they check offline WOM before making a final purchase decision. If the offline WOM is inconsistent with the online WOM, student consumers will re-evaluate their purchase decision. Conversely, if the offline WOM is consistent with the online WOM, student consumers will make the purchase decision. As per a quote from the interview, “I also check offline WOM before making the purchase decision, and if it doesn’t match online WOM, I continue to gather information to re-evaluate my purchase decision. I make a comprehensive analysis of the actual situation before deciding to purchase when I saw offline WOM that was inconsistent with online WOM.I use offline reviews to confirm recommendations from my online network. The likelihood of not buying is much higher if I saw online WOM inconsistence with offline WOM. I also check offline WOM, and if it is consistent with previous online WOM, I stop gathering information and make a purchase decision”.

Student consumers combine online and offline WOM to support their decision-making process for purchasing remanufactured products. In this purchase process, online WOM drives student consumers’ interest in remanufactured products, which in turn positively influences their purchase intentions. However, student consumers also use offline WOM as a secondary confirmation of social media online WOM before executing their purchase decisions. In other words, student consumers use offline WOM to validate online WOM. Offline WOM plays a moderating role between online WOM and purchase decisions. The influence of social media online WOM on the purchase decision is diminished when the social media online WOM is inconsistent with offline WOM. The influence of social media online WOM on the purchase decision is enhanced when the social media online WOM is consistent with offline WOM, i.e., the remanufactured product is likely to be purchased.

4.2. Influence of Information Source Credibility on Purchase Decision

Information source credibility can influence consumers’ decisions to purchase remanufactured products. Student consumers emphasized the significance of information source credibility, as it plays a crucial role in influencing student consumers’ purchase decisions. In fact, 80% of the respondents (24 out of 30 students) indicated that offline
WOM communication played a decisive role in their final purchase decision. This is mainly because offline WOM has higher information source credibility. As per a quote from the interview, “I trust offline WOM information from offline acquaintances more because offline acquaintances are more trustworthy, we know each other, and information from them have higher source credibility”. Our results suggest that offline WOM communication from acquaintances indirectly impacts student consumers’ final purchase decisions via information source credibility.

5. Discussion

This study discussed the relationship between social media online WOM and offline WOM and its impact on the decision-making process of student consumers for purchasing remanufactured products.

According to the ELM, when people encounter decision difficulties, they prefer to seek information support from credible sources with strong relationships and high levels of trust [6]. Our findings are consistent with previous studies as offline WOM was determined to have a more significant effect in influencing consumers’ purchase decisions [27]. Additionally, we found that offline WOM from acquaintances influences the final purchase decision through the information source credibility. Our data analysis showed that student consumers use offline WOM as a secondary confirmation of social media online WOM. In other words, offline WOM moderates the effect of social media online WOM on purchase decisions. For example, student consumers use offline WOM to validate the gathered information via social media online WOM. However, student consumers tend to use offline WOM to double-validate social media online WOM. When the gathered information via social media online WOM is not consistent with the offline WOM information, the influence of social media online WOM on the purchase decision is generally diminished. Another important observation is that when the gathered information via social media online WOM is consistent with the offline WOM information, the influence of social media online WOM on purchase decisions is enhanced, i.e., likely to purchase a remanufactured product. Therefore, we propose that offline WOM plays a moderating role between social media online WOM and purchase decision. Two important propositions are summarized as follows for future study.

Proposition 1. Offline WOM plays a moderating role in the influence of social media online WOM on purchase decisions.

In addition, prior research showed that information source credibility impacts consumers’ purchase decisions. Consumers are more likely to adopt information provided by people they know and trust [25]. According to ELM theory, information source credibility is a significant determinant of the persuasive information path [27]. Consumer-related trust is also a critical element in purchase decisions, as a significant level of trust can reduce consumer perceived risk. Information source trustworthiness has a positive influence on consumers’ purchase intentions [25].

Therefore, information source credibility is critical to student consumers’ decision making for purchasing remanufactured products. Offline WOM has a strong influence on purchase decisions due to its high information source credibility. This study also showed that social media online WOM and offline WOM directly and/or indirectly influence consumers’ purchase decisions. Information source credibility is an influencing factor for differentiating offline WOM from social media online WOM. For offline WOM communication, the gathered information between sender and receiver is relatively simple, as they usually know each other well and share strong social connections. This makes consumers more likely to adopt offline WOM information, thus influencing their final purchase decision. Therefore, another proposition is suggested to evaluate information source credibility as a mediator.
Proposition 2. Offline WOM indirectly influences consumers’ purchase decisions for remanufactured products through the mediator of information source credibility.

More specifically, this study explained the interaction between social media online and offline WOM and its impact on student consumers’ purchase decision for remanufactured products. The outcome of this study proposes that offline WOM moderates the relationship between social media online WOM and purchase decision for remanufactured products. Offline WOM has been considered an essential source of information in the consumer purchase decision process [18]. Our study found that social media online WOM is moderated by offline WOM in terms of influencing consumer purchase decisions, thus extending and complementing the existing literature. In addition, previous studies indicated that consumers are more likely to use social media online WOM to reduce risk when making purchase decisions [24]. An important finding of our study is that student consumers use offline WOM to double-check social media online WOM. When online WOM is inconsistent with offline WOM, the impact of online WOM on purchase decisions is diminished. However, when online WOM is consistent with offline WOM, the influence of online WOM on purchase decisions is enhanced. Therefore, we conclude that offline WOM plays a moderating role in the influence of social media online WOM on purchase decisions.

In addition, this study proposes that offline WOM influences the purchase decision through the mediating variable of information source credibility. This finding complements the previous study by Liao et al. (2019), which stated that offline WOM impacts consumers’ final purchase decisions [20]. Offline WOM is a person-to-person exchange between two parties. Trust is built on familiarity, and the information conveyed is more likely to influence the purchase decision. Because of the high level of information source credibility, consumers consider offline WOM important in terms of making purchase decisions [23]. Our findings build on this theory, as offline WOM was determined to have a significant influence on consumers’ final purchase decisions through the mediating variable of information source credibility.

6. Theoretical and Practical Implications

This study explored how social media online WOM and offline WOM communication interact to influence consumers’ purchase decisions on remanufactured products. The result of this study contributes to consumer behavior and ELM theory. Our research also provides insights for remanufacturing enterprises that need to be more active in WOM communication. The ELM model suggests that consumers’ purchase behavior can be influenced by different types of information [37]. Our study shows that online WOM and offline WOM information interactively affects Chinese student consumers’ purchase decisions for remanufactured products. Student consumers use online WOM to support their remanufactured product purchases. Therefore, remanufacturing enterprises should use local Chinese social WOM communication channels, such as Kuaishou, Bilibili, TikTok, WeChat, and Weibo, for future communication with Chinese student consumers and effectively provide real-time online WOM. More specifically, local Chinese social media platforms, such as Kuaishou, Weibo, and TikTok, could help remanufacturing enterprises attract traffic, spread online WOM about their remanufactured products, and integrate them with offline events. Remanufacturing enterprises could also post long-form, quality articles about remanufactured products and low-carbon green consumption habits, providing authoritative online WOM to target students by establishing semi-private WeChat groups for students and their friends.

Moreover, as noted by the ELM model, information credibility is one of the critical determinants of consumers’ decisions about the usefulness of the information. It has an indirect effect on consumers’ information choices [38]. Through online and offline WOM management, remanufacturing enterprises could increase student consumers’ understanding of remanufactured products and low-carbon green consumption habits, building trust. Additional approaches include specific actions to trigger student communication, such as
social media online platforms and offline veteran student sharing sessions where past and prospective student consumers can share their experiences and advice on remanufactured products. More specifically, enterprises could provide offline sharing sessions with student consumers or host offline expo fairs and other face-to-face activities to meet with remanufacturing enterprise representatives, increasing the trust in information sources. Using a combination of online and offline approaches to achieve publicity and manage online and offline WOM can build remanufacturing enterprises’ reputations in the market.

7. Limitations

This study has limitations. First, this study mainly focused on university student consumers in Guangdong, China. This study demonstrates the influence of social media online WOM and offline WOM communication on university student consumers’ purchase decision for remanufactured products, which is unique and may not represent all other groups. Future research could expand the sample to include other regions and age groups. In addition, future research can be conducted to validate and improve the results of this study by conducting quantitative research with extensive sample data.

8. Conclusions

This study delved into the relationship between social media online and offline WOM and its impact on student consumers’ decision-making process for purchasing remanufactured products. This study also highlights the critical role of social media online WOM, offline WOM, and information source credibility in this purchase decision process. In addition, the results of this study provide insights into the development of WOM marketing strategies and the understanding of consumer purchasing behavior for domestic remanufacturing companies in China.

Author Contributions: Conceptualization, X.Q.; methodology, X.Q. and S.K.; software, X.Q. and S.K.; validation, X.Q.; formal analysis, X.Q.; investigation, X.Q.; resources, X.Q.; data curation, X.Q.; writing—original draft preparation, X.Q.; writing—review and editing, X.Q. and S.K.; visualization, X.Q.; supervision, S.K.; project administration, X.Q. and S.K.; funding acquisition, X.Q. and S.K. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The authors confirm that the data supporting the findings of this study are available within the article.

Acknowledgments: The authors appreciate the anonymous reviewers for their constructive comments and suggestions that significantly improved the quality of this manuscript. The authors would also like to acknowledge Li Shufang and colleagues at the School of New Media and International Communication, and Wu Xinling at the research department, SCBC, and Rita Lin at OSEA Alliance Group for their support and help.

Conflicts of Interest: The authors declare no conflict of interest.
Appendix A

Table A1. Major categories of codes.

<table>
<thead>
<tr>
<th>Code and Subcode</th>
<th>Example of Quote Extracts</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose of Using Online WOM: Use offline WOM as a second confirmatory source of information</td>
<td>Before making the purchase of remanufactured product, I check online information about the product through social media sites such as Bilibili etc. After obtaining online information, I will also ask offline friends for advice and product information. If online WOM information is inconsistent with offline WOM information, further information will continue to be collected, and it will weaken my intention to buy, however, if offline information is consistent with social media online WOM, information, search will be stopped, and a purchase decision will be made.</td>
<td>Emergent</td>
</tr>
</tbody>
</table>

Table A2. Comparison of themes and different student behaviours.

<table>
<thead>
<tr>
<th>Themes</th>
<th>Student Behavior</th>
<th>Frequency (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social media online WOM</td>
<td>Supports purchase decision</td>
<td>30</td>
</tr>
<tr>
<td>Offline WOM</td>
<td>Validation of online WOM</td>
<td>24</td>
</tr>
<tr>
<td>Moderating role of offline WOM</td>
<td>If the offline WOM is inconsistent with the online WOM, consumers will re-evaluate their purchase decision. Conversely, if the offline WOM is consistent with the online WOM, student consumers will make the purchase decision.</td>
<td>24</td>
</tr>
</tbody>
</table>

References
11. Falkner, R. The Paris Agreement and the new logic of international climate politics. Int. Aff. 2016, 92, 1107–1125. [CrossRef]