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The Attributes of E-Commerce on E-Customer Satisfaction

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Abstract

Due to the advancement of Internet technology and the globalization of commerce, e-commerce is developing at an unexpected speed. With the rise of China's e-commerce industry and the substantial increase in the number of merchants, the competition in its industry has also increased. In this context, consumer satisfaction is all affected, so this paper conceptually discusses the attributes of e-commerce on e-customer satisfaction. The reviewed literature highlights factors and issues of importance in developing a research framework for future empirical research on this topic.

Keywords: E-commerce, customer satisfaction

1. Introduction

In the era of rapid technological development, e-commerce is developing at an unexpected speed due to the advancement of Internet technology and the globalization of business (Othman, Hassan, Ibrahim, Saripin, Sapuan, & Roslan, 2019), it has become a revolutionary business channel, especially in transactional activities (Doddahulugappa, Gopalakrishna, & Shirshendu, 2021). China has become a leader in e-commerce retailing and has the fastest-growing e-commerce population in the world (Gao, Shi, Guo, & Liu, 2020). E-commerce consumers in China have grown significantly over the past few years. In the first half of 2020 alone, there were 3 million new Internet users in China, increasing to 225 million, accounting for about 26% of the total number of Internet users in China. As the number of online customers continues to grow, many online marketplaces have begun to expand into this segment. In 2020, China received and sent about 58 express parcels per capita, and the national online retail sales amounted to about 11.76 trillion yuan (Liu, Zhang, Gao, & Huang, 2020). Affected by the Covid-19 epidemic, the registrations of e-commerce platforms have increased, and they not only meet the needs of consumers but also provide strong support for the survival of merchants and enterprises (Gao et al., 2020). The Covid-19 epidemic has undoubtedly brought new challenges to China's e-commerce. Its marketing needs to adapt to the new reality of the new trend of consumer behavior. Many enterprises have to adapt to the reality that people cannot go to a physical store, so as to carry out online stores (Gao et al., 2020). According to Othman et al. (2019), the need to maintain customer satisfaction is critical as they are recognized as contributors to a company's long-term business profitability. The Chinese e-commerce market still has huge potential, so understanding customer satisfaction in e-commerce is very important. With the rise of China's e-commerce industry and the substantial growth in the number of merchants, the competition in its industry has also increased (Wong, David, & Xiang, 2004). The fierce competition in the e-commerce industry has broadened the choices of customers, and they can directly change their choices when they are not satisfied with the e-commerce merchants (Achmad, Solimun, & Sheard, 2018). It can be seen that customer satisfaction can promote the formation and maintenance of customers (Wang, Zha, Bi, & Chen, 2018).

According to the Statistical Report on Internet Development of China (2020). As shown in Figure 1. In recent years, with the vigorous development of the e-commerce industry, the economy has formed a new pattern of dual cycle development at home and abroad. By December 2021, the number of e-commerce users in China has reached 842 million, an increase of 59.68 million over December 2020, accounting for 81.6% of the total number of Internet users. With the growth of the e-commerce market, it is particularly important to study customer satisfaction.

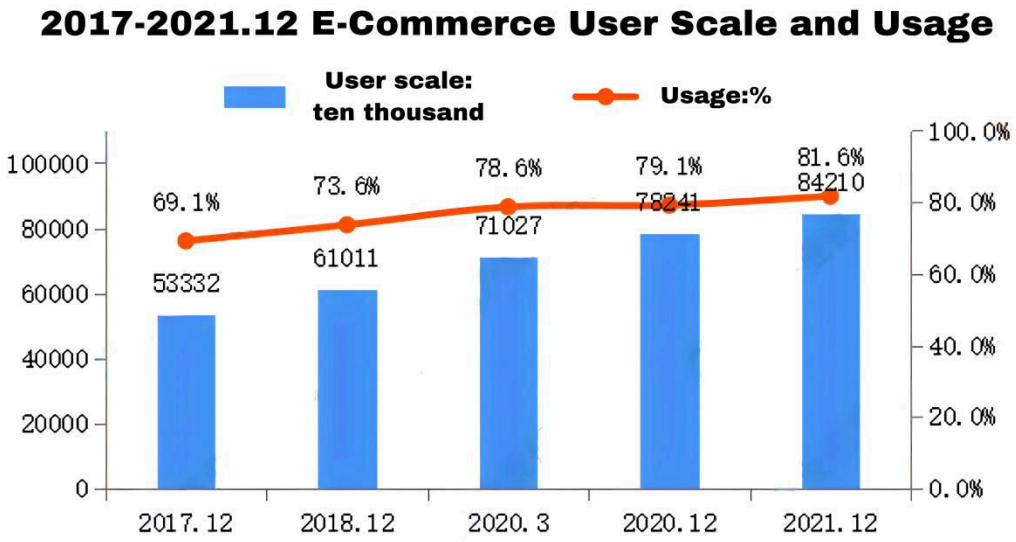

Figure 1. 2017–2021.12 E-Commerce User Scale and Usage

Due to the intense competition, e-commerce participants should understand what factors influence the different dimensions of satisfaction among e-commerce consumers. In this e-commerce marketing, the success of e-commerce largely depends on customer satisfaction (Doddahulugappa, Gopalakrishna, & Shirshendu, 2021). Understanding the factors that influence customer satisfaction can help improve the development of e-commerce platforms (Nandya & Permana, 2020). At the same time, previous research pointed out that the relationship between customer satisfaction in the Chinese e-commerce environment can be studied (Liu et al., 2020). In order to improve the effectiveness and generality of the research, previous researchers suggested that future research should try an increased sample size and more responses from e-commerce customers (Mustafa, 2011). According to Rita, Oliveira and Farisa (2019), customer satisfaction with e-commerce in other cultures can also be studied. Therefore, this study investigates the factors influencing customer satisfaction in the e-commerce market.

2. Literature Review

This section discusses an overview of e-commerce, theoretical foundations, and previous literature on e-commerce. The literature gaps are then discussed, which have important implications for constructing the proposed framework and the importance of this paper.

2.1 Theoretical Underpinning

The e-commerce market is developing rapidly. In terms of marketing, the success of e-commerce largely depends on consumers' satisfaction with e-commerce. Customer satisfaction is essential to the success of any web-based transaction. because it is theoretically considered to be an important post-purchase driver for consumers (Aslam, Hussain, Farhat, & Arif, 2019). The theory of reasoned action (TRA) explains the relationship between consumer

intention and behavior (Fishbein & Ajzen 1975). The theory of reasoned action assumes that humans are based on the information available to them and that the best direct determinant of one's actions is the intention, which is the cognitive representation of readiness to perform a given action (Fishbein & Ajzen 1975). According to the theory of reasoned action, an individual's belief in behavior is people's behavioral intention (Fishbein & Ajzen 1975). Therefore, the quality of the information provided by e-commerce website content can greatly influence purchase intention. In addition, if the information provided by the website is reliable and accurate, then this will increase e-commerce customer satisfaction and will lead customers to their first purchase. Mayer, Davis and Schoorman (1995) further extended the theory of reasoned action to support the modeling of customer satisfaction. Customer satisfaction can contribute to the formation and maintenance of customer satisfaction, so that customer satisfaction in e-commerce sites can have a positive impact on consumer retention. In addition, the expectation-confirmation theory (ECT) proposed by Oliver (1980), is used to study consumer satisfaction and repurchase behavior. Expectation-confirmation theory states that consumers first form initial expectations before purchasing, and then build up perceptions of the performance of the product/service consumed after a period of initial consumption. In addition, consumers will determine the degree of confirmation of their expectations by comparing the actual performance of the product/service with their initial expectations for performance, thus determining their satisfaction. Therefore, customer satisfaction will form repurchase intention. There are three methods of customer satisfaction in e-commerce: behavioral, attitudinal, and comprehensive. Customers repeat and continue to purchase products from the same merchant for customer satisfaction. Likewise, when customers confirm that they expect an e-commerce site to be trustworthy, they will be more motivated to repurchase the same e-commerce website (Kumar & Bagai, 2019). This also forms customer satisfaction for e-commerce merchants.

2.2 Factors Affecting E-customer Satisfaction

In the context of the Chinese market, there is a growing interest in research in the field of e-commerce. This study highlights the factors that affect e-commerce customer satisfaction from the perspectives of website design, information quality, product quality, security and privacy.

2.2.1 Website Design

Website design has been extensively studied from multiple perspectives, most of which have identified factors that can determine website acceptance (Hoque & Lohse, 1999). Website design is a process of converting software requirements into software website representations, which refers to a collection of relevant web pages for displaying specific content produced by tools such as Dreamweaver and photoshop on the Internet according to certain rules (Wilde, Kelly, & Scott, 2004). Simply put, a website is a communication tool through which people can publish the information they want to make public (Liang & Lai, 2002). People can access websites through web browsers, obtain the information (information) they need or enjoy network services. The website is composed of three parts: domain name, website source program and website space (Kim & Stoel, 2004).

According to Cato (2001), design is the process of creating artifacts with a planned, artistic, coherent, purposeful, and useful formal structure. Website design is to express the content in the planning case, the theme mode of the website, and the combination of one's own understanding through artistic methods; and web page production is usually the design draft designed by the web designer, in accordance with the W3C standard, Convert the application program under the general markup language to the web page format (Cato, 2001). The website design should be able to fully capture the attention of the visitor and make the customer feel visually pleasing. Therefore, when creating a web page, the overall design of the website must be closely integrated with the relevant principles of web design (Kim & Eom, 2002).

With the development of the Internet and e-commerce, different perspectives have emerged to identify the key elements of website design (Flavian, Gurrea, & Orús, 2009). In this sense, usability studies what elements a website must have so that consumers can use it easily (Palmer, 2002). Nielsen (1994) defines website usability as the ease with which users learn to use the system and remember basic functions, the efficiency of website design, the degree to which errors are avoided, and the overall satisfaction of users. More specifically, usability is a quality attribute that evaluates the ease of use of a user interface, and five dimensions or quality attributes can be identified: learnability, efficiency, memorability, error, and satisfaction (Nielsen, 1994). From the consumer's point of view, website design must have all these functions to evoke the user's emotional state and enhance their willingness to visit or purchase online (Donovan, Rossiter, Marcoolyn, & Nesdale, 1994). Therefore, the ease of use of the system can improve more complex learning and higher ability to predict how the system will perform. Specifically, usability improves the understanding and optimal understanding of the content and tasks given by consumers in order to achieve goals such as placing an order (Turley & Milliman, 2000).

2.2.2 Information Quality

Information quality is the quality of information system content, which is usually defined as the applicability of the information provided (Fadahunsi, Akinlua, Connor, Wark, Gallagher, Carroll, & Donoghue, 2019) Information quality is a measure of the value that information provides to users who use it. "Quality" is generally considered subjective, so the quality of information may vary depending on users and the use of information (Fadahunsi et al., 2019). However, the high-quality requirement increases its objectivity or subjectivity. The accuracy of the information can be regarded as an element of information quality, but according to its definition, it can also be regarded as including many other quality dimensions (Ivanov, 1972) Website quality assessment is an important means to measure information quality, which can understand whether retailers provide information quality and interaction expected by consumers (Kim & Stoel, 2004) Given the large amount of business that consumers and companies usually do online (Chen & Hitt, 2002), information quality is becoming a necessary prerequisite for establishing an active partnership between sellers and consumers (Li & Lin, 2006). In the context of e-commerce, information quality significantly affects the success of online companies (Chen & Hitt, 2002), because it affects consumers' decisions about online shopping, including variety, content and design (Lin, 2007). Content refers to

the information, functions or services provided by the website, and design is the way to present the content to consumers (Yang, Cai, Zhou, & Zhou, 2002).

Information quality is the quality of information content that helps consumers evaluate products or services, make purchase decisions and predict satisfaction (Wang et al., 2009). The information quality of e-commerce businesses is not directly proportional to the amount of information provided, because more information does not necessarily mean better information quality (Lin, 2007). Information quality refers to the output quality generated by information systems (Delone & McLean, 1992), which can be in the form of reports or online screens. Huh, Keller, Redman and Watkins (1990) defined four dimensions of information quality: accuracy, completeness, consistency, and currency. Accuracy is that the information is consistent with the attributes of real-world entities, the values stored in another database or the results of arithmetic calculation. Accuracy refers to whether there are exceptions or errors in the information recorded in the data. The data with accuracy problems is not only inconsistent in rules (Nelson, Todd, & Wixom, 2005). Completeness is defined for a specific application. It refers to whether there is a lack of data information. The lack of data perhaps the loss of the entire data record or a record of field information in the data. The value that incomplete data can learn from will be greatly reduced. It is also the most basic evaluation standard for data quality (Huh et al., 1990). Consistency refers to whether there is no conflict between two data sets, whether the data follows a unified specification, and whether the data set maintains a unified format. The consistency of data quality is mainly reflected in the specification of data records and whether the data conforms to logic (Doll, Xia, & Torkzadeh, 1994), and currency refers to the latest information.

2.2.3 Product Quality

Product quality refers to the totality of satisfying customer potential needs and specific product features and characteristics. Any product is manufactured to meet the needs of users (Li, Xu, & Li, 2013). Product quality, whether simple Products or complex products should be described by product quality characteristics or characteristics, product quality characteristics vary according to the features of the product, and the indicators and parameters of performance are also various. Garvin (1987) proposed the most comprehensive definition of product quality, namely performance, characteristics, consistency, durability, maintainability, aesthetics and customer-perceived quality. Where Performance refers to what is described as the product's response to external behavior in its working environment (Madu, Kuei & Lin, 1995). A product's performance is achieved through the performance of its constituent parts (Rose & Nabil, 2002). Many of these given definitions imply that product performance is a measure of product functionality (Li, Xu, & Li, 2013). Features refer to product features that are specific features that have a corresponding benefit or set of benefits to the user. The benefit is the value the user gets from using the feature. Conformance refers to the degree to which a product meets a specific standard, more specifically: conformance testing, which is used to determine whether a product meets some specific standards (Rose & Nabil, 2002). Product and process consistency is the ability of a product, service or process to meet its design specifications (Garvin, 1984). Reliability is defined as the product performing its intended function adequately within a specified period of time, under specified conditions

of use and specified probability of normal operation during the time period. Durability refers to the ability of a product to remain functional without undue maintenance or repair when faced with the challenges of normal operation during its design life cycle. Durability in use is measured in a number of ways, including service life, hours of use, and operating cycles. Serviceability is a measure and collection of features that support the ease and speed with which corrective and preventive maintenance can be performed on a product, and Aesthetics refers to the look and feel of a product (Rose & Nabil, 2002). The first impression of a product is usually visual, so aesthetics are very important. Factors that influence users' perceptions of a product include color. sound (Garvin, 1984). Customer-perceived Quality is a superior impression of a product, brand or business obtained by customers through sight, hearing, touch and smell, and is also a customer's perception of product quality based on the company's reputation (Bowen & Shoemaker, 1998).

2.2.4 Security and Privacy

The fundamental meaning of security is that there is no threat objectively and no fear subjectively (Baldwin, 1997). That is, the object is unconcerned about its normal state being disrupted. E-commerce security is a technology to protect user data and information security (Ravi & Andrew, 1997). The original design should only allow access to specific services, e-mail and networking. Firewalls are now the primary line of defense in most business security architectures (Buzan, 1991). Network security is defined as a network system that is free of threats and violations and can normally perform resource sharing. To ensure the normal operation of the network's hardware and software, as well as the security of data exchange, is necessary to ensure the normal operation of the network's hardware and software (Buzan, Weaver, & Wilde, 1998).

Transaction security is critical for consumers when using e-commerce sites to transact. Transaction security is dependent on the organization's ability to ensure privacy, authenticity, integrity, availability, and the prevention of unauthorized intrusions (Hussain, 2013). The property of privacy ensures that network information is not leaked to or exploited by unauthorized users, entities, or processes (Sicari, Grieco, Rizzardi, & Coen-Porisini, 2015). Authenticity can be defined as the authentication of the identity of a party (individual or organization) to ensure that pending transaction and contractual agreements are legitimate and enforceable (Shaikh, Babar, & Iliev, 2017). Integrity is the network information that cannot be processed without authorization of Altered properties (Niranjanamurthy & Chahar, 2013). Availability is the property in that network information can be accessed by authorized entities and used on demand (Shaikh, Babar, & Iliev, 2017). That is the characteristics of network information services that allow authorized users or entities to use them when needed or the characteristics that allow authorized users to continue receiving effective services even if the network is partially damaged or needs to be downgraded (Marchany & Trant, 2002). The use of information source evidence can prevent the sender from falsely denying the information sent, and the use of delivery receipt evidence can prevent the receiver from afterward falsely denying the received information (Drias, Serhrouchni, & Vogel, 2015).

Privacy is seen as a fundamental right of any consumer (Revathi, Shanthi, & Saranya, 2015),

and can also be understood as the willingness of consumers to share information over the Internet to complete a purchase (Belanger, Hiller, & Smith, 2002b). Privacy is the right of individuals to collect, store, process, share and use information. The ability to possess, control, and use personal information is known as privacy (Flavian & Guinaliu, 2006). The idea of privacy is becoming more and more crucial in today's society given the prominence of technologies that may record and retain personal information. Dhillon and Moore (2001) indicated that information sharing with e-commerce corporations, data spam, and sending excessive numbers of messages to many recipients are some examples of privacy risks on the Internet. Personal data a person posts online is typically considered private. E-commerce may create privacy policies for online consumer notification, transparency, and preferences/consent in order to meet privacy concerns. Although electronic merchants have embraced scientific privacy solutions from technical and legal viewpoints, it is important to keep in mind that consumers still require the highest level of privacy satisfaction in order to perform online transactions (Chellappa & Pavlou, 2002).

Information or data privacy and internet privacy are important from an e-commerce standpoint (Alshehri & Meziane, 2017). E-commerce is business activities conducted electronically, including between suppliers, customers, government agencies and other parties. Share business information through any electronic tool to complete various transactions of business activities, administrative activities and consumer activities (Gupta & Dubey, 2016). First of all, consumers are concerned that merchants use their data for Unrelated purposes, such as sharing with third parties. Second, consumers are concerned about unauthorized access to personal data due to security breaches. Privacy needs to be studied from a social, organizational, technological and economic perspective, as it is a legal right of customers (Dhillon & Moores, 2001). Therefore, consumers' concerns about information privacy have implications for business-to-consumer e-commerce as well as an e-commerce play Its full potential has a huge impact. Ensuring control over the secondary use of the information will ensure privacy in the minds of customers (Haddad, Aimeur, & Hage, 2018). Therefore, the right to privacy in e-commerce also elevates the traditional right of privacy to the environment of e-commerce. Entering the information age, the use of information technology to collect, process and transmit personal data has become very simple. The infringement of personal privacy on the Internet is no longer simply manifested in the direct theft, diffusion and intrusion of personal privacy, but more through the collection of a large number of data. Personal data, the personal information that individuals do not want others to know is analyzed through advanced technologies such as computer software (Chatterjee, 2015). In online transactions, customers need to disclose a large amount of personal information and financial information privacy to businesses, such as names, Addresses, bank card numbers, etc. (Haddad, Aimeur, & Hage, 2018). Customers have two privacy concerns (Gupta & Dubey, 2016).

2.3 Research Gaps

This section highlights two categories of literature gaps, including contextual and theoretical gaps that have been critically analyzed and synthesized in previous research.

2.3.1 Contextual Gap

In previous studies, more studies on e-commerce have been conducted with customer loyalty as a dependent variable (Ludin & Cheng, 2014; Othman et al., 2019; Nandya & Permana, 2020). However, customer satisfaction also has an impact on e-commerce has a great influence (Sheng & Liu, 2010). In this regard, the previous study involved a number of limitations that needed to be addressed. Previous studies have investigated e-commerce customer satisfaction in Malaysia and South Africa (Ludin & Cheng, 2014; Chinomona, Masinge & Sandada, 2014). And it is recommended that future research use different national and international samples on e-commerce customer satisfaction research.

2.3.2 Theoretical Gap

Previous studies have highlighted that the impact of e-commerce customer satisfaction can be explained from various perspectives, including reliability, pricing, time, responsiveness, and service quality (Vasic, Kilibarda, & Kaurin, 2019; Sheng & Liu, 2010; Hidayat, Saifullah, & Ishak, 2016). Additionally, earlier research revealed that TRA and ECT were utilized in this paper by integrating a number of theories or models, including TPB and TAM (Sheng & Liu, 2010), and by utilizing the enhanced SERVQUAL model (Sheng & Liu, 2010).

3. Research Methodology

This paper proposed the quantitative research method to study the attributes that affect Chinese e-commerce customer satisfaction. According to Zhao, Fogg and Kaplan (2015), the purpose of quantitative research is to answer the properties and changes of things. This paper proposed using a cross-sectional design to investigate the relationship between independent variables and dependent variables. In this paper, the researcher proposed to use raw data and collect data through questionnaires. Questionnaire surveys are a popular method of data collection because they are inexpensive and provide a broad perspective (Ilieva, Baron, & Healey, 2002).

4. Proposed Framework

The proposed research framework provides an infrastructure or model to support the research efforts of this research. The research framework depicted in Figure 2 below shows two key mediating variables affecting Chinese customers' satisfaction with e-commerce; e-customer satisfaction. Furthermore, to gain insight into the factors that influence e-customer satisfaction, this study distinguishes six different independent variables, including website design, information quality, product quality, security and privacy.

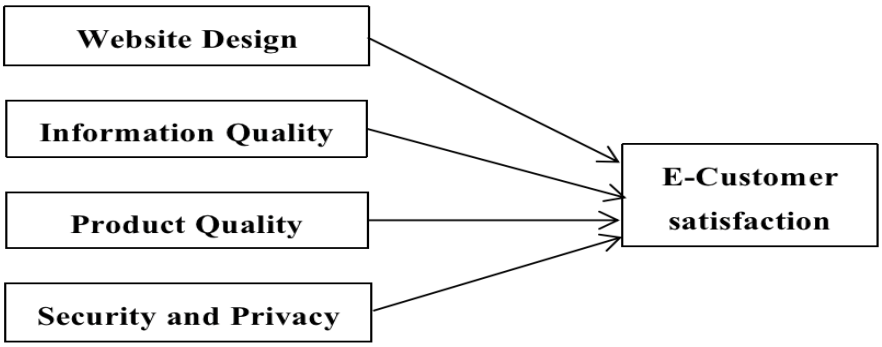

Figure 2. Proposed research framework

Source: Rita, Oliveira & Farisa, 2019; Mustafa, 2011; Vasic, Kilibarda & Kaurin, 2019; Liu et al., 2008; Handoko,2016; Wang et al., 2009; Swaid & Wigand, 2007; Sobihah, 2015; Hidayat, Ishak & Saifullah, 2016.

5. Conclusion

This paper discusses the current state of the Chinese e-commerce market environment that has been highlighted in previous research. The literature reviewed focuses on two key areas. First, this paper emphasizes that e-customer satisfaction may be affected by factors such as website design, information quality, product quality, security and privacy. Due to the rapid development of technology and the outbreak of Covid-19, more and more customers choose to use e-commerce for transactions, and it is of great significance to the e-commerce market to study the factors that affect customer satisfaction in e-commerce.

Other than that, this paper also proposes a research framework. The literature on customer satisfaction reveals various areas of research that need to be further addressed (Nandya & Permana, 2020; Mustafa, 2011). Furthermore, as widely discussed in previous studies, there is a need to investigate research on e-commerce customer satisfaction from multiple perspectives, allowing for integrative theory to explain the phenomena studied (Aslam, et al., 2019; Kumar; & Bagai, 2019). Finally, it is proposed to extend the methodology used to analyze e-commerce customer satisfaction to provide a richer and more informed view of the issue (Rita, Oliveira & Farisa, 2019). Therefore, based on the reviewed literature, this study proposes that the adoption framework was developed based on TRA and ECT theories and will employ quantitative research methods for future empirical study.

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