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Social Support, Social Capital and Online Community E-Loyalty: An Empirical Study

LI Bin

Doctor of Management

Supervisors:

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ISCTE University Institute of Lisbon

PhD FANG Jiaming, Professor,
University of Electronic Science and Technology of China

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Abstract

Online communities, as an essential manifestation of online social relationships, sociality factors (including social support factors and social relationship factors, etc.) ought to facilitate the formation of community trust and community satisfaction.

However, although the existing literature has explored the underlying mechanisms of online community trust and satisfaction formation, few studies implemented research from the integrated sociality perspectives. In this thesis, we integrate social capital theory and social support theory to consider social capital and social support as important antecedent social factors in forming community trust and community satisfaction, which influence users' trust and satisfaction in online communities. Community trust and satisfaction further promote community loyalty. Specifically, this thesis scrutinizes the influence of three levels of social support factors such as information support, emotional support, and human-computer network management support and three kinds of social capital such as structure, cognition, and relationship to online community trust and satisfaction. Based on the proposed research model, 430 online community users' survey data were collected through an empirical questionnaire and the research model was tested through the partial least squares structural equation model method. The results of the thesis suggest that social support factors, including information support, emotional support, and interpersonal network interaction support, and social capital factors including structural capital, relational capital, and cognitive capital significantly affect community users' loyalty not only directly but also indirectly through enhancing community users' trust and satisfaction. Thus, users' trust and satisfaction with the community are significant mediating variables.

Keywords: online communities, loyalty, social capital, social support, integrated models, empirical studies, China

JEL: L86; 031

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Resumo

Nas comunidades online, como uma importante manifestação das relações sociais online, os fatores de socialidade (incluindo fatores de apoio social e fatores de relacionamento social) devem facilitar a formação de confiança e satisfação da comunidade.

No entanto, embora a literatura existente tenha explorado os mecanismos subjacentes à formação da confiança e da satisfação da comunidade online, poucos estudos consideraram a perspectiva social de forma integrada. Nesta tese, integramos a teoria do capital social e a teoria do suporte social para considerar o capital social e o suporte social como importantes fatores sociais antecedentes na formação da confiança e satisfação da comunidade, que influenciam a confiança e a satisfação dos utilizadores em comunidades online. A confiança e a satisfação da comunidade promovem ainda mais a lealdade da comunidade. Especificamente, esta tese estuda a influência de três níveis de fatores de suporte social - suporte de informação, suporte emocional e suporte de gestão da relação homem-computador - e três tipos de capital social - estrutura, cognição e relacionamento - na confiança e satisfação da comunidade online. Com base no modelo de pesquisa proposto, 430 observações de utilizadores de comunidades online foram recolhidos através de um questionário. O modelo de pesquisa foi testado através de métodos de equação estruturais. Os resultados da tese relevam que fatores de suporte social, incluindo suporte de informação, suporte emocional e suporte de interação de rede interpessoal, e fatores de capital social, incluindo capital estrutural, capital relacional e capital cognitivo, afetam significativamente a lealdade dos utilizadores da comunidade, não apenas diretamente mas também indiretamente, aumentando a confiança e a satisfação dos utilizadores da comunidade; a confiança e a satisfação dos usuários com a comunidade são variáveis mediadoras importantes.

Palavras-chave: comunidade online, lealdade, capital social, apoio social, modelo de integração, investigação empírica, China.

JEL: L86; 031

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摘 要

在线社区作为在线社会关系的重要体现，社会性因素（包括社会支持因素和社会关系因素等）应该对社区信任和社区满意的形成起到重要作用。

但是，现有文献对在线社区信任和满意形成机制虽有较多的探讨，但是缺乏从不同的社会性视角整合研究。鉴于此，本文整合社会资本理论与社会支持理论把社会资本和社会支持作为社区信任和社区满意形成的重要前置社会因素，影响用户对在线社区的信任和满意。社区信任与满意进一步促进了社区忠诚。具体地，本研究考察了社会支持因素三个维度——信息支持，情感支持和人机网络管理支持以及社会资本的三个维度——结构、认知以及关系对在线社区信任和社区满意的影响。基于提出的研究模型，通过实证问卷调研方法收集了 430 份有效的在线社区用户数据，通过结构方程模型方法对研究模型进行了检验。研究结果表明：社会支持因素包括信息支持、情感支持以及人际网络交互支持以及社会资本因素包括结构资本、关系资本以及认知资本不仅会直接显著影响社区用户的忠诚，也可以通过增强社区用户的信任度和满意度间接地影响社区用户的忠诚。用户对社区的信任和满意是重要的中介变量。

关键词：在线社区，忠诚，社会资本，社会支持，整合模型，实证研究

JEL: L86; O31

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Acknowledgements

Time flies, and the six-year Ph.D. graduate study career is coming to an end. Looking back on the six-year study work and doing research on the topic of Ph.D. dissertation, it is not only painful, but also happy, of course, more happiness and pleasure after doing a good dissertation.

First of all, I would like to express my sincere gratitude to my teachers and classmates for their interest in my studies and for their help in my career. thank you, Mr. Fang Jiaming, my doctoral thesis supervisor, and Ms. Ana Brochado, my foreign professor, for their selfless help. Their rigorous academic attitude, profound academic knowledge and keen academic thinking deeply touched me. In particular, Professor Fang Jiaming, from the point of view of my thesis topic selection, determined the title of the dissertation, the scope of writing, and even the model dissertation that need to be read, carefully guided, corrected the shortcomings of my dissertation in time, exchanged with me many times, revised it, and finally completed it.

Secondly, I would like to thank my wife, Ms. Yang Jie, for her concern and understanding of my Ph. D. program. She has assumed more family responsibilities, which has enabled me to complete my studies and Research on my Ph. D. thesis.

Finally, I sincerely thank my colleagues and friends for their concern and support for my thesis writing.

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致 谢

时光荏苒，转瞬六年博士研究生学习生涯即将结束，回顾这六年的学习工作，做博士论文课题研究，既有痛苦，又有快乐，当然更多是做好论文后的快乐和愉悦。

在此，首先我衷心感谢博士学习期间我的老师和同学对我学业上的关心和事业上的帮助。感谢我的博士论文指导教授，外方导师 Ana Brochado 女士，中方导师方佳明先生，对我的无私帮助，他们严谨的学术态度，深厚的学术功底，敏锐的学术思维深深的触动了我。特别是方佳明教授，从我的论文选题立意，确定论文标题，写作范围，甚至需要阅读的论文范文都亲自关心，细心指导，对我论文的不足及时予以指正，多次与我交流，进行修改，并最终得以完成。

其次感谢我的妻子杨杰女士对我读博士的关心和理解，她承担了更多的家庭责任，让我才有精力完成我的学业和博士论文的研究。

最后衷心感谢我的同事和各位朋友对我写作论文的关心和支持。

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Chapter 1: Introduction

1.1 Research background

1.1.1 Theoretical background

According to the China Statistical Report on Internet Development released by China Internet Network Information Center (China Internet Network Information Center [CNNIC], 2020), by the end of June 2020, China's Internet users has reached 940 million. The Internet penetration rate has reached 67.0 percent, and the number of mobile Internet users in China was 932 million, and the proportion of Internet users using mobile phones was 99.2%. Besides, the WeChat friends' circle's utilization rate was 85.0%, which was basically the same as that in March 2020, and the utilization rates of QQ space and microblog were 41.6% and 40.4%, respectively. These ratios are relatively high. This suggests that more and more Internet users are using mobile phones to surf the Internet in China, and they have penetrated all aspects of people's lives.

Due to the myriad number of Internet users, especially the increasing number of mobile Internet users, online communities' environment is developing more and more at a sustainable rate. Online communities are collective groups of individuals who utilize computer-mediated environments to interact around a shared interest (Fang et al., 2018). Unlike traditional communities, online communities span time and space, are highly autonomous and open, allowing users to enter or exit the community anytime, anywhere (Li & Kananurak, 2018). As an important mode of interaction, the online community can break the space-time limit, pursue common goals and interests, improve the user's interaction efficiency, and reshape the user's information acquisition and consumption behavior. Porter (2004) points out that the online community has five key attributes: goals, locations, members, platforms, and profit models. Goals describe content based on the interests of a particular group of people; location refers to the place where individuals communicate; members refer to the groups and social structures where they participate; platforms provide technical support for the participation of virtual community members, and profit model refers to whether the community is a profitable community that creates economic value. These online communities largely meet the important social interest of Internet users and provide users with great convenience in people's daily life, work, and study (Fang et al., 2018).

According to the existing research, scholars have many different classification systems for the online community. For example, according to the needs of community members, the online community can be divided into the trading community, the fantasy community, the interest community, and the relationship community (Hagel & Armstrong, 1996). A trading community is a purchasing platform that provides online products and services and where users can share information. Fantasy community refers to providing users with a virtual space for role-playing, such as a game community. Interest community is a platform for users who share a common interest. Relationship community refers to the user to join the community to share self-perception and emotion and then pursue a sense of belonging. Besides, Klang and Olsson (1999) build an online community classification system for the company's operations and profitability, including forum-style online communities, club-style online communities, store-style online communities, and market-based online communities.

Furthermore, online communities can be divided into entertainment and interest communities, emotional and thought exchange communities, item trading communities, and learning communities. The specialized online community includes, namely: online education community, online game community, online learning community, and online sports community. The different types of online communities are designed to satisfy the different needs of the users.

The key to the success of online communities is the quality of content. Nevertheless, as all online communities begin to focus on content, the competition for online communities becomes more intense, and the stickiness of users will be likely to decline, which produces low loyalty (Fang et al., 2018). From this perspective, users' needs are constantly changing, which makes the online community operators have a precise grasp of the demand of users, keep the old users, and constantly attract new users. This depends on the continuous innovation of the operator's content to improve users' loyalty to the online community, which is also the key to a successful operation (Fang et al., 2018).

To some extent, the online community meets users' needs for emotional and social support (Johnson & Lowe, 2015). Especially after long-term communication, the participants have a certain emotional dependency and identification with the members of the online community, and then generate the corresponding sense of belonging. With the continuous enhancement of the sense of belonging, the online community sense will be formed (Zhao et al., 2012). Therefore, the sense of online community is generated with continuous online communication and interaction among members, making operators continually enhance the communication and interaction between users and continuously enhance the loyalty of members. Accordingly, it is

of utmost importance to study the loyalty of users from the perspective of the online community perspective (Cheng, Wu, & Chen, 2020).

With the popularity of the Internet and the continuous development of online communities, these online communities have attracted many users. Online communities have become one of the online marketing channels of many enterprises (Du, Cui, & Su, 2018). According to the data of CNNIC (2020), the number of users of the online community in China has exceeded 100 million, and posts have become the most common functionalities of the online community (Fang et al., 2018). Another conclusion is that many users express their views and ideas through blogs. Many people have become accustomed to reading other people's blogs. On this basis, many online communities have gradually transformed into the way of platform operation. At present, the online community has entered a more intense stage, and members' active engagement is a critical part of sustaining online communities' development (Liu et al., 2020). Various measures have been proposed to incentivize users to engage and contribute (Bateman, Gray, & Butler, 2011; Xin, Yeung, & Cheng, 2010).

With the increasing commercialization of online communities, these communities explore new profit models. According to the existing research, the important business value of online communities is increasing through customer engagement and cultivating customers' loyalty. Scholars such as Bi (2019) and Dholakia et al. (2009) maintain that through building and sponsoring an online community, e-retailers establish a cost-effective venue to assist post-sales services to customers. Exchanges of ideas, discussions of issues, and solving problems significantly improve e-retailers' understanding of customer behaviors. In summary, the current literature (Bi, 2019; Cheng, Wu, & Chen, 2020) shows that organizations can enjoy many business benefits from online communities, mainly in the following aspects:

- 1) First, through the establishment of an online community, the organization will have a good opportunity to get a brand promotion;
- 2) Second, through the communication function between members, online communities can improve customer loyalty and establish closer ties with customers;
- 3) Third, once the online community is formed, there will be a relatively large threshold for other competitors to upgrade;
- 4) Fourth, it can attract new users to join in without being affected by other factors;
- 5) Fifth, organizations can solve problems for their customers through the function of the online community and let customers know about new products and services.

With the increasing mature development of the commercial market, the brand has entered a consumer-led stage, moving from the beginning of one-way communication to a two-way

communication, and then to the way of collective creation (Kaplan & Haenlein, 2010). This development stage also brings fundamental changes to the brand experience of consumers.

For the brand experience of consumers, the way of collective creation brings together three core elements: social network, collective creation, and rich user experience. However, the increase of consumer brand dominance will also bring greater challenges to the brand communication of enterprises (Dwivedi et al., 2021).

On the one hand, the influence of enterprises on the third-party community created by consumers is insufficient; on the other hand, enterprises can make full use of online communities to increase the experience function of consumers, such as solving many problems for consumers. Research on the online community is a collection of many theories of branding, marketing, and customer relationship management. As new field of research, it has attracted the attention and studies of many scholars (Bi, 2019; Cheng, Wu, & Chen, 2020; Dholakia et al., 2009). But one of the essential functions of an online community is brand influence. This community is a gathering of brand lovers, that share common interests and hobbies (Cheng, Wu, & Chen, 2020).

The purpose of establishing an online community is not only for commercial purposes but also for the promotion of corporate image and brand awareness, in-depth interaction, and communication with users to achieve online marketing (Cheng, Wu, & Chen, 2020). It implies that with the maturity of online community development, more and more enterprises will establish more communities.

The research on online community belongs to an emerging field, and scholars at present mainly focus on knowledge sharing behavior, relational embeddedness, user engagement, and interpersonal communication (Ihl, Strunk, & Fiedler, 2020; Sanz-Blas, Buzova, & Pérez-Ruiz, 2021; Tausczik & Huang, 2020). Through the literature review, it is shown that the primary challenge for the community is the lack of loyalty, which is also a key issue in the development of the online community. However, relatively few studies examine online communities' loyalty.

Based on the characteristics of the virtual network community, the online community can provide more opportunities for individuals to communicate. However, keeping community users is becoming increasingly difficult in the differentiated competitive strategy of the online community environment. The churn rate of users is getting higher and higher. Loss behavior often occurs before users become familiar with each other. As a result, the process of getting familiar with each other from community users is getting longer.

Loyalty is the basis of people's communication and cooperation, which has been widely recognized (Ball, Coelho, & Machás, 2004), and it is also one of the mechanisms to simplify

complexity. The establishment of online community loyalty not only optimize the environment but also improve the communication between members of the online community, increase loyalty, improve efficiency, and promote its further development.

Although there is growing interest in online communities, few studies have examined them from an integrated viewpoint, including social support and social capital perspectives. However, the existing studies indicate that online communities depend on social interactions among their members, who share interests, build relationships, create fantasies, and conduct transactions (Lin, 2018). Therefore, it represents an important deficiency in the current online community literature, which needs to be studied by scholars. Thus, this dissertation focuses on studying the antecedents and underlying mechanism of community user loyalty from the perspective of social support and social capital. The results of this dissertation are expected to help enterprises better understand the loyalty formation mechanism of online community users, which can contribute to the sustainable development of the online community, and help enterprises realize the online community as a vital channel of enterprise word-of-mouth communication and improve the efficiency of brand communication.

1.1.2 Practical background

In today's society, the commercial market is becoming more and more mature, and various advanced ideas are guiding the development of enterprises. In the market of a mature industry, the competition among enterprises is becoming more and more fierce, which is mainly manifested in the lack of differentiation of products and services and the gradual loss of differentiated competitiveness among enterprises (Sharp & Dawes, 2001). Since loyal customers are the company's most important asset, the company focuses on developing customer retention and loyalty programs. The fundamental purpose of customer retention is to ensure that the relationship with value-added customers is maintained by reducing the rate of customer churn. Building customer loyalty is critical to the company's survival in a highly competitive market (Dominic et al., 2010).

With the development of the Internet and other advanced science and technology, communication efficiency and cost between people are becoming more and more convenient. On this basis, people will pursue information that is more in line with their own necessities, and online communities emerge as the contemporary demand (Tausczik & Huang, 2020). We can say that since the birth of the online community, it has attracted the attention of many scholars and enterprises, especially the major manufacturing enterprises that have established their

online community. Enterprises view the online community as a salient mean and tool to improve customer stickiness, to enhance their customer loyalty (El-Manstrly, Ali, & Steedman, 2020).

Through the analysis of the research literature (Bi, 2019; El-Manstrly, Ali, & Steedman, 2020), we can see that the online community is indeed a good platform for enterprises and consumers to establish good relations, and it is also a platform for effective implementation of customer relationship management. In a community, there are many relationships, such as the relationship between members and brands and between members. These are the problems that need to be solved by the community. Before the formation of brand loyalty, community operators must retain the members of the community to establish customer loyalty (Cheng, Wu, & Chen, 2020).

Based on the above overview, it is of great significance to study the factors of community loyalty for the construction of the online community. The main forces of the online community include the following three aspects (El-Manstrly, Ali, & Steedman, 2020).

First, the online community can expand the customer group, and the members of the online community can effectively share their interest information. The product and service information of the enterprise can become a communication bridge between the members. In the process of communication, the possibility of members' recognition of the products and services of the enterprise is increasing.

Second, online communities can gain customer loyalty. Members of online communities can share information about brands. If a brand is highly recognized by consumers, it is easy to leave a deep impression on its customers. When communicating with other members, the consumer will be very active and willing to share their brand loyalty with other members, and the customer's brand loyalty will increase accordingly.

Third, the online community allows the continuous improvement of enterprise products or services. Online community communication is bidirectional, not a single communication between members. Therefore, in the process of communication between members of the online community, consumers will share how they feel about the use of the enterprise's products and what kinds of problems they face. The feedback from these consumers reaches the enterprise's research and development personnel. Therefore, products and services of the enterprise can be improved promptly and periodically to meet users' preferences.

According to the existing research literature (Kaur et al., 2020), there exists a relationship between community loyalty, community identity, and community commitment, but the general research only studies the relationship between the two concepts and without further in-depth

study from other aspects. Based on the theory of social support (Colvin, Cullen, & Ven, 2002) and social capital (Leana III & Van Buren, 1999), this dissertation studies the influence mechanism of information support, emotional support, man-machine network management support and structural capital, relationship capital, and cognitive capital in social capital factors on the formation of user community loyalty, and further studies the influence of user trust and user satisfaction as mediators influencing loyalty. The research makes up for the lack of attention to social factors in the previous online community user loyalty research. It can provide construction strategy guidance for enterprises to build a dynamic online community and realize the sustainable development of the community.

1.2 Research status and significance

1.2.1 Research status abroad and in China

1.2.1.1 Research status abroad

With the development of the Internet and Information technology, the online community presents a blowout mode, and improving the level of consumer loyalty is the key issue to determine the long-lasting vigorous development of the online community (Kaur et al., 2020). The level of consumer loyalty can be considered in two directions, namely behavior loyalty and psychological loyalty (Yao, Qiu, & Wei, 2019), which are called consumer loyalty in this study. Drawing on the work of Oliver (1999), the definition of consumer loyalty in this thesis is defined as a deeply held commitment to rebuy or re-patronize a preferred online community consistently in the future, despite other situational and marketing factors that have the potential to induce switching behavior (Oliver, 1999).

In the previous articles (Chang, Hsieh, & Tseng, 2013; Islam & Rahman, 2017; Kaur et al., 2020), we can usually focus on the research on the effect of consumer identification, consumer satisfaction, and consumer engagement on consumer loyalty. An online community can connect people through consumer behavior and consumer goods and form a community at the same time. In the online community, people can freely express their opinions and exchange views while shopping and evaluating.

Muniz and O'guinn (2001) put forward the definition of network community for the first time. It points out that the definition of the online community is a special community without actual margin, and loyal consumers of the brand can appear according to a specific organizational structure. Taking it as the basis, we construct the circular triangle structure

system of "consumer-brand-consumer". This system puts the relationship between the brand and consumers and consumers' internal relationship as a principal position. The online community not only serves as a bridge of brand value but also as a channel for communication between users (Laroche et al., 2012).

Muniz and O'guinn (2001) pointed out that the network community needs to meet the following three key components:

(1) A sense of community belonging. It depends on two conditions. The first is legitimacy. As a pivotal link to distinguish the authenticity of internal members, it can judge which party has speculative behavior, followed by competition with other brands. In the general environment, the online community comes from the comparison with the brand of the same industry.

(2) Community rituals and practices. It can be used as a dominant link for internal users to copy and convey community value, and users can be connected through major events and specific behaviors in the brand. This link can promote the promotion of user loyalty and brand influence.

(3) The sense of responsibility of community members. It can reflect the user's sense of responsibility at the psychological level. The sense of responsibility can strengthen communication between users and enhance the degree of internal unity. There are two types of sense of responsibility, which can be reflected in the following two aspects: first, to maintain the users within the community, and then to promote the long-term development of the community; second, to enhance the sense of the use of the brand goods.

McAlexander, Schouten, and Koenig (2002) redefined the online community, which pointed out that brand, commodity, user, and other group relationships belong to the field of "network community". He constructed a novel network community system, namely the focus user core system. Through the above concepts, we can learn that: (1) The network community has a definite direction; (2) the users of the network community have broken through the space restrictions; (3) the network community is an important channel to maintain the community users and specific brands; (4) the network of network community relationship is more complicated.

Upshaw (2001) expanded the definition and connotation of the online community, pointed out that all aspects related to brand interests can be regarded as the construction conditions of the online community. Smith (2002) considered in his study that the consumers in the transactional online community as the studied party. After studying their purchase behavior, we can know that the actual perceived value of consumers can have a positive effect on the level

of consumer loyalty and purchase intention. The repurchase rate of consumers increases with the increase of the actual perceived value, and it is helpful for consumers to promote themselves.

Casaló, Flavián, and Guinalú (2007) propose the positive effects of participation in a virtual community on both consumer trust and loyalty to the product, brand, or organization around which the community is developed. Also, it proposes a positive effect of trust on consumer loyalty. Balabanis, Reynolds, and Simintiras (2006)' study is also based on the online trading environment and points out that it can promote the improvement of consumer loyalty from two aspects, the first is to improve the level of consumer satisfaction, and the second is to reduce the adaptability of consumers.

Chang and Chen (2008) divided the impact period on consumer loyalty into four specific periods as follows: perception period, contact period, buyback intention period, and actual buyback period, focusing on consumers in the perception period and exploring the role of interface quality in loyalty level.

The academic community has carried out more extensive research on community loyalty (Hamilton et al., 2017; Jamilah & Handayani, 2016; Wu, Xiao, & Wu, 2017). Hedonic, social, and learning benefits are the main factors to form community commitments (Kuo & Feng, 2013). However, members who identify with their online brand community develop brand commitment and self-brand connection, which leads to oppositional brand loyalty (Kuo & Hou, 2017).

Previous studies (Jamilah & Handayani, 2016; Kaur et al., 2020) have been carried out on many aspects, such as community responsibility. For example, Algesheimer, Dholakia, and Herrmann (2005) explored the recognition degree of users on the online community for European automobile clubs, which can acutely affect the probability of their independence. It can also improve their ability to shape the community and markedly reduce the institutional burden within the community. Besides, it can affect consumers' behavior and habits, which is usually reflected by participating in various activities organized by the community, conducting financial support, and promoting a sense of identity.

At the same time, many experts (Cheng, Wu, & Chen, 2020; Kaur et al., 2020) have also studied how to improve the loyalty level of community users. From the past research (Park & Yoon, 2018), we know that the level of user's community loyalty can improve users' intention to participate in community activities and enhance their sense of community identity.

Shang, Chen, and Liao (2006) take the Apple brand as the research object and analyze the role of consumers in the online community on brand loyalty. According to the active degree, the community users are divided into divers and active users. The research shows that divers

are more loyal than active users. The purpose of diving users joining the community is to understand the information about the brand or the products they need, not to communicate with each other psychologically.

Casaló, Flavián, and Guinalfú (2008) analyzed the role of participation in online community activities on the level of user identity and loyalty. In the study, it was found that the active degree of users in the network community can enhance the degree of identity and loyalty of users. Also, it can confirm the positive role of trust in the degree of user loyalty. Jang et al. (2008) explored the influence of online community characteristics on user community loyalty and recognition by four aspects: information level, system level, interaction degree, and community reward. The analysis points out that in the community constructed by the government, the information level and system level of the online community play a much higher role for the community commitment than the interaction level and reward; if the online community is constructed by users, the interaction degree and reward of the online community play a larger role for the community commitment than the interaction degree and reward.

Bagozzi and Dholakia (2006) pointed out that community identity can promote brand identity, and at the same time, it can have a practical impact on purchase. This article is not limited to the community field but focuses on the relationship between the user's attitude towards the community and the brand itself. As far as the final result can be known, community identity can affect the degree of brand loyalty. Numerous previous literature (Liang et al., 2019; Yao, Tsai, & Fang, 2015) shows that brand influence can be taken into account when analyzing the level of online community loyalty, which can regard community loyalty as an intermediate variable. These studies (Roh & Chang, 2019) mentioned above, usually rely on practical cases in the process of analyzing community and brand loyalty. Hence, they have a high practical value. Through the above conclusion, we can know that academia attaches great importance to promoting community users to build community and brand loyalty. During the analysis of how users build loyalty, a series of intermediate variables such as community identity and community loyalty can be added (Zhang et al., 2020). Simultaneously, ten meaningful conclusions are obtained, which can lay a solid theoretical foundation for this study.

1.2.1.2 Research status in China

Zhou (2015) compares the differences in the behaviors of different user groups in virtual communities. Young people are more potent than older people in terms of expected benefits and self-efficacy. Still, the difference between young people and older people in terms of knowledge contribution is not significant. Contributing knowledge and their expectations of

benefits are lower than young people. So, it has enlightening significance for the development of the human resources of the elderly.

Huang, Liao, and Zhou (2015) found that different virtual brand community experience components have substantial differences in the effect and mechanism of brand loyalty. Specifically, information experience can positively affect brand loyalty, whereas community identity plays a part of intermediary transmission; entertainment experience can also promote brand loyalty, but its role is entirely influenced by community identity intermediary transmission; interactive experience does not significantly affect brand loyalty.

From the perspective of organizational socialization, Liao et al. (2021) explored the management strategies and impacts of member socialization in the context of corporate online communities. The study found that the three socialization strategies of enterprises (information feedback, interactive support, and user education) have a positive impact on the formation of community identity, and community identity will positively affect consumers' willingness to continue participating and brand loyalty. At the same time, community identity plays a different intermediary role in different socialization strategies.

Zhang, Yuan, and Zhu (2018) use meta-analysis methods and random effects models to discuss the relationship between individual cognitive focus and online community participation. The result of the meta-analysis reveals that individual cognitive focus has a highly correlated effect on virtual community participation; the measurement dimensions of cognitive focus, the type of virtual community, and the characteristics of subjects will mediate and influence their relationship.

Tang and Jiang (2018) define the response behavior of customers in the virtual brand community to create value together and civic characteristics using Stimulus-Organism-Response (SOR) theory, combined with community research to conduct empirical testing. The results show that customer response behavior is significantly positively affected by consumption function, social interaction and self-achievement, and hedonic benefits, while citizen behavior is significantly positively affected by social and self-achievement and hedonic benefits. When customer response behavior is considerably affected by consumption function, citizen behavior is not notably affected; but citizen behavior is significantly affected by social and self-achievement benefits.

Liu and Yu (2017) clarified the mechanism of interaction between customers in online brand communities and their pleasant experience. The research results show that (1) the interaction between customers in the online brand community positively affects the pleasant experience of customers. (2) The sense of control and the sense of fusion plays a parallel

mediating role in the positive relationship between customer interaction and pleasant experience.

Shao et al. (2018) revealed the social influence effects in online brand communities, explored the influence of the cohesion of customer friend networks and structural equivalence in online brand communities on customer participation activity, and constructed a network effect autocorrelation model. The research results show that in the online brand community, the cohesion of the customer's friend network and structural equivalence has a positive effect on the customer's participation activity.

Based on the perspective of online communities, Xie and Wang (2019) found that user participation improves the company's new product development performance. The online community's sense of belonging and online community inclusiveness play an intermediary role in the relationship between user participation and the latest product development performance. Knowledge contribution has a positive moderating effect on this mediating effect.

Li and Wang (2020) explored the impact of the online review on the innovation performance of different types of members for the open-source design community based on the cognitive evaluation theory and the related results of the participation motivation and behavior patterns of open source community members. The research results show that the type of membership has a significant moderating effect on the relationship between the online review and the innovation performance of open source community members. The online review has little impact on the innovation performance of core members and has a significant effect on active members and secondary members' innovation performance.

Yang et al. (2020) aimed at the problem of not removing the impact of environmental factors in the study of the efficiency of knowledge exchange in online health communities and based on the analysis of the impact of environmental factors on the efficiency of knowledge exchange in online health communities, removing the impact of exclusion factors on the efficiency of knowledge exchange in online health communities. After excluding the influence of exogenous factors, the efficiency of knowledge exchange in online health communities is reduced; user authority and posting quality have a positive effect on the efficiency of knowledge exchange in online health communities, while user enthusiasm has a negative effect on the efficiency of knowledge exchange in online health communities.

1.2.1.3 Research Overview

From the above literature review, we can see that since the establishment of the virtual community, the online community has become the focus of domestic (e.g., from China) and

foreign scholars' research interest. Indeed, scholars have conducted in-depth research on the online community from different angles. The specific research methods are mainly empirical and case studies (Jamilah & Handayani, 2016; Roh & Chang, 2019), which are mostly due to more information and mature research methods and draw significant conclusions.

These conclusions are closely combined with many other disciplines, such as the theory of marketing, mainly for the further promotion of traditional marketing, and played a more influential role in the research process (Meng & Wang, 2019). At the same time, many scholars focus on the concept of the virtual community, focusing on the idea of functional research (Li & Wang, 2020; Sirola et al., 2021).

Relationship marketing mainly focuses on the main relationship in the community, especially the relationship between community members and the community, which is also an important aspect of relationship marketing research, that is, how to embody and maintain community loyalty in community operation (Hamilton et al., 2017). The research on community mainly includes the following two aspects.

One is from the participation motivation of members, that is, to study the behavior of community members, which is introduced into the theory of consumer behavior (Wang et al., 2021). The second is the value benefits that the community can provide for its members, which mainly refers to what kind of benefits the community members can get from it, that is, the relationship marketing is embedded into the research of community value, such as the trust and identification of community members (Kim, 2020).

In other words, this will directly turn the online community into an experimental field to test the application of relevant theories, such as relationship marketing and customer relationship management, which are rich and scalable in theoretical research. In the current marketing relationship, relationship marketing is a salient branch, and the academic community has reached a preliminary consensus on this proposition (Thaichon et al., 2019).

Therefore, the research on the online community will become the focus of academic research for a long time because it involves many disciplines, especially the relationship between members and brands, such as the impact on brand loyalty, image, and other factors (Jamilah & Handayani, 2016).

This dissertation focuses on the relationship between members and the online community and mainly analyzes whether the community value can effectively drive community loyalty.

Therefore, in general, based on the literature review from China and abroad, this dissertation offers a detailed and eloquent analysis of the concept of community and studies the relationship between community value and community identity and loyalty.

1.2.2 Purpose and significance of the study

1.2.2.1 Research purpose

The aim of this dissertation is to study the factors that affect the formation of online community loyalty from the perspective of social capital and social support theory. This dissertation also identifies the internal mechanism of the influence of different dimensions of social capital and social support on user community loyalty and reveals the potential intermediary mechanism to deepen the loyalty of online community users.

Specifically, the dissertation aims to answer the following research questions:

(1) Whether and how social support influences online community members' loyalty formation?

(2) Whether and how social capital influences online community members' loyalty formation?

1.2.2.2 Research significance

Internet technology and online communities are increasingly deeply integrated into our daily life. The new business environment faced by enterprises also impacts their technology management. For example, the impact of online shopping on physical stores requires the traditional enterprises must actively adjust their strategies to adapt to the changes in the environment actively. At present, the academic community has begun to pay attention to the impact of the Internet and other related technologies on marketing, especially the online community connecting corporate brands and consumers (Xie, Yang, & Xiao, 2016).

(1) Theoretical significance

At present, the academic research on the online community is gradually expanding. Since the emergence of the concept of the online community, many scholars mainly study the concept of the virtual community, such as conceptual functionality (Chai & Wang, 2007). Kaur et al. (2020) also analyze how to carry out the operation of the online community effectively and how to improve the loyalty of community members and their sense of community. On this basis, community operation is introduced into the theory of relationship marketing.

This dissertation studies and analyzes the relevant research based on the dimensions of user social support, social capital, user trust and satisfaction, and community loyalty, which replenishes the lack of attention of existing literature on social factors in online communities and further help to enrich the current research on antecedents of user loyalty in online communities, and also provides a reference for the following research fields.

① Research field of brand management

At present, the relevant theoretical research is generally based on brand research. That is, the brand is not only the relationship between the community members but also other relationships, which means that the brand has relations with many stakeholders, so this can promote the enrichment of brand relationship to a great extent (Kim, 2020).

The concept of the online community is based on the traditional brand marketing theory, and the corresponding theory is incorporated into the online community research, and the relevant research results should be further verified.

This dissertation involves social support, social capital, user trust and satisfaction, community loyalty, and other dimensions to study and the internal relationship between them, so in general, the concept research of this paper can more effectively verify the relevant research.

② Relationship marketing and customer relationship management theory

Relationship marketing in the online community mainly focuses on the main relationships in the community, especially the relationship between community members and the community. This is also an important aspect of relationship marketing research, that is, how to embody and maintain community loyalty in community operation. These relationships can be included in the scope of customer relationship management.

The online community is generated under the theory of relationship marketing, from which we can see the internal relationship. Online communities represent the interaction and association between brands and members. This paper also believes that customer relationship management has played a great role in the development of online communities.

Simply put, enterprises can regard online community management as an important part of customer relationship management. The theoretical model proposed in this paper is the relationship between oneself and members and the community, which will help to carry out community relationship marketing to a great extent.

(2) Practical significance

At this stage, under the premise of more and more common Internet applications, various online communities have also been rapidly developing. For companies and customers, they should start with their interests and build online communities. Therefore, the construction of an online community and the corresponding theoretical research can help to promote the development of community operation and improve the recognition and satisfaction of members to the community, which can effectively guide the orderly development of various work.

① Community Manager

Based on the relevant analysis and research, it can be found that community managers should change their focus, focus on the research of members and community relations, to effectively improve the recognition and loyalty of members to the community, which is also the main problem that managers should solve at present. Based on the online community, this paper studies the corresponding conclusions, which can provide a reference for enterprise leaders to carry out leadership.

② Enterprises

With the rapid development of the market economy, enterprises are facing increasing competitive pressure in the current environment. From the perspective of enterprises, how to improve market competitiveness is a major concern that must be solved. In the current environment, most of the producers pay more attention to customers and get effective contact, which can fully understand and meet the diverse demand of customers. The continuous development of the online community can benefit enterprises.

At present, the online community has the characteristics of traditional design and network community, which can provide users with more convenient and fast communication services. In this way, it is helpful for the timely interaction of community members and can be effectively applied.

Through the timely exchange and sharing of information in the community, community members can help to provide ideas for the development of new products. With online communities, enterprises can understand the needs of target customers for the first time, and develop products targeted to consumers, and improve consumers' satisfaction with products. It also helps enterprises further adjust their development direction and occupy a favorable position in market competition.

Based on this, the virtual community is not only for all kinds of non-commercial industries. At present, more and more virtual communities are based on enterprises' business interests and have been developed rapidly.

According to the analysis of relevant scholars (Horne et al., 2018; Logsdon et al., 2014; Qian & Wang, 2013), producers can develop new products based on the utilization of various information resources in the online community. And the relevant point of view suggests that the online community helps to build a stable relationship between enterprises and customers.

Based on this platform, producers can master consumers' information more comprehensively and objectively, which can help to promote the development of marketing decisions and build more objective and accurate decisions to deal with various customer problems effectively. Therefore, through the construction and management of the online

community, it will significantly help to enhance the recognition of members of the community and also contribute to the development of enterprises.

Through the results of this paper, we expect to help enterprises to realize the key point for properly and comprehensively developing the online community. The relevant conclusions can also help enterprises to manage the development of online communities better. Focus on the direction of community development of enterprises, and based on the loyalty of community members of the community, we attempt to ensure that they can get the corresponding information stably.

1.3 Research route and logical structure

This dissertation is organized into six parts.

The first part is the introduction, which mainly describes the research background, research significance, summarizes the state of art, presents research ideas and innovation points, and defines the research objectives and questions.

The second part is the literature review, which mainly introduces the definition of an online community and the related theory of online community, which is also the theoretical basis of the full-text research. The main research idea is to sort out the related literature of online communities, extract the factors influencing the variables, and summarize them. Then, from the perspective of user loyalty, find the driving factor model to measure loyalty, and then find the typical factor model based on the theoretical model and full-text research.

The third part is the model design. Firstly, we argue and establish the research hypothesis, and then the research model is constructed by defining the research variables in the model.

The fourth part is the methodology, which includes the research context, the questionnaire design and data collection, the design of the questionnaire structure, and then the data analysis and data collection methods for the necessary explanation.

The fourth part is the result analysis of the research data. PLS-SEM was used to test the model in detail based on the collected data of the online questionnaire, including descriptive statistics, reliability and validity test, and structural model test.

The sixth part is the research conclusion. It mainly summarizes the research conclusion of the full thesis, especially the core research conclusion, and puts forward corresponding suggestions and implications according to the analysis conclusion. In the end, this paper represents a brief description of the limitations and future research prospects.

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Chapter 2: Literature Review

2.1 Customer satisfaction and customer retention

The primary purpose of a business is to maximize profits for its owners or stakeholders through goods and services purchased by consumers (Jensen, 2001). Products and services are being developed by firms and they map out appropriate strategies in offering them to targeted customers. The targeted customers get convinced and make a purchase for use and satisfy their needs. When targeted customers are satisfied with the goods and services they keep on making purchases. Customer loyalty is defined as a process or an outcome (Fredericks, Hurd, & Salter II, 2001). The rate at which firms' products are purchased by consumers and quality online practices result in customer loyalty retention, patronage, and loyalty to the organization. Once a client is fulfilled is probably going to stay steadfast to the company's product and will repeat purchase, he will also go further to spread the great experience to potential clients. Satisfaction is a feeling of pleasure, when customers receive what they want or finish what they want to do, they will feel satisfied (Lin & Mattila, 2010). Customer satisfaction is a measure of how products and services supplied by an organization meet or surpass customer expectations. Therefore, customer satisfaction is a measure that determines how satisfied customers are with the company's products, services, and capabilities. Customer satisfaction information, including surveys and ratings, can help companies determine how best to improve or change their products and services. Customer satisfaction indicates the fulfillment that customers derive from doing business with a firm (Yang & Peterson, 2004).

Customers would be in a neutral stage if perceived their expectations met performance. The general fulfillment has a solid constructive outcome on client repurchase intentions over an extensive variety of items and services. Sales process, after-sale service, customers expectation, and whether the client is fulfilled after buying depends on the offering of the item and customer expectation. Expectation can be formed by customers from their past experience, friends, associates advice, marketers, competitors' data, and guarantees (Serenko & Stach, 2009). Expectation are being determined by customers' needs, total value, and total cost. Choosing a good or service is among the stages customers go through. Buyer's characteristics influence its decision, such as culture, social, individual and mental elements. The consumer buying process

includes five stages: 1) new recognition, 2) information search, 3) information evaluation, 4) purchase decisions and 5) post purchase evaluation. Information search is the key to consumer's decision-making process which can be for both inward and outside information.

Consumers continue to search for information because of the risk with a specific goal and to get together the uncertainties of potential positive or negative consequences (Peterson & Merino, 2003). Customers may go through all the five stages or they may skip some of those stages. However, the customer is looking for the value in the product they are buying. Customers seek information about the product they need to purchase to check if it is in line with their expectations.

Customer accumulation is imperative and should be paid attention to this issue always. Many studies have demonstrated that it is difficult to measure customer satisfaction. However, satisfaction has positive outcomes, such as repeat purchase behavior and positive word of mouth (Abubakar & Mavondo, 2014).

The term of customer retention and customer loyalty are being used interchangeably (Alshurideh, Masa'deh, & Alkurdi, 2012). The concept of Customer retention was first developed by Reichheld and Sasser in 1990. Other authors claimed that customer retention and loyalty are not substitutes because they are different. states that retention is continuation of business with a particular organization on ongoing basis.

A more detailed and recent definition for the concept of retention is "customer liking, identification, commitment, trust, readiness to recommend, and repurchase intentions, with the first four being emotional-cognitive retention constructs, and the last two being behavioral intentions. Customer retention refers to the ability to a company or product to retain its customers over some specified period (Stauss et al., 2001). The goal of customer retention programs is to help companies retain as many customers as possible, often through customer loyalty and brand loyalty initiatives (Singh & Khan, 2012). Commitment is vital in business relationship because, it ensures strength, stability, durability, and profitability of relationship (Ferro et al., 2016). In order to achieve customer retention, the firm and customer have to be in the relationship (Bahri-Ammari & Bilgihan, 2017). Studies have shown that the meaning and measure of client maintenance varies (Voorhees et al., 2017). There are a many benefits firms that focuses on client maintenance gain, such as, an increasing overall revenue, quicker development and great returns (Tavor, 2011).

Customer retention is closely related with the positive word of mouth (Abubakar & Mavondo, 2014). Positive verbal exchange is known as powerful method in marketing from the customer perspective. The idea of informal advertising brings value to marketing world of

business. Positive verbal exchange is easy to maintain client loyalty and result in an increment in client base (Anunobi & Mbagwu, 2009). The author likewise affirms that a relationship exists between informal exchange and customer loyalty. Informal exchange means the spreading of good news about products and services between people apart from a company's advertisement for goods or services. Alomaim (2003) states that people persuade others to purchase because of the benefits they have gotten from the product.

2.2 Customer loyalty

2.2.1 Research on the concept of loyalty

Researchers have not yet formed a consistent view on the idea of loyalty (Song, Wang, & Han, 2019). Scholars' views on loyalty can be divided into the following three categories (McCall & Voorhees, 2010): first, based on the behavior of online community members; second, based on the attitude of members; third, combining behavior and attitude.

(1) The Research on loyalty from the perspective of online community members' behavior points out that the satisfaction of online community members will inevitably affect the loyalty of members to a great extent. Its main external manifestation is reflected in whether to buy products repeatedly.

Tucker (1964) proposed that the loyalty of online community members is generally reflected in whether they buy products repeatedly. This means that companies should pay more attention to the customer purchasing repeat rate and not pay too much attention to the change of attitude. Newman and Werbel (1973) proposed that as long as online community members have high loyalty, they will not give up the products they have been using to choose other products from competitors.

(2) The research on loyalty from the perspective of online community members' attitude Shang, Chen, and Liao (2006) pays more attention to whether the online community members have repurchase intention rather than pay much attention to their actual behavior. This stream of studies assume that a repeat purchase will result in a final actual purchase. Of course, we can't deny that many situational factors affect whether the relationship actually exists.

Jacoby, Chestnut, and Fisher (1978) believe that it is not comprehensive to pay attention to the repeated purchase behavior of online community members. Even if they make this behavior, it does not mean that they are loyal Customers can make repeated purchases because it is more convenient to buy from that company (Hult et al., 2019).

Bennett and Rundel-Thiele (2005) proposed that the loyalty of online community members is more reflected in the degree of their preference, that is, whether their willingness is inclined to buy, rather than just reflect their loyalty from the behavior.

(3) The research on the combination of behavior and attitude (Baldinger & Rubinson, 1996) do not only focus on one aspect of online community members' behavior or attitude. Scholars that adhere to this view believe that the two approaches can be effectively linked, which helps to provide sufficient support for theoretical research. If we only focus on one aspect, it is easy to cause a one-sided impact on community development. Oliver (1999) proposed that the loyalty of online community members reflects the attitude preference of the members and that their attitude have an enhanced effect on the purchase behavior of members. This will affect the purchase habits of members to a certain extent and then reflect the consistency of attitude and behavior.

2.2.2 Factors influencing loyalty

Many scholars (Duffy, 2003; Su & Chang, 2018; Wan & Chan, 2013) put forward that various factors can affect loyalty. The factors that can affect loyalty involve the personal characteristics of online community members and other variables.

Aaker (1996)'s research suggests that the experience of the online community members will significantly affect their loyalty. The author concluded that 25% of the community members over the age of 50 have high loyalty. However, only 9% of the community members under the age of 29 have high loyalty. Thus, age can affect the loyalty of online community members. At the same time, the research points out that the loyalty of members is positively correlated with their income.

Goldman (2010)'s research suggests that the higher the loyalty of online community members, the less the time they spend on information search when purchasing, which shows a significant negative correlation. Kraft and Weber (2012) mainly analyze the relationship between gender and loyalty. Through the analysis, they found out that women's loyalty to a brand is significantly higher than men's loyalty. Frank, Douglas, and Polli (1968) analyzed the social status of online community members and found that loyalty and social status showed a significant positive correlation. They further found that education level and loyalty showed a negative correlation. To some extent, it can also reflect that with the increase of the education level of community members, they will adopt a more rational way to purchase products.

Jeon et al. (2021) found that consumer satisfaction not only directly increases loyalty, but the service landscape also indirectly affects consumer loyalty through emotional and mobile experience in the fitness industry. In other words, when consumers are satisfied with fitness centers, they may engage in buyback and word-of-mouth behaviors because they have developed attractive service landscapes that enable them to experience positive emotional and cognitive experiences. This finding supports a large amount of literature that believes that consumer satisfaction is the main determinant of repurchase and word-of-mouth. In addition, the results of the indirect influence of the service landscape on consumer loyalty support the existing literature on the indirect influence of the service landscape on consumer loyalty in different industries. Taken together, the author concludes that in the context of the fitness industry, developing an attractive service landscape is essential for consumer experience, satisfaction, and loyalty.

Liao et al. (2021) found that workplace frustration, autonomy needs satisfaction, and ability needs satisfaction have a positive relationship with online game player loyalty. In addition, frustration in the workplace enhances the link between satisfaction with competency requirements and online game player loyalty. Their findings provide a key message that game providers can design effective ways to retain their gamers by understanding players' frustrations in the workplace and telling them that playing games can alleviate related negative emotions.

Swoboda and Winters (2021) analyzed whether there are reciprocal effects between images of major purchase channels, and how they affect consumer loyalty. The results show that the online channel image can be enhanced by the offline channel image, and vice versa. The equivalent of offline (and online) images responds to greater loyalty to overall retailers, offline channels, and surprisingly online channels.

Martínez-González and Álvarez-Albelo (2021) found that young consumers have a positive attitude towards e-commerce, with high online consumption and great potential for online shopping. The significant impact of website personalization on consumers' first impressions has also been confirmed. In addition, the first impression affects the perceived quality of the website, and in turn, this quality also affects consumers' online purchase intentions and loyalty to the website. Finally, it shows that online shopping intentions have a direct and positive impact on website loyalty. Therefore, this research provides knowledge for travel managers and encourages young consumers to be loyal to the website in a market-oriented context.

Bauer et al. (2020) designed two behavioral experiments in the digital retail environment to examine how games with or without monetary incentives affect retailer satisfaction, customer

loyalty, and positive WOM intentions. In summary, the research results show that playing shopping-related games without any monetary incentives can increase customer satisfaction, loyalty, and WOM's positive intentions to the same extent as a 20% price discount.

Molinillo, Anaya-Sánchez, and Liebana-Cabanillas (2020) explored the impact of social support and community factors on customer engagement, and the subsequent impact on customer loyalty to social business sites. The research results show that customer engagement is considered to be the key predictor of the four customer loyalty intention dimensions of social business websites. Therefore, participating customers may co-create with the company, spend a longer time on the website, spread active eWOM and buy back products through the social business website. Participating customers have a more positive view of their relationship with social commerce sites, perhaps because they are satisfied with their repeated experience. The higher the customer participation, the greater his/her active participation, commitment, interest in helping others, willingness to support social business companies, and repurchase behavior on the website.

Abumalloh, Ibrahim, and Nilashi (2020) found that trust and satisfaction have a positive effect on the loyalty of recommending agents, that is, increasing consumer satisfaction and trust will increase consumer loyalty to recommending agents, which will be reflected in the profit growth of merchants, and Reflected in a stable manner, this long-term relationship can be emphasized as an iterative cycle between the referral agent and the customer.

Hyun (2020) claims that the pricing strategy, direct purchase strategy, payment strategy, and website strategy of online shopping malls have a positive impact on customer loyalty. Therefore, the online shopping market is in fierce price competition and is one of the markets that is difficult to distinguish. However, even in these markets, there are differences between the strategies implemented by online shopping malls, which have proven to actually affect customer loyalty.

Cho (2019) studied the factors that influence the loyalty of online shopping malls in the United States. This research proposes a model to investigate the relationship between website quality, satisfaction, attitude and loyalty. Research these assumptions by analyzing structural equation models. 280 US samples were used for final analysis. The results show that the model is very suitable for the sample. It is found that ease of use is an important variable of its satisfaction, and it does not have a direct impact on the attitude of the site. Information quality is a key variable in consumer satisfaction and attitudes towards websites. Satisfaction directly affects attitude and loyalty, and attitude directly affects loyalty.

Busser and Shulga (2019) research shows that consumer participation in the advertisements generated (CGA) by American coffee shop brand consumers has a positive impact on the loyalty and trust of brand customers and non-customers. Transparency establishes the perception of brand authenticity; authenticity and transparency both significantly and positively affect trust, but only authenticity affects loyalty. Compared with brand customers, participation in CGA has a greater impact on non-customer loyalty. Non-customers' perceptions of brand authenticity have a greater impact on brand trust than on customer perceptions.

Tseng and Lee (2018) examined the convenience of consumers' loyalty to brand applications (sustaining intention, in-app purchase intention, and word-of-mouth intention) from the perspective of dual routes. One way is the emotional (relationship) route, in which brand advantages (functional advantages, experiential advantages, symbolic benefits, and monetary benefits) promote semi-social interaction between consumers and brands, which in turn affect brand application loyalty. The other route is the practical route, where system characteristics (system quality and information quality) affect perceived usefulness, which in turn promotes brand loyalty.

Suhartanto, Triyuni, and Leo (2018) carefully examined the influence of electronic service quality, customer value, customer trust and customer satisfaction on customer online loyalty behavior. Using 250 data collected from Bandung, Indonesia, the results show that all loyalty determinants are important factors that affect customer loyalty in online shopping. However, the impact of perceived electronic service quality on customers' loyalty to online shopping is often indirectly through the enhancement of customer trust in retailers, customer perceived value and customer satisfaction with online shopping.

Yun et al. (2018) investigated that how brand value of discount store online shopping mall affects brand loyalty according to the purpose of the study and improved purchasing through discount store online shopping mall, brand trust, customer satisfaction and brand loyalty. The research shows that brand trust has a significant positive effect on customer satisfaction, but no positive effect on brand loyalty. Similarly, customer satisfaction has a significant impact on brand loyalty.

Li and Choi (2019) studied how the attributes of O2O tourism product selection affect customer satisfaction and loyalty, as well as the moderating effect of perceived value, and collected 288 online survey samples of Chinese tourists using the service. The results show that all attributes such as safety, convenience, and economy of O2O tourism products have a positive impact on customer satisfaction and loyalty. In addition, the security and economic impacts are also affected by the mitigation effect.

Kang and Shin (2016) studied how the type of virtual brand community (VBC) affects VBC loyalty through specific types of interactions. The results showed that human-computer interaction did not mediate the relationship between perceived functional benefits and VBC loyalty, and human-computer interaction did not significantly mediate the relationship between perceived symbolic benefits and VBC loyalty. However, the mediation effect of human-computer interaction is of great significance in perceiving the relationship between experience benefits and VBC loyalty. This shows that the perceived benefits (function, experience, and symbolism) of consumers are the main variables that induce consumer loyalty. Brand community managers should not only focus on the benefits provided by the brand community, but also how these benefits are related to the interactions between people and computers and consumers.

Chen, Huang, and Davison (2017) studied how the seller's website quality (ie, information quality, system quality, and service quality) affects the development of the social capital of both buyers and sellers, thereby increasing buyers' loyalty in the C2C online shopping environment. The data collected by TaoBao, China's largest C2C online shopping platform, from 307 buyers was used to empirically test the research model. The results show that not all of the three dimensions of website quality are related to cognitive and structural capital. Positive relationship. In addition, although cognitive capital and relationship capital have a positive relationship with buyer loyalty, structural capital has nothing to do with buyer loyalty.

2.3 Community theory research

2.3.1 Concept of community and social networking sites

Social networking sites (SNSs) are virtual communities where users can create individual public profiles, interact with real-life friends, and meet other people based on shared interests. In fact, the change of communication technology is very common, sometimes very fast. Today, individuals engage in social activities on the Internet that are very different from 20 years ago. Activities such as chat rooms and mud have largely disappeared from the user's consciousness and have been replaced by newer platforms such as social networking sites. Social networking sites are defined as network communication platforms, in which participants 1) have unique identifiable profiles composed of content provided by users, content provided by other users and / or system level data; 2) Be able to publicly express the connection that can be viewed and

browsed by others; And 3) can consume, generate and / or interact with user generated content streams provided by their connections on the site (Clark, Algoe, & Green, 2018).

The author conceptualizes social networking sites as technologies of self and community, which enable individuals to present themselves and make the community's evaluation of individuals concrete by identifying structures such as page views, friends and love (Whittaker & Gillespie, 2013).

The results show that participants' disclosure behavior follows clear clues indicating the disclosure frequency norms, while the implicit social norm leads to the increase of the overall disclosure frequency and the impact of disclosure accuracy when clear clues prevent disclosure. The study explores how these cues affect privacy setting decisions, and finds that explicit cues that indicate others' privacy setting can increase the strictness of participants' privacy setting, but implicit cues have no effect. These results show that explicit cues about SNS specification can trigger power flow heuristics, and monitoring primes can affect self disclosure in limited cases (Spottswood & Hancock, 2017).

Social media systems, such as weblogs, photo and link sharing sites, wikis and online forums, are now thought to generate up to a third of new web content. One thing that distinguishes these "Web 2.0" sites from traditional web pages and resources is that they are intertwined with other forms of Web data. Their standard hyperlinks are enriched by social networks, reviews, references, advertisements, tags, RDF data and metadata. We describe recent work on building systems that use blogosphere models to identify spam blogs, find opinions about topics, identify communities of interest, derive trust relationships, and detect influential bloggers. Social media systems based on e-commerce, such as blogs, wikis, media sharing websites and information forums, have become important new ways to transfer information, participate in discussions and form communities on the Internet (Finin et al., 2008).

Boyd and Ellison (2007) defined SNS as "web-based service" in their pioneering work, which allows individuals (1) to establish a public or semi-public personal file in a limited system, (2) to clearly list other users who share a connection with them, (3) View and traverse their list of connections and those established by others in the system. " They specifically listed Facebook and Youtube as examples of typical SNS.

Social networking is clearly a way to connect with friends, family and other known individuals. Visiting SNS is fun and interesting. Social network is also a forum for political discussion and expression, as well as an outlet for political information (Kaye, 2010).

Social networks have surpassed e-mail as the most common online contact method (Nielsen, 2009).

Because SNS information jumps among millions of users every day, it is difficult to quickly distinguish fact from fiction, news from opinion, scientific prediction from speculation. It is understandable that evaluating the credibility of SNS information is a complex thing. In addition, social media allows people to search for political information and express their political views, which makes them consumers and producers of political information. Information also appears in many forms. This information may provide users with new perspectives and strengthen existing values, or users may choose to ignore this information completely. Scholars have confirmed that political candidates are increasingly turning to social networking sites (SNS), which have become prominent sources of political information. This study uses an online survey to examine the degree to which online users who are interested in politics believe that SNS is trustworthy. Of the nine traditional and online sources surveyed, SNS was rated as the most unreliable. Dependence on social networks proved to be the strongest predictor of SNS credibility (Johnson & Kaye, 2014).

Google dreams is a book based social networking site owned by Amazon. Members can share books, read, comment on books, evaluate books and connect with other readers. With tens of millions of book reviews, recommendations and ratings, goodreads can help librarians and readers choose relevant books. This paper describes the first survey of Google dreams user attributes, using a random sample of 50000 members. The results show that about three-quarters of the public data members are women, and there is little difference between male and female users in behavior patterns, except that women register more books and give less positive comments on them. Most of the features of the site are widely used by librarians and super users. There is no strong correlation between books and books, and social use statistics (e.g., the number of friends, followers, books, reviews, and ratings) show that members choose their own personal balance of social and Book activities and rarely ignore one at the expense of the other. As a result, goodreads is neither a book based website nor a major social networking site, but a real hybrid social navigation site (Thelwall & Kousha, 2017).

Social networking site is a kind of network-based communication platform, which supports the social interaction between contacts on the site (i.e. "friends") (Ellison, Steinfield, & Lampe, 2011).

We expand our knowledge of the impact of social capital on the use of social network sites, and predict the general and Facebook specific bridging social capital gains by identifying specific relationship maintenance behaviors that support SNMP. We believe that Facebook's social and technical support makes it easier for individuals to invest and extract social resources from their social networks and visit friends of friends who may provide novel information

resources. Most importantly, these findings emphasize the importance of actively managing, grooming and maintaining a person's network, which shows that social capital is not only generated through the connections existing on social networks, but also developed through the small and meaningful efforts of users in maintaining relationships, such as answering questions, congratulating or sympathizing with others, Record the past of a meaningful day. This work helps us to understand the relationship maintenance activities in social networks, and shows that the real benefit of social network sites may not only be that they make technology connection possible, but also that they can flow through creating a meaningful communication environment and the potential social capital benefits they embody. (Ellison et al., 2014).

79% of Internet users use Facebook and visit Facebook 8 times a day on average (Greenwood, Perrin, & Duggan, 2016). According to Clement (2019), about 30% of the world's people use this online social networking site (OSN).

In the past few years, the popularity of social networking sites (SNS) has increased rapidly. They can also be called virtual communities, social network services, social network systems on the Internet, online social networks, online social websites, social websites, social website portals, social websites or Internet social websites. Their main goal is to create, maintain and present social relationships to their users, and make them match each other. In order to achieve this, they use some additional communication services, such as e-mail, chat, instant messaging. Recently, the concept of social networking and publishing and blogging services is often referred to as social networking, and the common term of the system is social networking. Typical examples of social networking sites are Facebook, Friendster, Orkut, cube, eademi, Myspace and LinkedIn, which are created and maintained by commercial companies. The main features of social networking sites are: self expression (maintaining personal data), including showing personal achievements, building relationships with others and communicating with each other. In these online sites, there are several ways of communication between users, depending on the function of the portal: email, chat, forum, blog, comment, test, photo / movie album, etc. Generally speaking, the more communication channels the network provides, the better. This provides a greater opportunity to create new and maintain existing relationships within the system (Musiał & Kaziienko, 2013).

Twitter is a microblog service platform, originally used to "follow" celebrities and politicians. It provides short updates of daily activities, provides a platform for microblogs, or tracks popular trends. However, it has developed into a global forum for all topics. Twitter, for example, is used to spread breaking news ahead of traditional media and to play a role in online

political discussions, creating a "virtual VIP room" to connect the active audience of specific TV programs on an unprecedented scale (Wignall, 2017).

Murthy (2012) stressed this point, suggesting that Twitter should be seen as a social media site because its design is "to promote social interaction, share digital media and collaborate", usually with strangers rather than creating online communities (Murthy, 2010).

LinkedIn allows users to have all their professional contacts in one place, provides simple information between link members, and makes it easy for others to understand your work if you take this opportunity to complete your professional profile. Users can use the infrastructure provided by LinkedIn to organize private discussion groups. LinkedIn's access is free, but it also offers advanced features, such as being able to find out who has read your profile on the basis of paid subscription, and get access to your network outside of the people who have access to the information (Citrome, 2015).

Research gate is an academic web site. You can choose to receive a notification of a paper published by the person you "follow" and you will receive a notification if one of your own papers is also cited. Research gate can track the summary view of your work, publication download and publication view, as well as the citation count of other papers on your work. It calculates the "RG score," based on the publications in your profile and how other researchers interact with your content on the research gate "Influence points are also displayed based on how often you visit the publication." Searchgate is now available for free (Citrome, 2015).

The benefits of using LinkedIn and ResearchGATE include the ease of connecting with your colleagues or people who want to work with you. They can be used for professional and commercial purposes, unlike Facebook, where many of the posts and interactions are personal between family and friends. One of the important things to pay attention to when using social media is to pay attention to your professional image. Disruptive and unprofessional behaviors include invasion of patient privacy, use of blasphemy, and vulgar, negative, or caustic comments on people, employers, or organizations (Citrome, 2015).

Wechat is one of the most popular social networking sites in China, with more than 600 million active users worldwide. Wechat is a cross platform communication application that combines the popular functions of Facebook and Whats. It allows users to create profiles, search for friends or find new friends in their own geographic location. On this profile, users can send instant messages, voice notes and free voice calls. In addition, wechat allows users to post information, pictures and videos of interest, as well as comments on friends' posts. All these functions make wechat popular in social networking (Hou et al., 2018).

Another popular SNS in China is weibo, which was founded in 2009 and has more than 204 million users. Weibo allows users to post 140 characters of information. Similar to twitter, but different from wechat, weibo focuses on opinion sharing and information exchange rather than social interaction, and provides some anonymity in online communication. Weibo doesn't need users to post their own personal information to find "friends". It pays more attention to "who are you", but more to "what do you say" and "what do you say". The reduced social pressure brought by anonymity may mean that wechat users have different motives to use weibo. In addition, an interesting previous study found that only 2 / 10 of the interviewees used wechat to find new friends. This means that most people use wechat to keep in touch with the friends they meet in real life. Therefore, it is expected that these differences will become evidence of the relationship between personal characteristics and overuse of micro blog and micro blog (Hou et al., 2018).

Tencent QQ (commonly known as QQ, Tencent QQ website: <http://www.qq.com>). It is an instant messaging tool developed by Tencent Holdings Limited in 1999. It has more than 700 million active users and has become the largest online application in China. QQ users can send messages, share photos and files, post microblogs, and use computers or smartphones to chat with friends in voice or video. Social group is one of the main functions of QQ, which allows multiple users to communicate instantly. Messages published by members are immediately received by all other group members. If necessary, any two members can communicate through a separate channel. In addition to personal relationships, some groups are composed of members with common interests, such as movie lovers, or belong to the same organization, such as a university or company which is usually based on exclusive social circles of physical organizations.

2.3.2 Concept of online community

In essence, an online community is a community network, which can involve all aspects of information users need through an extensive local area network based on "community" (Red et al., 2011).

Online community provides an essential platform for the public to communicate with each other in the form of a forum, post-bar, and other formats. At the same time, discussions around a topic will attract members with the same interests. Scholars at home and abroad have also made full and comprehensive research regarding online communities (Cleveland-Innes, Garrison, & Kinsel, 2007).

Rheingold (1993) is the first scholar to put forward the concept of "online community". He suggests that the online community is a public domain based on combined interests constructed by virtual identity through a network lock. Its essence is virtual reality. It does not have a clear concept of location but introduces the software and hardware equipment of the network into it. Using these tools to show virtual reality can reflect the interactive characteristics, let the public have a clearer perception, which can improve the sense of experience.

Kozinets (1999) claims that the interaction in the virtual community is based on people's desire to satisfy four basic needs: interest, relationship, fantasy and transaction. Under this classification, by gathering in a scattered group of people with the same interest and expertise in a specific topic, the interest needs are positioned in the virtual community. This kind of relationship demand gives people with similar experiences the opportunity to get together to build a meaningful community. By obtaining the knowledge segmentation information of the community's interactive mode, profile, and member type, marketers can gain a competitive advantage.

Hagel (1999) claims that the online community is a virtual space for the public to communicate and share information according to their interests and hobbies. To a great extent, it can use the Internet to realize commercial and social values. Online communities are divided into three types: the first type is established around a certain group's interest, the second type is a geographic and demographic-oriented community, and the third type is business-to-business.

Lee, Vogel, and Limayem (2003) suggest that an online community is based on information technology, mainly based on the interaction and information sharing between community members to create a good community relationship. The research uses different informatics tools to investigate 200 virtual communities. The results show that forums are the most popular tool in virtual communities. In order to promote the development of the community, community informatics can become a useful tool for relationship building and knowledge sharing.

Preece, Maloney-Krichmar, and Abras (2003) pointed out that the online community is mainly a virtual social space where the public choose to gather to obtain the corresponding information or find ordinary interest fans. A group of people who socialize in a virtual environment is an online community, which has a purpose, technical support, norms and policy guidance. These three points have greatly affected the nature of the community, including the size of the community, the life cycle of the community, and the community members' Culture.

Mansuri and Rao (2004) claim that the online community is a network community based on the common interests of some people. In addition, their study found that community

participation projects for the poor did not have a high level of participation, and the quality of community-based development projects led by the elites was often higher. There is evidence that: good community projects usually need to be carried out in a specific context, take a long time, and need to use a well-designed monitoring and evaluation system.

Luo (2002) proposed that the online community is essentially based on the Internet, electronic media, and interactive exchanges around shared interests. Based on relationship marketing and social exchange theories, trust plays a key role in a community that exchanges interests. Because the electronic market is highly uncertain and lacks adequate legal supervision, building trust in the community is considered an effective way to solve consumer privacy issues.

Ihl, Strunk, and Fiedler (2020) claim that online communities are an effective means of establishing relationships between scattered and remote individuals. Recognition occurs when community members experience a supportive social online environment and establish cognitive and emotional commitment between group members. Therefore, supportive social interaction in online communities is an important network-based activity that helps to establish identities among almost interconnected individuals.

Lee and Kim (2005) confirm that there is a difference between the influence of personal participation motivation on online communities and the influence of social influencing factors on commitment. The motivation of individual participation in the online community has a positive impact on behavioral commitment, but the social influencing factors are not significant. Among them, the motivation of individuals to participate in online communities is divided into three aspects: perceived usefulness, perceived ease of use, and perceived playfulness. Social influence is divided into three aspects: subjective norms, visibility, and image.

Initially, many users used online communities for communication and information sharing (Park et al., 2014). With the continuous development of online communities, users have begun to use online communities to build, maintain, and expand the social networks they used to do in offline environments. (Bae, Seo, & Baek, 2010) claim that the importance of the online community is to use it strategically. This research measures the centrality of online communities, that is, their changes. It turns out that over time, as participants join the online community, an opinion leader appears and her/his power is changed.

As consumers increasingly communicate through different online channels, they have formed connections with other members (Djafarova & Rushworth, 2017). The traditional concept of community consciousness has been extended to virtual environments. As a virtual community consciousness, it describes the sense of belonging and attachment of individuals in virtual groups. Through research, Ellonen et al. (2013) found that Social online virtual

community positively reflects the brand that hosts the online community. Their research results show that the willingness of experienced consumers to buy and use products, as well as their willingness to recommend brands to his/her friends in the future, will be affected by the brand level.

Katzy and Sung (2002) point out that professionals exploit professional knowledge, which they create in communities. These communities are often distributed and usually meet during regular events to promote their community development and exchange their expertise. Virtual professional communities can use the Internet as a cooperation platform. Intuitively, the Internet is an ideal technical match for the organizational structure of professional community networks.

The integration of community and education extended the online learning community. Chapman, Ramondt, and Smiley (2005) claim that compared with traditional learning methods, an advantage of the online environment is that the personal learning experience is no longer isolated. Learning resources not only come from schools, but also from all areas of society. It allows for personalized courses instead of "resource hungry." This mode of work enables students to guide and support each other, and frees learning facilitators/mentors from handling small problems, allowing them to ask challenging questions, deepen and focus debates, and at the same time link theory with practice.

Luckin and Weatherby (2012) claim that online learning communities can be viewed as tools or resources that enable people to perform actions online together. People can conceptualize the multiplicity of resources inside and outside the online community as a set of environments that support learning. These situations may be more commonly referred to as learning (or learner) contexts.

Ganley and Lampe (2009) pointed out that in the Web 2.0 environment, online communities are the foundation of business models, and participants in online communities are often motivated and rewarded by abstract social capital concepts. The way the online community relationship network is constructed has an important impact on how to generate social capital, which is essential for attracting and managing the user base needed to maintain the website. Online communities rely on a strong core of very active and experienced users. Because social groups may have a tendency to become very tight knitting or clichés, these communities also need a steady stream of new members to refresh their interest in the site.

Luo et al. (2021) assert that online communities are an important place for people to share knowledge. The social and utilitarian rewards/welfare of individuals in the community first affect their sense of responsibility and then determine their knowledge-sharing behavior.

Tian and Guo (2021) claim that since most of the WeChat contacts are family members and relatives, close friends, colleagues, and real-life acquaintances, users can reproduce a community of acquaintances online. The social etiquette of the online acquaintance community emphasizes face-to-face with others. Driven by technology, people in different relationships are treated differently. This approach led to the emergence of "Chinese Virtual Civilization".

Kang (2005) suggests that an important way for companies to manage Internet customer relationships is to establish, maintain and upgrade communities. Based on the community theory, this research develops an online community formation and maintenance model, and empirical analysis proves this point. The empirical test results show that emotional commitment is positively related to the willingness to revisit and participate in community activities. Normative commitments, sense of responsibility, rituals and traditions only have a positive impact on the willingness to revisit.

De Moor and Weigand (2007) claim that online communities, such as e-commerce platforms and research networks, are important tools for today's networked and globalized social cooperation. Due to the rapid changes in the needs of these communities and technological development, they are prone to extensive changes. However, the change process is often unsuccessful because of its complexity, cost, and ambiguity of dependencies and responsibilities.

After analyzing previous research, it can be concluded that even though there are some differences in the definition of an online community, their commonness is that they all pay attention to the group, network, and interaction of the online community. Based on this perspective, this dissertation defines the online community as a network space cluster based on the same interests and communication of some groups to meet their demands.

2.3.3 Classification of online communities

Lazar and Preece (1998) suggest that the main characteristics of online communities are the attributes of online communities, supporting software, the relationship with physical communities, and the concept of boundary sociology. These different classification models provide different perspectives and new insights for the purpose, structure and needs of online communities.

Fernback (2007) classifies website communities based on whether the website is profitable. Based on this standard, online communities can be divided into two types: store and forum types. The store is based on the purpose of profit, while the forum has no purpose of profit. This

classification standard has been recognized and used for reference by many scholars (Kozinets et al., 2010). For example, Kaur et al. (2018) highlight that companies can positively influence user behavior by creating online social media brand communities. Research has found that user participation in online social media brand communities will affect consumers' buying and word-of-mouth behavior. In addition, online social media brand communities can help generate brand loyalty and brand trust among consumers.

Armstrong and Hagel (2000) divide online communities according to the needs of community members. The details are as follows: first, trading community, which is based on information sharing of products and services; second, fantasy community; third, the community of interest. Many community members have established a strong sense of trust in the online community. Because of their common interests and values, there will be a tacit understanding and trust between them. Once meeting the members of this community, they will spontaneously form trust, which reflects the image value of the online community to a certain extent; fourthly, relationship community. The main goal of members participating in the community is to communicate with other members in detail, which can facilitate the handling of various product problems and help members to get more product information, which can reflect the information value of the online community. At this stage, some community members use this community to carry out social interaction, and use this platform to carry out communication, and even extend online activities to offline, building a more effective social platform for members, fully reflecting its social value.

Schubert and Ginsburg (2000) mainly analyze the online community from two aspects. According to these authors, the starting point of online communities' formation is based on the common interests of people, and the contents and types of communities show noticeable differences. Moreover, they consider that online communities exist as network communities. Therefore, community users can use various media forms to carry out information dissemination and interaction to achieve better communication purposes.

Jones and Rafaeli (2000) provide a scheme for classifying virtual communities based on usage. This classification groups virtual communities as meeting one of four basic needs: interest, relationship, fantasy, or transaction. Transaction-based communities can be subdivided into business-to-business virtual communities and customer-centric virtual communities. A community focused on business-to-business transactions includes different types, including official vertical industry accounts, official geographical accounts, official functional accounts, and official business-type accounts. Customer-centric virtual communities can be subdivided into geographic, demographic, or topic types.

Through their research, Dholakia et al. (2009) classify online communities into two categories: network-based communities and small group-based communities. The former is based on a structured and dynamic relationship network. The participants' concerns are more consistent, but the overall relationship is relatively loose; the latter is composed of individuals with a close relationship who maintain the current social connection for the common goal.

According to the online community's timeliness, Ridings, Gefen, and Arinze (2002) divide online communities into synchronous and asynchronous communities. The latter refers to the online game board and bulletin board. Using existing measures to evaluate two aspects of trust (ability and good deeds / integrity), the results show a downstream impact on members' willingness to provide information and obtain information through the virtual community. Indicates to give. These two aspects of trust are augmented by recognizing reactions in the virtual community, general trust trends, and the belief that others reveal personal information.

Online community participation mainly includes two aspects: first, mechanical interaction. It refers to the interaction between members and the website, including browsing the web page and collecting information; second, personnel interaction. It refers to the interaction between members of an online community, such as sharing experiences through websites and establishing social relations through mutual exchange.

Kavanaugh et al. (2005) divide interactions in online communities into formal and informal. In a highly networked community, people interacting online usually get to know each other in a face-to-face environment, or, if they have not yet met, they expect to meet face-to-face in the future. For example, most online group interactions occur within existing formal or informal groups.

Hall (2019) proposed that online community participation behavior includes two aspects: interactive and non-interactive behavior. The former refers to members' active participation in the community discussion and making a message reply; the latter is similar to "diving" and seldom speaks in the community. The interactive behavior of the community can make participants very excited to read text or play games. They said that the interactive behavior brings fun and transformative experience to reading. Reading as an isolated practical experience is transformed into a game, thus promoting participants enthusiasm of the participants.

Fletcher, Greenhill, and Campbell (2006) regard the network group as a social phenomenon and begins to study the group in this way. There is no assessment of whether Internet groups are "good" or "bad" for society. Actual investigations of the community revealed that the use of meaningful and often aggressive pseudonyms, joined with open and belligerent dialogue, is even more obvious that there is a lack of general consensus and that conflict is the product of

instability and power relations. For the participants of this group, it is a core aspect of their daily lives.

Madupu and Cooley (2010) drew the following view by analyzing the virtual branding community. According to the participation degree of online community members, it mainly includes browsing and high interactive behavior. The first type refers to members actively collecting relevant information according to their own practical needs, which is more for personal interests; the second type is not only for personal interests but also through website replies and other forms of participation.

Wang and Fesenmaier (2004)'s research focused on the dimension of participation behavior. They proposed that community participation behavior can be divided into general participation behavior and positive contribution behavior. The former refers to the collection of basic information and other aspects of online community members; the latter mainly refers to the active sharing of experience and other service behaviors.

Tu and Corry (2001) divide online communities into four categories: online self, self-presentation, social existence and social interaction. The community is formed by active communication and social interaction. Social interaction is a kind of performance. Therefore, the formation of an interactive community is based on communication. Online social performance plays a key role in online communication and interaction. The construction of an online community first requires "self" to manage/project "self-presentation", using the media for "communication", and then perceiving "social existence" and enhancing "social interaction".

Anderson (2004) divides the main functions of the online learning community into two parts. The primary function of online communities is to share knowledge, and the secondary function is to promote the sense of community perceived by students.

Park and McMillan (2017) classify the information motives of different groups of people in the community. Some people use the Internet to find friends who have something in common, and others participate in the community for business purposes. In order to better understand why people join the online brand community, the study comparatively analyzed South Korean Automobile Online Brand Communities (KAOBC) and American Automobile Online Brand Communities (AAOBC). The research results show that KAOBC members tend to have a stronger social network, business and communication motivations than AAOBC members. As the main motivation, information seeking is the strongest motivation for members of the KAOBC and AAOBC. They have similar information motivations.

Ren et al. (2012) use theories in the field of social psychology to understand an important aspect of the success of online communities-how to develop member attachment. The study

examined three levels of attachment to online communities: identity-based attachment to a group in the community, bond-based attachment to individual members, and attachment to the larger community. They draw insights from the theory of group identity and interpersonal relationships and find that identity-based traits have a stronger effect than connection-based traits.

Tsai and Pai (2014) divide the basic needs of online community participants into three aspects: autonomy, relevance and ability. Among the three needs, autonomy has the greatest impact on cognitive social identity. In addition, relationship satisfaction eases the relationship between group member awareness and emotional commitment, which helps explain why newcomers with higher awareness of group members may be inconsistent with specific social groups.

Tausczik and Huang (2020) applied common psychology, sociology, and organization theories to explain the group dynamics of online knowledge communities. Group identity develops in the online community through a sense of common identity, and individuals tend to share information with people with similar geographic locations and similar levels of professional knowledge. In many different types of social networks, individuals tend to read the comments of the most popular contributors.

Kim, Park, and Jin (2008) develop the attributes of online communities according to Preece's social and usability framework (Kim, Park, & Jin, 2008). The three dimensions of online community attributes are purpose, personnel, and strategy, which are expressed as sociality. The two attribute dimensions are conversational, and social interaction. Navigation is expressed as usability. The structural model for testing the relationship between sociality and social benefits and usability and functional benefits is verified, and its effectiveness in predicting online community attribute dimensions and sociality/usability framework is proved.

Hunter and Stockdale (2010) present three general types of online communities, which are business-related, socially constructed, and volunteer-oriented online communities. These types are defined by the community model based on the value propositions of initiators and members. The value proposition of the members is strongly influenced by this model because the site sponsor builds convenience and opportunities for interaction. When online communities meet specific needs, people will participate and become members. Additional benefits increase the value of membership and encourage retention and enhanced interactivity.

Thompson (2011) points out how the term "online community" can be used in countless scenarios. One configuration is online university courses, where creating a community of learners is a key teaching strategy. The second aspect of these more "informal" groups is the

"company-hosted commercial online community" carefully cultivated by the company. In the third configuration, online communities are created by professional associations, workplaces, or other institutions that provide various community-building services.

Kim (2012) points out that people increasingly want to share information and knowledge, which will help each other. Therefore, his research aims to reveal the reasons for such knowledge-sharing behaviors among members of the online community of voluntary organizations. In addition to motivational factors such as sense of accomplishment and compensation, six major factors including the desire to show off, awareness, perceived benefits, happiness, challenge, and sense of belonging are included. Factors are the newly discovered power of knowledge-sharing behavior.

Active participation has been recognized as the key to the sustainable development of online communities. Therefore, Malinen (2015) focuses his research on the participants with the greatest financial value to community providers. Users can interact with online communities in different ways, which requires more diversified participation classification, rather than a simple active-passive dichotomy. Despite extensive research on this topic, the theoretical and conceptual framework for user participation has not yet been determined.

Pan (2020) divides third-party platforms into open source communities, open innovation communities, crowdsourcing platforms, and Q&A communities. This type of integrated community can provide a basis for possible and extensive value creation co-founders. However, it may also lack the specific technical resources of a specific company and be restricted by third-party platform management policies. The company's initiative on third-party platforms may be relatively poor.

Spaeth, von Krogh, and He (2015) point out that an open-source community is composed of people with common interests and hobbies, and publishes the source code of certain software on related platforms, while also providing a free learning and communication space for network members. Companies that share knowledge of the development process and source code can trigger reciprocal behavior among community members and attract volunteers who write and test programs, debug code, and enhance company services. The sponsoring company's knowledge sharing provides participants with software codes that can be directly used or improved. With additional documentation or technical specifications, volunteers can more easily write new and test existing programs.

Zhang et al. (2017) claim that companies use virtual communities to guide customers to participate in the innovation process. This virtual community can be called virtual innovation community (VIC). Unlike other types of virtual communities, VIC not only includes a bulletin

board system or message board but also include some innovation modules that allow customers to participate in product, service, and process innovation, or co-creation activities. Because the community has the basic characteristic of openness, innovative customers can not only communicate and share their knowledge with the company, but also discuss various issues with customers.

Crowdsourcing is defined as an action taken by a company or organization. Once an employee has performed a function, it is then outsourced to an undefined network of people in the form of an open call. Zhao and Zhu (2014) point out that crowdsourcing competitions can be implemented through a company-hosted community or third-party providers to form a crowdsourcing community. Since the essence of crowdsourcing is group wisdom and collective wisdom, the successful initialization and sustainable development of crowdsourcing communities depend to a large extent on public participation.

Hwang and Krackhardt (2020) point out that to promote the flow of knowledge, many companies have created internal online knowledge communities (also known as online Q&A communities, electronic practice networks, or online forums). Online knowledge communities have the exciting potential to mobilize knowledge in different locations and areas of knowledge. First, since spatial distance does not hinder interaction on the Internet, online knowledge communities can easily connect distant employees for knowledge sharing. Through online knowledge communities, companies can promote knowledge sharing in different spaces, because distance does not limit connection via the Internet.

Lee, Vogel, and Limayem (2003) claim that no classification of virtual communities can cover all aspects, nor can it apply to all situations. Each classification scheme is more suitable in some cases than in others. For example, the classification methods used when describing things related to technology and when dealing with social issues are most likely to be different.

2.3.4 User loyalty in the online community

With the continuous development of the Internet, the development of online communities has given birth to a certain extent. However, to maintain the sustainable development of online communities, the core is to continuously improve user loyalty (Jang et al., 2008). According to the above analysis (Evanschitzky et al., 2012), user loyalty includes behavior and attitude loyalty. This paper argues that user loyalty comprises not only the user's participation in a community but also whether it is recommended to others.

Smith and Wheeler (2002) proposed that the higher the perceived value of online community users is, the higher their loyalty will be. On this basis, users will repeat the purchase and actively share it with others. Also, they proposed that products, services, and business processes are effective factors in controlling the creation of experiences, and proposed five experiences that revolve around the process of creating an experience brand, the brand management model of customer experience is established. Furthermore, they maintained that experiences are emotional and personal in nature, so it's important to anticipate the needs and expectations of customers. Customer experience has evolved from an interesting concept to a successful business model. Experience is everything, and innovators in those industries have gone to great lengths to use customer experience as an effective way for companies to gain long term competitive advantage and a steady source of revenue. Accordingly, the development of experience economy makes experience marketing, a brand-new marketing mode that become another sharp weapon for many enterprises to win the competition. The deep research on experience and experience marketing has formed another hot topic in the field of service marketing. Consumers through the experience of branding, enhance social trust, thus forming a strong driving force of customer loyalty.

Sheng and Liu (2010) analyzed that the quality of e-service will prominently affect online community users' satisfaction and loyalty. The study is carried out under the background of the increasing popularity of e-commerce. Based on the existing research, the customer satisfaction and loyalty of online shopping are lower than those of offline. The authors focus on maintaining and improving online customer satisfaction and loyalty to address the challenges faced by online retailers. In other words, the purpose of this study is to explore the factors that affect customer satisfaction and loyalty. Finally, they found that efficiency and fulfillment had a positive effect on satisfaction, while fulfillment and privacy had a positive effect on loyalty. In addition, customer satisfaction has a positive effect on customer loyalty. They also think that service quality must be analyzed from different aspects to find that fulfillment has a significant impact on satisfaction and loyalty, and efficiency has a positive impact on satisfaction, and privacy has a positive impact on loyalty. Some of the results of this study are inconsistent with previous studies. Based on these findings, they provided explanations and potential future research directions.

Furthermore, under the background that the competition intensifies unceasingly, and the development pattern of the internet enterprise is also changing gradually. The traditional flow-centered development model is not enough. The community service model, which takes service users as the center, is providing new impetus for online enterprises. The community service

model emphasizes the impact of perceived satisfaction on user loyalty. It builds an ecosystem of traffic by establishing emotional links with users through the community, and serves existing users well. Therefore, it can effectively solve the problem of over-dependence on external flow. Based on the use and gratification theory and the current bias perspective theory, to explore online knowledge payment products, and the relationship among perceived quality, user satisfaction and willingness to pay. In addition, the authors studied the moderating role of social emotional embedded in the relationship between perceived satisfaction and continuous willingness to pay. It can be found that perceived information quality, perceived service quality and perceived system quality have a significant impact on perceived satisfaction, and perceived satisfaction has a significant impact on continuous willingness to pay. Similarly, social emotional embeddedness has a significant effect on the relationship between perceived satisfaction and continuous willingness to pay.

After analyzing the current e-commerce environment, Balabanis, Reynolds, and Simintiras (2006) proposed that customer satisfaction should be promoted to improve their loyalty. This study considers that there are seven kinds of switching barriers in the online environment, and examines the effects of customer satisfaction and store switching barriers on behavioral intention, and customer satisfaction is an important factor to determine customer behavior intention. The study reveals that perceived switching barriers are positively related to customer loyalty to e-commerce. Although the relationship between customer satisfaction and loyalty is not symmetrical, that is, a customer's satisfaction to the enterprise can't directly affect customer loyalty, there is no positive relationship between the two. Only in the case of great customer satisfaction may exist customer loyalty performance, the relationship between the two exists. Among them, customer value is a powerful predictor of customer loyalty. In other words, the full transparency of information, the free advance and retreat of enterprises and customers, the standardization of network technology and the nearly perfect competition of the market make e-commerce sites have to improve customer perceived value to maintain customer loyalty. In addition, they found that customer loyalty is influenced by a number of control variables such as gender, awareness of the site, the personal financial status of the customer, past online purchasing experience, and even emotions. They also believe that membership points, as a non-price promotion tool, can increase customer switching costs to lock in customers and thus enhance customer loyalty. Moreover, the repeated purchase behavior or intention of a consumer to a certain product is closely related to the satisfaction of the consumer with its products and services.

Kim et al. (2010) used an empirical research method to analyze the influencing factors of online community users' loyalty. Their analysis suggests that trust affects the motivation of information acquisition to a great extent, and its identity factors also affect the stimulus of information dissemination. Mobile e-commerce is the extension of e-commerce, transaction payment security is the internet environment potential risk factors. Contrary to the widely held view that electronic payment platforms can promote economic development and expand the scope of welfare and payment transactions, the study argued that electronic payments lack interpersonal or social connections, could pose a threat to the security of electronic payments. In addition, online shopping is the result of consumers' comprehensive evaluation of perceived usefulness and perceived ease of use. And the empirical results also show that technology protection and security statements can significantly affect consumers' perception of security, which in turn affects their decision-making on the use of e-payment.

Olsen, Wilcox, and Olsson (2005) mainly analyzed the user loyalty of transactional online communities and proposed that there are two factors influencing user loyalty. From the internal factors, it mainly refers to the user's satisfaction and consumption preferences; from the external factors, it mainly covers the website, products, purchase process, and other aspects. According to this study, consumer ambivalence is a kind of micro-level and changeable ambivalence, which does not involve fundamental contradiction and can change quickly under the stimulation of some marketing methods. High and low contradictory consumers have different attitudes. The higher the contradiction is, the lower the evaluation and purchase attitude is. Since the study of ambivalence in consumer behavior is still very rare, this study focuses on how ambivalence affects consumer satisfaction and loyalty. In addition, in order to accurately measure consumers' contradictory attitudes, after adopting the "Griffin" formula to measure consumers' contradictory attitudes, the subjective measurement method is used to measure consumers' contradictory attitudes, and then the results obtained from the two methods are compared and analyzed. Through empirical research, they found that consumers' attitude contradiction is negatively related to satisfaction, and the higher the attitude contradiction is, the lower the intention to buy again. At the same time, although there is a certain degree of intersection between ambivalence and satisfaction, ambivalence still has an independent and direct impact on brand loyalty. The study didn't find the moderating effect of attitudinal ambivalence on the relationship between satisfaction and brand loyalty, but still emphasizes the importance of introducing attitudinal ambivalence into the model of satisfaction and brand loyalty.

Chang and Wang (2011) analyzed and proposed that from the perspective of online community members, their perceived value and satisfaction with the community will affect their loyalty to a broader extent, and user loyalty will also react to hedonic behavior. There is a pronounced correlation between them. The purpose of the study was to explore the effects of e-service quality, perceived value and satisfaction on loyalty in an online shopping environment. The study viewed the purchase process as a series of stages and assumed that consumers would make a choice at each stage. For example, in the pre-purchase phase, online retailers should attract consumers with the quality of their electronic services. And, in the buying phase, online retailers should address emotional factors such as customer satisfaction. In addition, in the post-purchase stage, customer perceived value and other rational factors play an important role in the relationship between customer satisfaction and loyalty. By exploring the moderating effect of perceived value, they found a way to test the relationship between satisfaction and loyalty. The results showed that e-service quality and customer perceived value affect customer satisfaction and customer loyalty. In addition, it was found that customers with high perceived value were more likely to have a sense of satisfaction and loyalty.

Chen and Lin (2019) mainly analyze the loyalty of microblog users. Through the analysis, they proposed that perceived value not only affects user satisfaction but also affects user loyalty. This study explored social media marketing activities in the context of social media has become an important means of online marketing activities. Specifically, social identity, perceived value and satisfaction are the mediating mechanisms through which social media marketing influences sustained, participation and purchase intention. The research showed that social media marketing activities affect satisfaction through social identity and perceived value. And, social identity and perceived value affect satisfaction, which in turn affect sustained, participation and purchase intention. Based on this, related research can continue to dig into the overall performance of social media marketing in different national systems, to determine whether social media can successfully build online consumer brand awareness (i.e. brand preference, brand attachment, brand association and brand loyalty), leading to consumer commitment to purchase. Further, in light of the general phenomenon of social media platforms being integrated into marketing strategies, research can explore the impact of social media marketing activities on brand loyalty in this context, including brand trust and brand equity, it can also emphasize the role of trust and provide guidance for measuring the effectiveness of social media marketing. Or combined with S-O-R model, the research can explore the impact of social media marketing activities on consumer brand equity, using brand experience as a

mediator between social media marketing activities and consumer-based brand equity can be mediated by co-creation.

Bi (2019) suggested that customers' gratitude to online retailers comes only from their psychological commitment to the community, not from their sense of community satisfaction and trust. In addition, the gratitude of customers after receiving the benefits from enterprises can further enhance their behavioral loyalty and willingness to repeat purchases. Specifically, the study extracted the dimension of information fairness from interactive fairness, which should be composed of two dimensions: information fairness and interpersonal fairness. Interpersonal justice reflects whether the service personnel respect customers and show courtesy, and information justice reflects that the service personnel provide customers with adequate information, and give the necessary explanation. This is different from the three aspects of service fairness proposed in the previous studies, namely, communication service fairness, procedure service fairness and result service fairness. Based on this, at a time when mobile information systems have changed consumers' lifestyles and digital service patterns, research can explore the influence of consumers' knowledge level (e.g. consumer awareness), practicability and usability on the trial experience and the willingness to continue using of new technology products. In addition, customer citizenship behavior is very important for the sustainable customer-brand relationship, which can be achieved through the intermediary mechanism of psychological contract in the customer-brand relationship center from the perspective of psychological contract theory, the influence of psychological contract violation on customer citizenship behavior. Based on the demand-resource theory, researcher can also discuss the impact of new technological features on customer citizenship behavior, and explore the moderating effect of education level, as well as the relationship theory, can discuss how perceived relationship investment affects customer loyalty through perceived value intermediary, and the moderating role of customer relationship orientation in prior cognitive value relationship. Based on these studies, marketers can develop a long term relationships, targeting their efforts at relationship oriented consumers to improve relationship investment perceptions, thereby enhancing values and customer loyalty.

Casaló, Flavián, and Guinalú (2007) believed that enhancing and promoting users' willingness to trade online is a prerequisite for the realization of e-commerce in virtual communities, and active and interactive users will actively participate in the dissemination of information in virtual communities, and provide emotional support to other members. In other words, good interaction between community users can enhance their participation intention and enhance their self-worth perception. In addition, in the aspect of enhancing customer

satisfaction and loyalty, customer participation can be divided into active and passive participation to analyze the influence of customer online participation on brand loyalty. The study is based on an empirical study of several open source software communities, measuring customer engagement online by four metrics: incentives to stimulate community efforts, incentives to interact with other members of the community, the value of providing solutions to help other members of the community, and incentives to publish and respond in the community, to verify the significant positive effects of customer online participation on customer trust and brand loyalty. The nature, scope, meaning, conceptual boundaries and dimensions of consumer participation in online brand communities are complex, multifaceted, and dynamic, over time, and it can reflect the different intensity of different engagement states, and the differences in loyalty, satisfaction, empowerment, connection, emotional connection, trust and commitment of consumers. Future research could also explore new e-commerce models in social networking sites, such as social commerce. The research can explore the key factors influencing consumer trust (i.e. reputation, scale, information quality, transaction safety, communication, economic feasibility and word-of-mouth communication), namely the characteristics of consumer trust, and the effect of trust on trust performance (i.e. purchase and WOM intention). In addition, brand communities often overlap with social media, the latter being the ideal environment for building a brand community, research can also explore how the relationship between social media consumers and elements of the brand community (i.e. brand, product, company, and other consumers) affects brand trust.

Chen and Ku (2013) based on the two-path model and the virtual community environment, investigated the influence of central path and edge path on attitude change, and proposed that the quality of customer-community relationship positively affects customer loyalty to virtual community, which includes frequency of visits, average length of stay, and recommended frequency. Specifically, based on the two-path model, this study examined the loyalty of members to online communities, and finds that the quality of information and the credibility of sources significantly affect the quality of relationships between members and communities, and then significantly affect the loyalty of members to the online community. At the same time, the effect of the quality of the argument on the quality of the relationship, and the effect of the credibility of the source of the negative adjustment on the quality of the relationship, and the effect of the credibility of the source of the negative adjustment on the quality of the relationship.

Cheng, Wu, and Chen (2020) focused on the fact that online social networking sites have become the most popular activities for people to visit the Internet, and explored the potential factors of customer loyalty in online brand communities. Specifically, the research proposed a

framework that information quality, social capital demand, mood and perceived critical quality are expected to influence customer satisfaction and relationship commitment, and then lead to loyalty intention is constructed. The results showed that information integrity and social capital bridging demand are significant antecedents of brand community satisfaction and relationship commitment, while happiness and perceived critical quality are significant determinants of satisfaction. Moreover, credibility, maintenance of social capital and arousal have different effects in different communities.

Hamilton et al. (2017) believed that user loyalty is an important component of multi-community engagement. That is, when users choose to participate in a variety of different communities, they are usually loyal to one community and only focus on one community. Using a large dataset from Reddit's discussion community to discuss the role of loyalty in user community relationships, this study found that users loyal to the community liked it more than all other users, and the community will retain loyal users over time. Finally, the study found that user loyalty is a very consistent behavior in a wide range of community activities. In particular, loyal users are more likely to participate in deeper and less popular content, that is, they are more likely to play the role of the mastermind of a new project. The results also showed that community-level loyalty was associated with greater cohesiveness and was less likely to split into subgroups.

Liang et al. (2019) established a theoretical model based on network externality and expectation confirmation theory in order to explore the factors that promote user loyalty in the open design community and continuous innovation research, was, to reflect the decisive factors on the impact of user loyalty. A survey of 389 users of the Xiaomi business forum found that satisfaction played the most important role in explaining customer loyalty to the customer service center. The uncertainty of fan service is the most important factor that affects user satisfaction, and the scale of the perceived network has a negative effect on user loyalty of the open design community. Similarly, the effect of different factors on user loyalty varies with gender. Finally, the study reveals the antecedents of participant loyalty in the open design community and the motivation of individuals to participate in an open design. In addition, customer engagement and contributions are critical to the sustainable development of the virtual community platform, and the continued engagement of the virtual community, rather than the initial engagement, is more meaningful for the sustainable development of the virtual community. The research can explore the influence of community loyalty on continuous participation through users' satisfaction with psychological needs and virtual community identification. Given the increasingly fierce competition among service providers for user

loyalty, the research uses models to understand and predict user loyalty, for example, frequency and duration of use can reflect behavior loyalty.

Molinillo, Anaya-Sánchez, and Liebana-Cabanillas (2020) found that although customer engagement has received a the attention from scholars, a few studies have explored why consumers engage in social commerce and its profound impact on businesses. Based on this assumption, this paper discussed the influence of social support and community factors on customer participation and customer loyalty of social business websites. Specifically, this study proposed an empirical model to examine the effects of social support and community-driven, community identity and community trust (three community factors) on customer engagement, and the influence of participation degree on the four loyalty dimensions of repurchase intention (transactional) and co-creation intention, stickiness intention and positive e-commerce intention (non-transactional). A survey of 437 users of Facebook's social business website confirmed that customer engagement is a key predictor of four dimensions of customer loyalty. In addition, social support and two of the community identity and community trust had significant effects on participation. Similarly, Web 2.0-based applications and social media have transformed e-commerce into a new business model in which the role of customers has changed, that is, they are in a position to influence other buyers, and a unique position to guide purchasing decisions. Research can attempt to extract the important factors that drive customer engagement in social business, based on social support, social presentation theory, and information system models, to explore the responses of customer participation behavior to social interaction and motivational factors. Furthermore, the effects of customer participation behavior and social interaction on customer loyalty are identified and tested. Moreover, the online health community has gradually become an important way for users to obtain medical information services. Based on the theory of perceived value, a model of influencing factors on users' information service intention can be constructed, and further, explore the effect of gender as a moderator of the effect. According to the study by (Belanche, Casaló, & Guinalú, 2012), social support, achievement needs and perceived trust have significant positive effects on users' intention to use, and perceived risk has significant negative effects on users' intention to use.

Pai and Tsai (2011) believed that consumers tend to support products or services recommended by influencers and are emotionally attached to the communities associated with a particular online shopping context, thus bringing higher social and hedonic values. Based on the background of online shopping, this paper empirically tested the mediating role of community identity in the above-mentioned mechanism, that is, the participation of virtual community positively influences community identity. In addition, they explored the mediating

mechanism between virtual community participation and brand loyalty, and find that virtual community participation can enhance consumer brand loyalty through social mechanisms (e.g. community identification) and psychological mechanisms (e.g. trust and satisfaction). Through the data analysis of the third-largest online retail stores, they found that the participation of virtual communities can enhance the loyalty intention of users, in which community identity and customer trust, and customer satisfaction act as intermediary variables. In other words, the interaction between users shapes the network community, and the network community, which exists as a virtual objective environment has an impact on individual network behavior. herefore, it can be concluded that the higher the degree of community involvement, the higher the level of community participation in public health emergencies. Moreover, this study taken Taiwan's tourism and food virtual community as the research context and considers that virtual community attributes, namely community's sociality (e.g. perceived member acceptance, perceived member involvement), hedonism (e.g. pleasure) and instrumentality (e.g. information quantity). The positive participation behavior of community members is influenced by the dual mediating mechanism of community members' satisfaction and identity. It also empirically analyzes the moderating effects of trust, satisfaction and community identity on virtual community participation and customer loyalty intention. The results show that virtual community participation can positively enhance customer loyalty intention through three moderating variables, and there is a certain relationship between the three moderating variables, that is, trust and satisfaction can promote community identity.

In addition, given the ease of transfer of Internet users, the stickiness of users of tourism websites is generally not high, with the tourism virtual community as the background, self-determination theory and consumer cognitive structure model can be used to explore the mechanism of users' loyalty to network users, and to explore the sense of belonging to virtual communities and the value of serving individuals. It can be found that the breadth of participation has an inverted "U" effect on user loyalty, and the sense of belonging has a significant moderating effect on the relationship between participation breadth, depth and loyalty. Although there is a correlation between social identity value and loyalty, there is no significant mediating effect between user participation and loyalty. Therefore, tourism enterprises can timely guide users to participate, strengthen the influence of users, and according to different types of users for fan marketing. Also, the research on user participation is very popular. It can discuss the impact of user participation on user loyalty from the perspective of community belonging and personal value of service. Specifically, based on personal value theory and basic psychological needs theory, to explore the relationship among

user participation, user loyalty, community belonging and service personal value. It can be found that both the breadth and depth of user participation have significant positive effects on user loyalty, and that social integration value and community belonging significantly mediate the relationship between user participation and loyalty, with social integration value playing the strongest mediating role, however, social identity value does not play a significant intermediary role.

Wu, Xiao, and Wu (2017) indicate it is important to assess the impact of user engagement on user loyalty. Based on a four-level model of consumer cognitive structure, this study investigated the relationship between participation and customer loyalty in an online travel community by semi-structured interviews and a questionnaire. The study found that engagement has an inverted U-shaped effect on loyalty. Based on this research logic, it is possible to dig deeper into the social media brand community, for example, where fear of missing out and product use affect consumer engagement, that, in turn, affects consumer loyalty in social media brand groups or explore the role of brand personality and consumer engagement in promoting consumer brand loyalty. For example, the moderating role that gender may play in the relationship between brand personality, loyalty, consumer engagement, and loyalty, and brand personality and consumer participation are predictors of consumer loyalty. The research is important for marketers because it can help them identify the factors that influence use loyalty and develop plans to increase it.

Yao, Tsai, and Fang (2015) used communication behavior theory to explore the impact of communication behavior on satisfaction and loyalty, that is, the impact of communication channels on team members' loyalty. Knowledge sharing among participants has become the key to attract and retain users in the virtual community. Knowledge sharing is a process in which individuals learn from each other and understand each other. During this process, individuals are not static knowledge senders or receivers. Social interaction in structural capital and trust in relational capital have a positive effect on the quality of knowledge sharing, but do not affect the quantity. The study found that knowledge sharing among members is the key to attracting and retaining community users, social capital is positively correlated with team learning and knowledge sharing, and positively correlated with social capital and knowledge sharing and loyalty of community members. Through a field survey of 222 virtual community members, it is found that there is a significant positive correlation between knowledge sharing and members' virtual community loyalty, the accumulation of social capital is positively related to knowledge sharing and team building within the community. Specifically, social capital is the relationship between people, existing in the structure of interpersonal relations, the better social capital, the

better the effect of knowledge exchange. The research reveals that one of the biggest challenges in developing online communities is how to increase the willingness of users to share knowledge with others.

Through a comprehensive analysis of the above-mentioned customer loyalty mechanism and consumption intention, it can be found that the factors that affect the consumer willingness of participating online community include loyalty, sense of belonging, cost of transformation, information utility, trust, service quality, material incentive, social value, image performance, sense of entertainment and so on. Among them, personal perception, group consciousness and interest demand are the comprehensive indexes that affect the consumer desire of online community users. According to these three indexes, online community users can be classified. Then, according to the characteristics of each type of user, this paper puts forward some suggestions for community users' management. Furthermore, it can mine that potential friend based on the similarity between users and attributes and make accurate friends recommendation to enhance user loyalty and online community activity, and improve the accuracy and efficiency of community information service, especially when the list of friends is always limited in length.

2.3.5 Online community attachment and belongingness

Blanchard and Markus (2004) explore the concept of virtual community's understanding of newsgroups, which is called "multi-sport newsgroups" (MSN). The research first proves that MSN does have a sense of virtual community. Next, the behavior process were described. These processes help MSN exchange support, identity creation and identification, and trust generation in the virtual community. Again, these processes are similar to non-virtual communities, but they are related to the challenges of electronic communication. Finally, this article considers the issue of how community awareness arises and discusses the impact on e-commerce.

Maloney-Krichmar and Preece (2005) report that reliable technology is more important than the advanced technology of this community: Although the community space provided by the software is not much different, the community development is strong: members report that participating in the community has a positive impact on their offline lives: strong Strong group support and reciprocity norms make externally driven governance unnecessary: tools used to assess group dynamics in face-to-face groups provide meaningful information about online group dynamics; community membership patterns and strong subgroups actively promote the community Stability and vitality.

Ren, Kraut, and Kiesler (2007) study two theories of group attachment and linked these theories to the design decisions of online communities. The common identity theory predicts the reasons and consequences of people's attachment to the entire group. The ordinary bond theory predicts the reasons and consequences of people being attached to a single group member. They reviewed the causes of common identities and common bonds, and showed how they can lead to different types of attachments and group outcomes.

Some studies (Ei Chew et al., 2011) Lee and Park (2019) have shown that using online social networks will reduce community participation, while other studies have found that online social networks may maintain or even increase community participation. Ei Chew et al. (2011) aim to clarify the conflicting findings, and in the process, it finds support for the displacement effect and the enhancement effect. The dual procedures show that simply reviewing the time spent on social networking sites does not fully understand the impact of Internet use on community participation. The nature of interaction and participants in online social networks also play an important role. For rural community leaders who are striving to achieve the long-term viability of their communities, the survey results show that efforts should be made to reduce the displacement impact of Internet use, while using popular Internet applications such as social networking sites to increase youth participation in their family communities.

Lee and Park (2019) focus on the user-generated content (UGC) community, and discuss the formation mechanism of community attachment from the perspective of the content capital and social capital of community members. In addition, this research also demonstrates the easing effect of membership duration on the formation mechanism of community attachment. Finally, this research shows that attachments formed by content and social capital may influence the decision to either continue to participate in the current UGC service site or move to another site.

Bae and Chung (2016) explore the characteristics of online game players. They used the technology acceptance model to explore the relationship between perceived ease of use, perceived usefulness, entertainment, and online game accessories. After empirical analysis, after joining online games, active participation and trial behavior have become post-behavior. In addition, the usefulness of online games has a positive impact on online game accessories, but only perceived enjoyment has a negative impact on online game accessories. Through this research, it is possible to identify online game players with online games. In addition, this article can provide guidance for the development and growth of online games.

Ren et al. (2012) use theories in the field of social psychology to understand an important aspect of the success of online communities-how to develop member attachment. The study

examined three levels of attachment to online communities: identity-based attachment to a group in the community, bond-based attachment to individual members, and attachment to the larger community. They draw insights from the theory of group identity and interpersonal relationships and find that identity-based traits have a stronger effect than connection-based traits.

Wu and Bernardi (2020) investigate how the community's attachment to online health communities (OHC) reduces the emotional distress of OHC users, thereby improving their emotional health. The results of the study found that OHC participants may experience reduced emotional distress when they have developed an attachment to the community. In turn, this attachment is positively related to reciprocal normative expectations and feelings of gratitude. However, some commonly used measures of community participation behavior, such as visit frequency and membership tenure, have little to do with community attachment or reducing emotional distress. This is one of the first studies on the predecessor of community attachment and the relationship between community attachment and emotional pain in the context of the Human Rights Commission.

2.3.6 Online community empowerment and emotional connection

The role of online community empowerment has received much attention in empirical studies, focusing on the empowerment of individuals in online community. For example, Petrič and Petrovčič (2014) propose that the empowerment opportunities of online communities need to consider the individual and collective empowerment dimensions because of the possible opposed relationship between them. In addition, empowerment theory, which is developed in community psychology, allows the psychological analysis of empowerment outcomes in online communities. Based on this, they introduce communicative interaction mechanisms to understand the congruence between individual and collective empowerment, and the results show that the social psychological understanding of empowerment processes in community psychology can be gained by considering the communication perspectives of these processes.

Petrovcic and Petric (2014) also investigated the of overlooked issue of user group psychological empowerment in online health communities. Specifically, this study explored the factors associated with the collective psychological empowerment of online community users, which is also an important feature of online community. Through the network investigation of the active participants in the forum, it is found that the factors theoretical model can explain the variability of collective authorization well. Among them, community sense, organization

involvement and perceived community participation contribute to the online healthy community's user collective empowerment. In addition, the frequency with which information is posted in health forum has no effect on collective empowerment. They suggest that to improve the collective empowerment of health community users, it is first necessary to build the quality of relationships among their members and to involve them in strategic decision-making in community, it also promotes the participation of the online health community in the broader social context, as user participation in the online community doesn't lead to a higher empowerment.

Johnston et al. (2013) explore how the participation of doctors and patients in online communities has a direct impact on information utility and social support, as well as an indirect impact on patient empowerment. Interviews with health community moderators and field surveys of community participants have found that community participation leads to increased information utility and social support, and the former also helps to shape community participants' perceptions of patient empowerment. In addition, the study suggests that owners of health communities must be able to ensure a high degree of participation by participants, allowing each one to access information utility, etc., while at the same time guarding against adverse environments. By identifying relevant communities and participating in information-sharing, health-care professionals can ensure that relevant and accurate information is disseminated to patients as they seek information about health status.

Francescato and Mebane (2015) focus on the context of online teaching, using three intervention approaches developed by community psychologists, through promoting contextual factors include individual, organizational, and community empowerment, to explore the efficacy of these three different intervention models in helping community students to master the required competencies. The results show that online collaborative learning not only effectively enhance students' professional competence, but also enhance their social capital and socio-political empowerment.

Li (2016) explores the development logic of the psychological empowerment framework from community psychology to social media contexts, dividing the individual level empowerment process into two parts: internal empowerment and interactive empowerment, to assess the relationship between active and passive social media use and psychological empowerment. Specifically, an online survey conducted on MTurk found that active use was positively correlated with both internal and interactive empowerment, while passive use was only weakly correlated with interactive empowerment.

Based on patient empowerment and community sense, Sharma and Khadka (2019) explored

the factors that influenced individuals' willingness to continue using online health support communities for chronic disease management, and filled gaps in existing research. Data collected by the chronic disease management online group, and analysis show that the type of support people seek from online social health support groups is mainly information support, instead of the usual emotional support, relationship support, and self-esteem support. In addition, patient empowerment and community sense are positively influencing the willingness to continue using. The research could help managers or webmaster design strategies to promote and disseminate chronic disease patients in online social health groups through action promotion and social support, as well as by creating a sense of community.

Delahunty, Verenikina, and Jones (2014) focus on interaction, community sense and identity in learning communities as three related social emotional dimensions, and on individual students in the community who learn together through asynchronous communication. In this unique learning environment, goal, interpersonal relationship, and emotion become equally important because of virtual attribute. In addition, the study reveals the consistent relationship between interaction and community sense, and explores identity as a rarely studied topic in online learning. It is widely recognized that interaction increases the potential for knowledge forming, and research has shown that this potential is enhanced when students are encouraged to participate in identity-embedded courses.

Iosub et al. (2014) suggest that emotions play a crucial role in both teamwork and online collaboration, by investigating the Wikipedia community to see how emotions and conversations differ according to status, gender, and communication networks with editors. It turns out that managers tend to maintain a neutral and impersonal tone, while regular editors tend to be more emotional and interpersonal. In addition, women's communication is more conducive to social belonging and emotional connection than men's, regardless of their status in the community, and female regular editors are more relationship-oriented. Finally, it is found that editors have emotional and linguistic homogeneity, that is, tend to interact with people with similar emotion styles. Therefore, the effects of the above factors should be considered when analyzing the success of online collaboration.

Escobar, Kommers, and Beldad (2014) explore the difference between successful and unsuccessful online communities, where success is measured by member engagement, and based on previous research that involved communities using narratives to maintain and guide member engagement, the purpose of this study was to assess whether narratives play an important role. An online survey tested three aspects of community sense, participatory culture, and community success. The results show that narratives play an important role in participation,

firstly, amplify the effect of each person's participation on shared values, and secondly, interpret pathway between satisfaction of needs and impact, as well as shared emotional connection and engagement.

Brodie et al. (2013) believe that there is a lack of theoretical basis and significance in the study of engagement in brand communities. Based on this, through the method of netnographic, this study explores the scope and nature of engagement, it also reveals the multidimensionality and dynamics of consumer engagement, and the different degrees and states of consumer engagement that may appear with the passage of time. In addition, the process of consumer engagement can also reflect the interaction experience, as well as the value co-creation among participants. And, high levels of loyalty, satisfaction, connection, empowerment, emotional connection, and commitment are often observed in enthusiastic or engaged consumers.

Fan and Lederman (2018) observed that online health communities have become a popular way for people to share health topics, and given that forum users usually share only their personal experiences, the recipients of the messages often lack professional medical knowledge, so that the correctness of the communication can't be guaranteed. Therefore, this study explores the mechanisms by which people trust and use information within the forum. The study found that forum content promoted cognitive and emotional trust, making users more receptive to suggestions, and that emotional trust was also strongly associated with relation closeness. The findings allow people to accept capital in the form of advice without having to prove trustworthiness. In the context of the online health community, the advisor should shoulder the responsibility of building trust, which is different from the traditional social capital theory that requires the receiver to build it.

Chung (2014) explores and reports patients' use of social network features that have been widely accepted by current online support groups. This paper investigates the relationship among user motivation, use feature and support results through an online survey of service organization users. The results show that users will selectively use different features according to their own needs, and acceptance of emotional and informational support is related to some use features. Specifically, users with a strong motivation to interact socially will connect with others through friendships, but those with a strong motivation to seek information will primarily use discussion boards. In addition, it was found that making friends and sharing stories helped meet the need for emotional support. By clarifying the characteristics of healthy online social networks, this study can help improve the ability of groups to meet user needs.

2.4 Community support research

2.4.1 Concept of community support

The concept of community support comes from the theory of social support (Wellman & Wortley, 1990). Community support means the behavior of providing help to vulnerable groups through various means under a specific social network. Generally speaking, this kind of support comes from outside the individual, only around the vulnerable groups.

Social support was first carried out around the individual's psychological behavior and his ability to adapt to society (Brissette, Scheier, & Carver, 2002). At that time, the scope and depth of relevant scholars' research on this aspect have been greatly expanded, so its connotation has also been greatly extended. By providing various resources to the vulnerable groups, it will help them to get out of the current predicament to a great extent. Therefore, it is based on social needs. Based on the scientific understanding of vulnerable groups, make the corresponding scientific judgment.

Community support is a concept based on social support (Lakey & Cohen, 2000). In China's political system, the community is a prime unit of society's existence. Although the community can't show the whole of society from various perspectives, the two are closely related (Zhao et al., 2012). In the process of sustainable and stable development of our society, the community has played an influential role. All kinds of problems in society can be found in the community examples and the corresponding analysis. In the process of urbanization, the community should adapt to the changes of the times and make corresponding changes in time. Under the current social development situation, the social functions that the community needs to undertake have been increased significantly. The community also began to become an important operation of urban grass-roots organizations.

Through the above analysis, community support means the behavior of providing help to vulnerable groups through various means under a particular social network. Generally speaking, this kind of support comes from outside the individual, only around the vulnerable groups. The main body of community support covers many aspects, such as individual, group, and governmental. Its object is mainly vulnerable groups (Nunkoo & Ramkissoon, 2012).

For the community support of family education, it is mainly set up to protect and educate children and provide the right family education environment for children as well as to help for delivering timely education for children and meet their growth needs. In particular, it can be pointed out that the original intention of community support for family education is not to

replace parents' educational rights for their children, let alone ignore the importance of family education. It is more effective to help families to actively and fully fulfill their educational obligations and provide a healthy and orderly growth environment for children (El Nokali, Bachman, & Votruba - Drzal, 2010).

2.4.2 Research on community support

Sociological Research on social support has a long history, and there are apparent differences in the views of various scholars on social support (Thoits, 2011). Berkman and Glass (2000) analyzed and studied from the perspective of social psychology and proposed that social support can be defined to a certain extent as individuals' ability to construct relevant psychological responses based on social connections and carry out social adaptation.

According to Bronfenbrenner's (2005) bio-ecological theory of human development, although general social environments set the stage for development, it is the proximal processes within the environment that are the primary mechanisms through which developmental outcomes are produced. Wang and Eccles (2012) proposed that social support can be equated with social support, meaning that all kinds of support from the outside world are obtained by individuals through society.

By combing the research conclusions of relevant scholars (Oppedal, Røysamb, & Sam, 2004; Thoits, 2011), this dissertation believes that social support is a kind of social behavior that provides free help to the members in various ways under the current social environment. By providing various resources to the vulnerable groups, it will help them to get out of the current predicament to a great extent.

Malecki and Elliott (1999)'s analysis proposed that social support generally covers the following three aspects: first, objective and practical support. For example, material help and other direct support can help vulnerable groups to solve the current difficulties; second, spiritual support. It refers to the experience of being supported or understood by individuals from their subjective emotions; thirdly, the utilization of social support by individuals. Although from an objective point of view, some vulnerable groups need to rely on others' support. But they are not willing to take the initiative to accept the help of their lover.

Paranjape and Kaslow (2010)'s research suggests that social support involves both inside and outside the family and spiritual and material support from a broader perspective. Social support refers to people's ability to provide physical, psychological and material assistance in times of distress. Moreover, from the perspective of social support, there is a kind of bi-

directionality, that is, everyone may be a person who helps others, or become a person who is helped by others. The act of seeking and receiving support is an adaptive response that reduces the adverse consequences of exposure to disease or stressors. Community residents with higher levels of social support are more likely to enjoy better health.

Shuiyuan and Desen (1987) propose that at present, there are obvious differences in the definitions of social support in academic circles. One is objective, practical or visible support, including material direct assistance and social networks. The other is subjective, experiential or emotional support, which refers to an individual's emotional experience or satisfaction with being respected, supported, and understood in society. Some scholars associate social support with social-psychological stimulation and physical and mental health and define it more connotatively and richly. At the same time, it is pointed out that social support is to a certain extent the interdependence between individuals or between individuals and organizations. It's based on relationships. Individual's social support is affected by personality and other factors, and the use of social support is also different. In addition, the authors summarize research methods that use both levels of macrocosm and microcosm to analyze social support and health status. At the macro level, the authors use sociological and Social epidemiology methods; at the micro-level, the authors use clinical or experimental methods.

After analyzing and studying from the perspective of social psychology, Shu et al. (2011) proposed that social support can be defined to a specific area as individuals' ability to adapt to society through the relevant psychological reactions constructed based on social connections. The author also finds that computer self-efficacy has a negative effect on technology stress, while technology dependence has a positive effect on technology stress. In addition, the author also points out the importance of the concepts of PC self-efficacy and technology dependence.

According to Thoits (2011)'s research, social support means that when someone pursues help or support from others, others can promptly give corresponding support. This kind of support is timely in place, which can meet the needs of individual living organizations in a timely manner and help them solve various existing problems. The authors identified seven possible mechanisms for social bonding and social support to promote and buffer physical health and emotional well-being: social influence/social comparison, social control, role-based purpose and meaning (things), self-esteem, and sense of control, sense of belonging and companionship and perceived availability of support. Research has shown that social support is critical to well-being, whether individuals face adversity or not, and that acceptance or perception of social support should be one of the key pathways from social bonds to health outcomes.

Gülaçtı (2010) proposed that social support is the subjective or objective influence of individuals in various social relations. Although perceived social support from family is an important predictor of subjective well-being, perceived social support from specific individuals and perceived social support from friends are not predictors of subjective well-being. When perceived social support is perceived as a situation, it affects the individual's feelings and may also have a positive impact on subjective well-being.

Antonucci (2001) puts forward that social support is essentially the help and support that individuals or organizations get from others in society.

Yang et al. (2017) note that perceived community support reflects members' views of how much the online community facilitates their communication, values their contributions, and cares about them. Current research conceptualizes perceived community support from three dimensions: perceived support for member communication perceived recognition of contribution and perceived freedom of expression. The perceived dimension of community support has different significant effects on members' community commitment. Trust positively mitigates the impact of the Sleeper's freedom of expression and commitment. Lurkers may value reciprocity norms more than perceived freedom of expression when participating in online communities.

Su, Huang, and Nejati (2019) point out that perceived justice improves the quality of life of residents through the mediation of community support and community identity. The three dimensions of perceived justice (procedural, distributive and interactive) are all significantly related to perceived community support. However, while procedural justice and interactive justice were found to have a positive impact on perceived community support, distributive justice did not have a significant impact on perceived community support. The author finds that perceived community support is an important mediator between perceived justice and residents' quality of life.

Khalid et al. (2019) point out that there is a significant relationship between community empowerment and tourism sustainable development, and community support is the intermediary variable of this relationship. The findings imply that a high degree of community empowerment enables communities to build successful sustainable tourism development through local people's support for tourism. In theory, the study helps to identify the idea that support for tourism by community members plays an important role in bridging the links from community empowerment to the maintenance of local tourism.

Hajli (2014) concludes that consumers share knowledge, information and experiences through social media, which enables consumers to use the social support (including information

and emotional support) they provide on the internet, become part of the enterprise value creation process. Research shows that social support has a positive effect on the quality of interpersonal relationship. This support can also have a significant impact on relationship quality. Relationship Quality is seen as the basis of the marketing literature and is important in shaping customer loyalty; this is influenced by social support. In fact, social support can increase commitment, trust, and satisfaction, thereby increasing customer loyalty.

Gottlieb and Bergen (2010) summarize the meaning of social support from three aspects: first, from the perspective of social interaction, the direction of social support is bidirectional, that is to say, everyone may be a person who helps others, and may also be helped by others; second, from the perspective of social behavior, social support can bring to the people who are cared for; third, from the standpoint of social resources, social support essentially depends on the construction of social relations, people's contact and resource exchange among community members.

Chiu et al. (2015) propose that social support is a mechanism that drives online support for community citizenship behavior. The mechanism first shifts the effect of online social support to self-efficacy, self-esteem and subjective well-being, and then influences citizenship behavior. The mediator between online social support and subjective well-being in virtual world should be the construction of personal perception of online activities. Social support plays a leading role in shaping subjective well-being. Social support is expressed through an interactive process of giving and receiving, so the concept of reciprocity is particularly relevant to the recipient's motivation and behavior in supportive communication.

Ye, Feng, and Choi (2015) quantitatively study knowledge contribution from the perspective of community support and leader support. Research shows that perceived community support and perceived leader support have a positive impact on users' knowledge contribution. Perceived community support is indeed different from perceived community leader support, and these support beliefs strongly influence individual knowledge contribution. In addition, the author determines the premise of perceived community support, that is, the realization of the specification and information required to support sharing.

Tang, Chi, and Dong (2017) suggest that engaging in social rather than cognitive activities is related to community awareness and its components. Social support includes positive support and negative pressure. Positive social support is related to the increase of community consciousness, while negative social support is the opposite. Positive social support can buffer social isolation and psychological stress related to the aging process and life changes. People

with high social support are healthier than those with low social support. Active support can facilitate social integration into a larger group or community.

Weiss et al. (2013) point out that social support is a complex concept with a range of interpersonal processes and community structures. The process of social support refers to the functional nature or quality of social relations and the interpersonal interaction of behavior and cognition, while the support structure refers to the structural features of individual social networks and the overall ties of communities. For health systems, the interaction between online and real-world social support should be emphasized when assessing online community social support, and from the patient-centered intervention to the community and social network empowerment of Informatics Intervention.

Zhu, Sun, and Chang (2016) recognize that social support is a multi-dimensional structure, namely emotional support, information support and physical support. Information and emotional support significantly influenced customer citizenship behavior (CCB) through customer satisfaction with the companies in the online brand community. The relationship between social support and CCB involves Customer satisfaction, and the information and emotional support of the company and other clients has a different impact on Customer satisfaction.

Lin et al. (2015) use a dual social support model to study online social support exchange, which has three sets of variables: social support, individual coping resources and willingness to provide support. The results suggest that problem-and emotional-centered support from others increases coping resources, which in turn are the primary drivers of support for others. The problem focus mechanism and the emotion focus mechanism exist at the same time, but the difference determines the willingness to provide support.

Herz (2015) points out that transnational relations play an important role in the social support of British immigrants. The influence of the transnational nature of the connection on the invisible support is increasing, but the influence on the visible dimension of the social support is decreasing. The provision of various aspects of social support is explained by the relationship aspects (strength of connections, frequency of contacts, normative background and transnationality), followed by the degree to which it depends on the structural characteristics of the individual communities of migrants (such as size).

Liu et al. (2020) find previous research has shown that social support plays a crucial role in helping individuals improve their health or treat psychological problems, the benefits of web-based social support come in two forms: information support and emotional support. Compared with traditional social networking sites, where social connections are driven by isomorphism,

the authors find that conversations between different types of users are more common because user heterogeneity can actually increase the effectiveness of knowledge sharing. In the process of forming a reply network, showing polarizing emotions leads to a greater chance of receiving a reply, and the majority of users who provide social support to such users are optimistic users.

Yan (2018) points out that while social support has long been recognized for its health-promoting benefits, social support does not always lead to good outcomes in this study. Social support providers and support recipients influence weight loss in different ways. Providing support is positively associated with weight loss progress, but gaining support may hinder the weight loss results of people with high self-efficacy in weight loss progress. In addition, matching the type of social support needed with the type of social support received also affects an individual's performance during weight loss. Social support mismatches may have a negative impact on weight loss.

Molinillo, Anaya-Sánchez, and Liebana-Cabanillas (2020) explore the impact of social support and community factors on customer engagement and customer loyalty to social networking sites. The results show that customer engagement is a key predictor of customer loyalty to social networks across four dimensions, one transactional (repurchase intention) and three non-transactional (co-creation intention, stickiness intention, and positive electronic word-of-mouth intention). In addition, the results show that social support and two community factors (community identity, community trust) significantly affect customer engagement.

Nunkoo and Ramkissoon (2012) use social exchange theory to examine residents' support for tourism, taking into account two core concepts of trust and power among participants. The results show that community support is determined by residents' trust in government actors and perceived benefits. Residents' perceived benefits and costs, and their level of power, in turn, predicted trust. The theoretical contribution of this study comes from the variables of trust and efficacy included in the model.

Herrero and Gracia (2007) note a relative lack of research on metrics to measure community support sources. The author has created a multi-dimensional measurement method for community support, which includes perceived community, support questionnaire and perceived community questionnaire. The results show that community integration, community participation and community use organization are reliable indicators of perceived community support infrastructure.

According to Herrero and Gracia (2007), community support can be described as: (a) thinking of oneself as part of the community (feeling of attachment, belonging or community), and (b) thinking of oneself as an active member of the community (participating and

participating in the community), and (c) consider community organizations as a potential source of support when needed. The author has created a multi-dimensional measure of community support, that is, perceived community questionnaire. The results show that community integration, community participation and community use organization are reliable indicators of perceived community support infrastructure.

Eastin and LaRose (2005) find that as the size of social networks increased, so did perceived social support. At the same time, online support activities increase the size of the online network as assumed, increasing the overall level of perceived social support, at least in support-oriented online discussion groups. Self-efficacy affects the outcome expectations, relative importance, online support activities, and social network size of internet-related behaviors.

Maier et al. (2015) find that as the number of messages and social connections embedded in social networking sites increases, users felt they are giving too much social support to other SNS users. Based on social support theory, the authors call this negative association with social network use “Social overload” and develop a potential variable to measure it. The theoretical antecedents and consequences of social overload are determined, and the social overload model is evaluated empirically. The results showed that the degree of use, the number of friends, the norms of subjective social support, and the type of relationship (online and offline friends) were the direct causes of social overload, while age had only indirect effects.

Frison and Eggermont (2016) study the relationship between perceived online social support and depression among different types of gender-specific Facebook users. The authors examine the mediating role of perceived online social support. In addition, the authors’ study found that only girls who used Facebook passively and boys who used it actively in public were negatively affected by Facebook use. Girls who actively use Facebook, both in public and private, benefit from the positive use of Facebook because they perceive that online social support can have a negative impact on girls’ depression.

Oh, Ozkaya, and LaRose (2014) reveal a positive correlation between the number of friends, support interactions, emotions, perceived social support, sense of community, and life satisfaction in SNS. The research significance of online social network and social support is discussed. The authors demonstrate that there is a significant relationship between social support and positive emotions in the real world and no significant relationship between social support and negative emotions. The positive emotions of online social network users were positively correlated with perceived friendship support, appraisal support and life satisfaction. The partner dimension of social support has direct and positive relationship with life satisfaction,

while evaluation and respect support have indirect influence on life satisfaction through community sense.

Nadeem et al. (2020) based on social support theory, relationship quality theory, value co-creation theory and marketing ethics literature, propose a theoretical model to explain the formation of consumer value co-creation intention. The results show that social support influences moral cognition, and then influences value co-creation. Ethical perceptions also affect consumer trust, satisfaction, and commitment to the sharing economy platform (Sep). However, trust and commitment do not affect the value of co-creative intent. Moreover, the authors' study is the first to demonstrate that social support is a prerequisite for co-creation of value. Moreover, the author also proves that social support is a multi-dimensional secondary structure composed of emotional support and information support.

Liu et al. (2020) based on the theory of organizational support, explore how perceived community support influences user interaction and value co-creation, and then influences user continuous participation. The results show that: firstly, community support has a positive effect on a health topic and general topic interaction. Secondly, these two types of interaction have significant positive effects on users' perceived function and social value, and general topic interaction also has a positive relationship with users' perceived emotional value. Moreover, perceived functional value can directly lead to continuous participation, while perceived social value indirectly promotes the intention of continuous participation through perceived emotional value. Finally, the study concluded that user-perceived social exclusion was a moderating factor and hypothesized that user-perceived higher levels of social exclusion would be more encouraged by community support.

Nambisan et al. (2016) confirm that social support experienced by patients in the online community may influence their perception of the quality of care provided by health care organizations. The results indicate that the social support and response provided by peer patients in the online patient community will influence patients' perceptions of the quality of health care organization services, even if the organization members themselves do not participate in the online discussion. The results of the impact in practice study suggest that the online patient community interactions offered by such health promotion organizations should not be ignored, as they can translate into patient perceptions of the quality of health promotion organizations' services.

Cole et al. (2017) find that the relationship between online social support and face-to-face social support is curved, so for people with low levels of face-to-face social support, social media is a less redundant source of social support, but for those who already have high levels

of face-to-face social support, it is a relatively redundant source. Second, both online and face-to-face social support were negatively correlated with depressive thoughts and emotions, and each showed an incremental advantage over the other. Finally, both online and real-world social support can improve the detrimental effects of victimization on depressive thoughts and emotions by supporting stress-buffering models and/or master-effect models.

2.5 Review of social capital research

2.5.1 Concept of social capital

The concept of social capital was first discussed by Hanifan (1916) about village school community centers and later enriched and developed by other scholars. However, the concept of social capital has experienced more than 100 years of development, so far there is no clear and unified definition. Different scholars from their respective research field and object of study provides a different definition of social capital.

The traditional concept of social capital roughly includes the following four definitions. The first is the theory of social structural factors. Coleman (1988) claims that social capital is defined according to its functions. It is not a separate entity, but with various forms of different entities. Social capital is both an element of the social structure and a facility for the individuals within it. Like other forms of capital, social capital is productive, and whether or not people have it determines whether or not they can achieve certain goals. The second is the theory of organizational characteristics. Robert (1993) believes that social capital refers to the characteristics of social organizations, such as trust and norms, which can improve the efficiency of society by promoting coordinated actions. The third is the ability theory. Portes (1995) is one of the representatives of the theory of ability. They believe that social capital refers to the ability of an individual to mobilize scarce resources in a network or a wider social structure. The fourth is the theory of network resources. Burt (1992) defined social capital as the friends, colleagues, and more general connections through which you get access to other forms of capital that determine the success or failure of your competition.

The Internet has given a new definition to social capital. With the rapid development of the Internet, information sharing, and exchange platform has been built for the public to a great extent (Lee et al., 2015). It is also because of the virtual nature of the Internet that a relatively stable virtual social network system will be formed among the public. In this way, the research scope of social capital theory has been greatly expanded and has received increasing attention.

The public established closer relationships through the Internet, and the study of social networks went deeper and deeper. Social capital theory also made more obvious progress (Pigg & Crank, 2004).

According to Hazleton and Kennan (2000), social capital can be divided into three dimensions: structure, relationship, and communication. First, the structural dimension is mainly from the users' perspective, where users will selectively participate in the community's activities. It depends on the role of users in the community and the familiarity and communication with other community members, which largely determines users' participation and enthusiasm in the later stage of community activities. Secondly, the relationship dimension. Users tend to follow the principle of trust, mutual benefit, and recognition, and keep communication with other users in the community. Under a good relationship with other users and an absolute value guarantee, users will selectively contribute themselves, help others in the community, and realize their value in mutual help. They will choose to trust the community under a good relationship with the community, decide to use the community, and be willing to spend time on it. Thirdly, the communication dimension. Based on the long-term and continuous interactive communication, individuals can build a mutual trust relationship, and with the gradual progress of communication, they form reciprocal rules and behaviors. This dimension dramatically affects the formation and acquisition of social capital.

Nahapiet and Ghoshal (1998) consider that social capital can be divided into three aspects: structure, cognition, and relationship capital. Firstly, structural capital mainly represents the relationship between online community members, which affects the access of community members to relevant resources to a certain extent. For the online community, if the members lack effective interaction, it will lead to their relationship is no longer close, members can not get the information they need the first time, and then affect the formation of capital; second, cognitive capital refers to the online community can be a variety of resources based on the shared values of community members, which to a certain extent represents the individual to the group The degree of cognition. By integrating all kinds of resources, community members can establish standard awareness, which improves community members' effective understanding of collective behavior, actively communicates with others, obtains more relevant information after effective communication, and establishes trust in the online community; thirdly, relationship capital. It is the relationship constructed by the online community members due to continuous communication over a long period. This perspective can objectively reflect whether the members have built a more stable and effective relationship, whether they have formed a close relationship.

In essence, social capital belongs to intangible capital, which plays a cardinal role in the whole social relationship. In the rapid development of the Internet environment, the public through the Internet to establish a closer relationship, social network research is also deepening, the social capital theory has more obvious progress (Pigg & Crank, 2004).

Based on the research of Nahapiet and Ghoshal (1998), this dissertation analyzes the influence of the sense of community formed by users in online communities on their community loyalty from three dimensions of social capital theory. Through combing the relevant theories, the connotation of the three dimensions of the social capital theory is summarized as follows:

(1) Structural capital

Members of the community have access to a certain extent in the community to access its resources. For the online community, if the members lack effective interaction, it will lead to their relationship is no longer close. If the members cannot get the information they need for the first time, which will affect the formation of capital (Ellison, Steinfield, & Lampe, 2007).

(2) Cognitive capital

Cognitive capital refers to all kinds of resources that online communities can be based on the shared values of community members, which, to a certain extent, represents the degree of individual cognition of the group. By integrating all kinds of resources, community members can establish common cognition, which improves the adequate understanding of community members' collective behavior. Through active communication with others, they can obtain more relevant information after effective communication and establish trust in the online community (Wasko & Faraj, 2000).

(3) Relationship capital

Relationship capital is the relationship established by online community members due to continuous communication over a long period. This panorama can objectively reflect whether the members have built a more stable and effective relationship and whether they have formed a close relationship (McKenna, Green, & Gleason, 2002).

2.5.2 Social capital theory

As social capital is an important sociological concept, scholars have paid much attention to its role in many social situations. For example, some scholars have focused on the effect of social capital on perceived stress in certain groups of people, such as the elderly (Simons et al., 2021). Some scholars have focused on the influence of social capital in the work environment (Shang & Sun, 2021; Singh et al., 2021; Sader et al., 2021).

It was identified online social capital as a potential risk factor related to adolescent Internet risk exposure. The researchers used teenagers psychological elasticity of social ecological framework to focus on the psychological pressure and the connection of social capital, for teenagers 13 to 17 U.S. conducted an online survey, found that network exposure, such as network harassment and sexual temptation) can enhance psychological stress, and high levels of social capital network did not relieve stress, but an enhanced regulatory role.

Through research on the social network, social capital and mental health of the elderly, Simons et al. (2021) found that the use of social networks has a significant positive impact on personal social capital and well-being. Specifically, they distributed questionnaires to 410 elderly people aged 50 to 93 in the Netherlands, and drew research conclusions through analysis of cross-sectional data.

Shang and Sun (2021) believed that the interaction between users' personal learning needs and the awareness of their social capital will positively impact their participation in enterprise social media. Compared with using public social media, employees' use of corporate social media will be more goal-oriented. According to task–technology fit model, if the capabilities of information technology match the goals of users, the user is more likely to use the technology to achieve the goals. According to uses and gratifications theory, employee uses social media to meet their personal learning needs, and learning needs are embodied in knowledge exploration and knowledge discovery. In addition, although personal learning ability is highly correlated with social capital, there is no previous literature to discuss the specific relationship between the two. Therefore, Shang and Sun (2021) collected 509 questionnaire data and tested the hypothesis through hierarchical regression and other methods to confirm the idea.

Singh et al. (2021) used social capital theory to investigate how multinational companies (EMs) in emerging markets use strategic resources to drive innovation performance. Specifically, the questionnaire survey data of 352 employees of multinational corporations was collected and analyzed by structural equation model. The analysis results revealed the mediating role of social capital in the influence of human resource management on knowledge sharing behavior.

Sader et al. (2021) explored the impact of relational and structural dimensions of social capital on work stress. Partial least squares analysis of data collected from 343 employees in mid-sized companies found that social support (the relational dimension) had a negative impact on perceived stress. Meanwhile, network effects do not have a direct and significant effect on stress, but can increase stress by negatively affecting social support. In addition, researchers

have found that bridge connections between colleagues can improve individual performance and decrease happiness.

In addition to the concept of social capital as a whole, many scholars use the three-dimensional structure of social capital to explain and evaluate many human behaviors. Bi (2015) proposed a method to measure users' social capital by using a three-dimensional structure in the microblog environment. Specifically, the social capital measurement model of Weibo blogger structure dimension is proposed based on the webpage weight algorithm; the social capital quantification model of Weibo blogger relationship dimension is proposed based on the posting, reposting, and comment behavior of Weibo users; based on the tags of Weibo users, self-introduction, microblogs and other text information to propose a quantitative model of cognitive capital of microblog bloggers. Finally, a structure-relation-cognition three-dimensional social capital measurement model is obtained, and it is believed that the social capital of Weibo bloggers is the weighted sum of the three dimensions of social capital.

Jiang et al. (2016) explored the factors affecting the loyalty of public welfare Weibo fans based on the theory of social capital. The research takes the loyalty of public welfare Weibo fans as dependent variable, and the social identity of fans has been added to the factor of social identity to construct a public welfare Weibo fan loyalty model. The reliability and validity of the questionnaire were analyzed using SPSS19.0, and the structural equation analysis was performed using AMOS21.0. The main research conclusions include: (1) The more social capital owned by the public welfare Weibo fans, the higher the satisfaction. Among them, relationship capital and cognitive capital have a positive and significant impact on satisfaction, but there is no such positive relationship between structural capital and satisfaction. (2) Satisfaction has a significant positive impact on loyalty. In other words, in the public welfare microblog community, the satisfaction of fans is still an important factor influencing their loyalty. (3) Social identification has a positive and significant impact on satisfaction. In other words, the more social recognition the fans get, the higher their satisfaction will be. (4) Social identity has a significant positive effect on fan loyalty, and empirical research shows that social identity not only directly affects fan loyalty, but also indirectly affects fan loyalty through satisfaction.

Xu and Santon (2018) found that relational capital, information value, emotional value and social value in social capital have a significant positive effect on the user stickiness of real estate online to offline (O2O) platforms. Relational capital uses perceived value as a part of the intermediary to influence users' willingness to continue to use and thus influence user viscosity. The trust, reciprocity and sense of community identity among real estate community platform

users can help platform users obtain more benefits and value. This value is not only intimacy (such as friendship, friendship), but also promoting the formation of norms between users, enhancing the sense of obligation and responsibility between each other, which creates a sense of spiritual dependence for users' continuous use, and effectively promotes the formation of user viscosity. Structural capital and cognitive capital use perceived value as a complete intermediary to influence users' willingness to continue to use and thus influence user viscosity. Structural capital and cognitive capital have no direct effect on perceived value, but structural capital has a significant positive impact on social value and cognitive capital on information and social value. Therefore, information value and emotional value are the "health factors" of user perception value. Obtaining information and emotional support are the main motivations of O2O platform users in the real estate community, but getting social support, such as satisfaction of self-esteem and respect, is the stickiness of users.

2.5.3 Social capital and online community participation

At the same time, a large number of scholars have also fully discussed the role of social capital in online communities (Brown, Broderick, & Lee, 2007; Chiu, Hsu, & Wang, 2006; Kobayashi, 2010; Ostrom & Ahn, 2003; Wellman et al., 2001; Wu & Liu, 2013; Zhou, 2011).

Wellman et al. (2001) mainly focused on the evaluation index system of the online community. Their research found that the online community's development can considerably help to improve the convenience of public life and improve the association between community members. At the same time, members will get more information in a short time, which reduces the time cost of searching for information. Based on this result, they proposed that social capital can profoundly promote the fruitful evaluation of social members' performance.

Ostrom and Ahn (2003) believed that, from an objective point of view, social capital can significantly improve the efficiency of the whole action. With the increase of trust among members, it also helps to reduce transaction costs and improve the overall performance of the online community.

Chiu, Hsu, and Wang (2006) further studied the knowledge sharing of online community members based on the research of relevant theories. The primary purpose of this paper is to analyze the interaction of various capital structures. Chiu, Hsu, and Wang (2006) put forward the following views: first, social interaction will significantly affect the sharing among members and play a positive role in promoting, but will not have an ample impact on the quality

of knowledge sharing. Secondly, whether community members have established common values or not is negatively related to the amount of knowledge sharing.

Brown, Broderick, and Lee (2007) analyzed the evaluation of community members and their previous purchase behavior from the angle of online word-of-mouth. After his analysis, they concluded that if community members have obvious similarities, such as the same hobbies and similar experiences, they will, to a certain extent, affect the community members' cognition and feelings of an exact brand.

Kobayashi (2010) proposed that from an objective point of view, the reason why online communities have significant advantages that lie in the value of social capital based on the Internet. Through further analysis, he realized the productive construction of various theories and concluded that to promote the formation of social capital under the Internet, it must rely on a variety of factors, including members' trust in the community, identity, rule awareness, and other aspects.

Zhou (2011), from the aspect of community theory, mainly analyzes whether mobile community users can actively participate in community behavior. Through the analysis, he figured out that many factors are affecting the participation of mobile community users, including the trust and identity of users in the community, which are not only affected by some unilateral factors. Among these factors, users' trust in the community will have a potent impact on their subsequent behavior.

Wu and Liu (2013) researched how social capital will affect knowledge sharing behavior under the current situation. She believes that it is the social capital theory that promotes the construction of various knowledge-sharing models and further analyzes the relationship between them based on the survey of community network users.

Zhang (2015) believes that structural capital, cognitive capital, and relationship capital will all have a significant impact on the sense of virtual community, and user loyalty is also significantly affected by the sense of virtual community. Regarding structural capital, in a community, repeated interactions between members make members have a deeper understanding, more familiarity with each other, and a closer relationship, which promotes users to visit the community multiple times, thereby increasing their sense of identity with the community. At the same time, the higher the degree of community participation, the more users understand the content of the community, which will generate greater interest and invest more time and energy, and hope to have an impact on the community through their behavior, and ultimately form a sense of belonging. Regarding cognitive capital, consumers are more willing to interact with those who have common interests or experiences, and common language and

vision affect users' search behavior. It can be seen that people with similar experiences and opinions can make users perceive that they can become a member of the community, and in the process of member communication and interaction, the common language and experience are more likely to have an impact on others or the entire community. Users also will actively seek help from other members when they need help to meet their own needs. Regarding relational capital, when a user participates in a community, the higher the trust among members, the higher the credibility of the information or knowledge that the user has obtained, and the more willing to participate in the activities of the virtual community, and continue to satisfy their own needs. Need and hope to influence other members or be influenced by other members through their own behavior, and the repeated communication and interaction between members will eventually reach emotional approval.

Jiang (2016) found that structured capital, relational capital and cognitive capital all had a significant positive impact on the knowledge sharing attitude of WeChat group users, among which cognitive capital had the most significant impact, followed by relational capital and structural capital had the weakest impact. Social capital is divided into structural capital, relational capital and cognitive capital three dimensions. And relational capital includes four aspects: trust, reciprocity, norm, and identification. Therefore, the researcher assumes that six variables have a positive effect on the knowledge sharing attitude of WeChat group users, and uses the knowledge sharing attitude as an intermediary variable. It is assumed that social capital affects the knowledge-sharing willingness by influencing the knowledge-sharing attitude. Before using the questionnaire survey on a large scale, the research first adopted the in-depth interview method to conduct a small-scale test to modify and improve the questionnaire. After the questionnaires were distributed and recovered in a large area, this study first analyzed the reliability and validity of the questionnaires and question items, and then analyzed the above 6 variables, knowledge sharing attitudes and knowledge sharing willingness through correlation analysis and regression analysis, which proves that the six social capital variables of social connection, trust, reciprocity, norms, identity and common language all have a significant positive impact on the willingness of WeChat group users to share knowledge.

Jeong et al. (2021) conducted an in-depth study on how to accurately measure social capital in the context of online brand communities. Based on this background, empirical comparative studies are conducted on the researchers' six-dimensional model (Chiu, Hsu, & Wang, 2006), three-dimensional model (Lin & Lu, 2011) and two-dimensional model (Williams, 2006), and it is found that the three-dimensional model based on social interaction, trust and shared value is more suitable for social capital measurement in online brand communities.

2.6 Concluding remarks

Since the emergence of the concept of an online community (Harrison & Thomas, 2009), many researchers have carried out different research on this matter. Previous studies have analyzed the main characteristics and functions of online community (Seraj, 2012), category and value of online community (Armstrong & Hagel, 2000), main features of online community members (Füller, Matzler, & Hoppe, 2008), the reasons for participation (Nonnecke, Andrews, & Preece, 2006), users' behavior and relationship (Panzarasa, Opsahl, & Carley, 2009), and status of online community operation (Wilson, Zhou, & Starbird, 2018). From the view of online community operation, most researchers focus on the relationship between community members and the communities (Wu, Chen, & Chung, 2010). Therefore, many studies related to the relationship marketing theory (Füller, Matzler, & Hoppe, 2008). The community's relationship not only involves the community members' affirmation and commitment to the community but also involves the community members' loyalty to the community (Kumar & Nayak, 2018).

From the academic approach, most researchers believe that community loyalty will have a crucial impact on the existence and operation of communities (Laroche et al., 2012; Thompson & Sinha, 2008). Therefore, many researchers have carried out various studies on community loyalty based on performance dimensions and influencing factors of loyalty (Molinillo, Anaya-Sánchez, & Liebana-Cabanillas, 2020; Shafiee & Bazargan, 2018).

These studies not only effectively improve the theoretical content of consumer behavior and relationship marketing in the virtual environment but also further promote the development and improvement of the online community (Liang, Chen, & Wang, 2008; Nambisan & Baron, 2010).

With the continuous development of marketing, relationship marketing has become an influential branch of marketing, and academic research has gradually attached importance to the related content of relationship marketing. Therefore, researchers from different aspects of the online community pay attention to the content of the online community (Chung et al., 2010; Seraj, 2012).

With the evolution of online communities, the relationship between community members and brands is more and more significant. From the online community's construction and operation process, brand building and publicity belong to the main content. Therefore, the development of an online community will have an ample impact on the development of enterprises (Wilson, 2012). Influenced by the actual situation, many researchers began to analyze the efficacy of community on brand development, which not only involves the

influence of community on brand trust and brand image but also involves the effect of community on brand loyalty (Kamboj et al., 2018; Laroche et al., 2012; Luo, Zhang, & Liu, 2015).

From the stand of the online community, this paper focuses on the relationship between community members and the community. Therefore, based on community members' value in the community, this paper analyzes the impact of community value on loyalty and discusses the mediating role of user trust and satisfaction.

Through the in-depth analysis of the literature review, this paper defines social support, social capital, user trust and satisfaction, and community loyalty. And then analyzes and explains the dimensions of social support and social capital. Simultaneously, according to the previous research content, we can send a letter, ah, community value will continue to have an important impact on community identity and community loyalty, and community identity also has a driving effect on community loyalty. So, this paper takes these contents as the basis of the model construction. Therefore, this paper first analyzes the relevant literature, then defines the variables, and uses the empirical research method to carry out correlation test analysis for constructing the model, and finally draws the research conclusion.

Chapter 3: Research Model and Research Hypothesis

3.1 Research model development

The literature review provided an overview of past studies about the research of loyalty theory, community theory, social support, and social capital theory. The research on community loyalty has increased significantly, but research from the perspective of social support and social capital is an under-researched area. This dissertation addresses this gap and intends to study online communities from the panorama of social support and social capital. From the stand of social support, three dimensions are considered: information support, emotional support, and network management support. Social support is expected to influence the trust, satisfaction, and loyalty of users. From the viewpoint of social capital, it is divided into the dimensions structure, relationship, and cognitive. Social support is also expected to be related to satisfaction, trust and loyalty, and loyalty. Trust is expected to have a positive impact on satisfaction. Satisfaction is also likely to exert a positive influence on loyalty. Besides, we also assume that trust influences satisfaction. Consolidating together, we can say that social support and social are assumed to not only influence loyalty directly but also affect loyalty indirectly through trust and satisfaction. Trust and satisfaction mediate the relations between social support and social capital. The model answers the research questions about how social support and social capital affect loyalty. The model integrates the social support theory, social capital theory, trust theory, and loyalty theory. The proposed research model is illustrated in Figure 3.1.

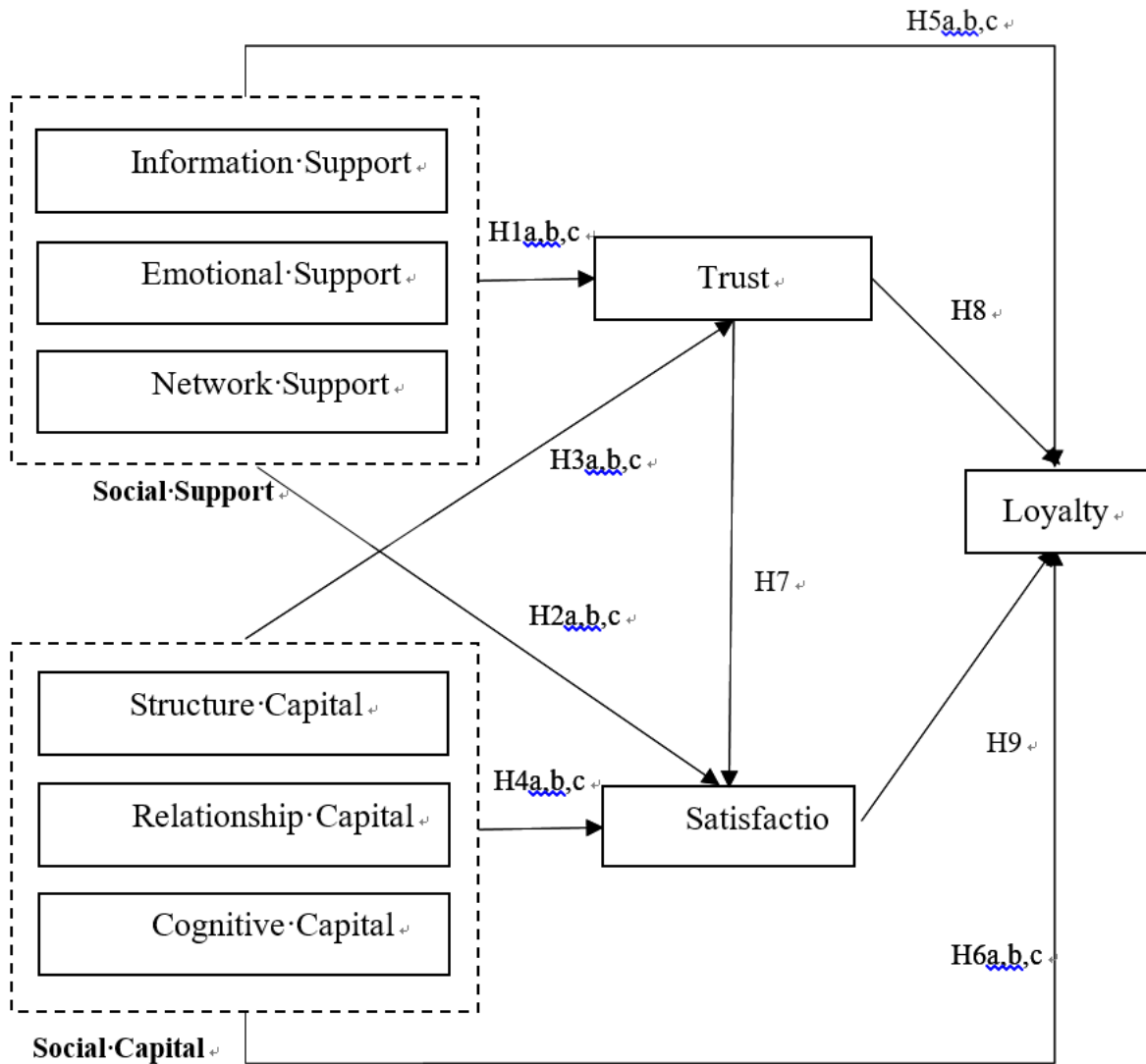


Figure 3.1 The research model

3.1.1 The formation of trust and satisfaction from the perspective of social support

It is found that different hardware devices will affect users' satisfaction in the online community (Chen et al., 2020). Generally, the satisfaction of users is directly proportional to the quality of the equipment. The speed of browsing the web page, the speed of getting information, and the stability of the network will affect the satisfaction degree of users using the online community and the degree of trust in the online community (Rubin, Fernandes, & Avgerinou, 2013).

In terms of software support, the page design and the convenience of the online community, the optimization of the whole interface, and the improvement of the function will affect the satisfaction and trust of users in the online community (Kim & Mrotek, 2016).

In terms of content support, accuracy, completeness, timeliness of information, and users' personal needs will affect users' satisfaction and trust in online communities. User feedback is proportional to the above conditions (Lin & Lee, 2006).

The emotional connection between the online community and users is also an essential factor in determining the degree of trust and satisfaction (Sanchez-Franco & Rondan-Cataluna, 2010). Users want to find a sense of belonging in the community, want to get help and reward, and consider the online community as a part of their life. Users who can find a sense of belonging and presence in this space tend to have high satisfaction and trust in the online community, hence, gaining high loyalty (Blanchard & Markus, 2002).

In the dimension of man-machine network management, the survey found that managers' satisfaction and trust in online communities are often higher than that of non-managers. Users can find a sense of existence and achievement in the community in management, and they can get help and get pleasure in the community (Xu & Li, 2015).

From the perspective of social support, it can be divided into three dimensions (Wang & Eccles, 2012): information support, emotional support, and human-computer network support. Information support can also be further divided into hardware support, software support, and content support. It can reflect the user's satisfaction and trust in a more comprehensive and humanized way, so the research model is established based on this level.

3.1.2 The formation of trust and satisfaction from the perspective of social capital

The perspective of social capital is divided into three dimensions: structural dimension, relational dimension, and cognitive dimension (Carey, Lawson, & Krause, 2011). The existing literature found that the structure dimensions suggest that, from the user's point of view to consider problems, the user can selectively participate in community activities. The dimension depends on the role of users in the community and familiarity with other members in the community and the communication situation, and it largely determines the user participation and how motivated a student was late in community activities.

The relationship dimension is divided into the relationship between users and other community users, and the relationship between users and the community (Hsu et al., 2007). Users tend to trust, reciprocity, the principle of identity, keep communication with other community users in the community. Under the good relationship with other users, under a certain value of guarantee, the user can selectively contribute and help others in the community, and feel the realization of its value in helping each other. This will be a good relationship with the community area, as the user choose to rely on the community, and choose to use the community, and is willing to take time.

On the cognitive dimension, each group often have a different cognitive level, in the online community (Dessart, Veloutsou, & Morgan-Thomas, 2016). If users can have the same cognitive level as other members, a similar social identity, a similar way of communication, similar views, users will generate the sense of belonging and are more willing to participate in community activities.

3.1.3 The formation of community loyalty from the perspective of social support and social capital

Community loyalty is the guarantee of good community operation (Bu, Jin, & Li, 2020). The higher the loyalty of users to the community, the more long-term development of the community. Users' loyalty of online community mainly comes from the users of the community's trust and satisfaction. The relationship mentioned above is mainly derived from the trust and satisfaction of social support and social capital support under the influence of these two perspectives.

The loyalty to the online community is mainly decided by the following aspects of the community and users: the improvement of the community and information completeness, convenience of software and hardware are affecting users' evaluation of online community (Yang et al., 2005). The users themselves will also have a certain impact on the online community rating due to the relationship between members of the community, their own preferences, self-worth, and contribution.

Based on the combination of the two perspectives, the online community loyalty evaluation is formed.

3.2 Trust, satisfaction, and loyalty

Trust and satisfaction determine community loyalty (Pai & Tsai, 2011). Online community loyalty is a dependent variable, and the user himself determines the changing degree of the independent variable. Therefore, online community loyalty is ultimately determined by the user's influence, which will be analyzed and discussed in detail below.

3.2.1 Definition of online community loyalty

Community is a relatively large-scale collection, which includes not only many different social groups but also many various social organizations. There are particular relationships between

these social groups and social organizations. Therefore, the community is a fundamental component of the social organism. In sociologists' research, there are several definitions of the concept of community (McMillan & Chavis, 1986). From the perspective of the meaning of community, although there are significant differences between the definitions of different sociologists, the views of the elements of the community are still consistent. They believe that the entities of a community include not only population, region, and infrastructure, but also culture and different organizations. Therefore, the community mainly refers to the community of social life composed of people in a specific region (Leibold et al., 2004).

The online community mainly refers to the Internet-based and can provide people with a platform for communication and exchange (Hammond, 2017). Exploiting the online community's resources, people can not only learn and communicate with each other but also get the information they need. The primary entities of the online community are as follows (Ridings, Gefen, & Arinze, 2002):

Electronic bulletin board (BBS)

It is the central image of the online community. Through the electronic bulletin board, members not only exchange the information effectively but also can promote the mutual communication of community members.

Chat room

The application of the chat room can facilitate the real-time communication of online members, and netizens with common topics or interests can also communicate with each other.

Discussion group

If the group members think that some topics need to be discussed, they can use the e-mail-based discussion group to carry out the corresponding discussion and communication, which can not only make the communication more convenient but also form a professional group in the community.

Online community marketing

Through the network, community marketing can make network marketing and traditional marketing produce an apparent difference. Usually, the form of online community marketing includes not only the community using its own website but also the community implementing marketing activity using other websites.

Online forum

Through the application of the forum, we not only understand other people's ideas but also provide help or seek help from others. Usually, the discussion topic of the forum has specific characteristics. If somebody has doubts about a question, you may go to the relevant forums.

Through the application of online community, the relationship between community and visitors can be effectively strengthened, which has a direct impact on the promotion of online sales (Chiu et al., 2018). Representative communities include the Renren community, China Ren community, Tianya community, and Sina community.

Customer loyalty mainly refers to the fact that the customer has fully affirmed the product or service and formed an individual preference to buy or use it repeatedly (Khan, 2013). Customer loyalty mainly refers to the customer's affirmation of the enterprise's products or services. Customer loyalty involves not only the loyalty of customer's emotion and behavior but also the loyalty of consciousness (Davis-Sramek, Mentzer, & Stank, 2008).

From the perspective of customer loyalty marketing theory, emotional loyalty, behavioral loyalty, and conscious loyalty are indispensable contents (Han, Yu, & Kim, 2019). Through the analysis of these aspects, we can effectively grasp the behavioral characteristics of customers and implement corresponding marketing methods according to the actual situation of customers, which will have a positive impact on the promotion of enterprise market competitiveness (Cheng, 2011).

Online community loyalty refers to the user's dependence, recognition, sense of responsibility, and contribution to a community (Brandtzæg & Heim, 2008). With the gradual increase of users' loyalty to the community, users will become more and more dependent on the community. They will feel some lacking, outdated, or bored when they leave the community. If they have a choice, they will choose the community with the highest loyalty. They unconsciously participate in community activities, eager to play the role of manager, hope to be able to get help or help others, want to become an important role in the community (Chen & Ku, 2013; Song et al., 2019).

User loyalty is the critical factor to determine the rapid development of a community (Laroche et al., 2012). "People-oriented, customer first" is the spirit of serving users in many online communities, and it is also the core competitiveness of the entire online community. It is a considerable way to improve users' online community loyalty by enhancing users' trust and satisfaction with the community and deepening their dependence on the community (Brandtzæg & Heim, 2008).

3.2.2 Theoretical sources of online community loyalty

3.2.2.1 Convenience of Internet and mobile devices

According to official statistics (CNNIC, 2020), in recent years, the scale of Internet users and the Internet penetration rate in rural areas of China have been increasing, and the number of Internet users can reflect the popularity of the Internet. According to statistics released by CNNIC report (CNNIC, 2020), as of June 2020, the number of Internet users in China was 940 million, 36.25 million more than that in March 2020, and the Internet penetration rate reached 67.0%, 2.5 percentage points higher than that in March 2020. As of June 2020, the number of mobile Internet users in China was 932 million, 35.46 million more than that in March 2020, and the proportion of Internet users using mobile phones was 99.2%, which was basically the same as that in March 2020. As of June 2020, the utilization rate of WeChat circle of friends was basically the same as that in March 2020. The utilization rates of QQ space and microblog were 41.6% and 40.4% respectively, which were 6% and 2.1% lower than those in March 2020. This shows that with the continuous development of mobile Internet, mobile social networking has been developed rapidly, and social media h

With the popularity of the Internet and the generation by generation updating of electronic products, the network has gradually penetrated into people's clothing, food, housing, and transportation (Ziegeldorf et al., 2014). Social entertainment has become an indispensable part of people's life. As a result, a variety of social spaces and social software emerge as the times require. People express their opinions in the online community, communicate with other members, and share their own experiences and experiences (Cheung & Lee, 2012). With the rapid speed of browsing the web, the gradual convenience of access to information, and the implicit and directness of solving problems, using mobile phones or other clients to study and work has become an important feature and inevitable trend of modern people's life (Litvin, Goldsmith, & Pan, 2018).

From the CNNIC 2020 survey data, we can see that more and more people participate in the network activities in our society, and the investment time is increasing. The network development has a long-term development trend. With the development of the emergence of various social communities, from the very beginning of the BBC forum, people began to express their ideas in a virtual community, to initiate a topic about an event, a movie, and a social dynamic. Users in the online community participate in different topics. People learn from each other in the exchange and discussion, find problems in communication, solve problems, and communicate day by day In order to build a familiar social network, users have to rely on,

whether for the communication of other members or the habitual use of the community platform, and ultimately establish loyalty to the online community (Casaló, Flavián, & Guinalú, 2007).

3.2.2.2 Community dependence

In the process of the continuous expansion of Internet applications, human social relations are no longer limited to the traditional blood relationship and geographical relationship, but gradually formed a virtual relationship (Carter, 2005). The emergence of social media makes the social interaction of the public get continuous expansion. Among them, network community mainly refers to the relationship group based on social network (Zaglia, 2013).

Community mainly refers to the group formed by people with common interests and needs. Influenced by the characteristics of the Internet itself, the community has developed rapidly. In modern people's life (except for a few people who do not contact the Internet), most people have their own small community on the Internet. This community may include their relatives and friends, or friends who have never known each other on the Internet. The community can likely include customers and businesses maintained by commercial interests.

From the concept of community, community members and the sense of belonging of the group have been effectively strengthened. So, it can be said that in the community, the relationship between members is very close. In 2002, QQ developed and provided group chat, the first online community. After that, with the continuous expansion of Internet applications, many network communities gradually appeared (Palattella et al., 2016). After the emergence of SNS network, the scale of network community has been not increased. With the emergence of wechat, instant messaging function makes communication and communication between community members more convenient. This has an important impact on the development of online communities.

By analyzing the relevant data, we can find that the top three platforms in the network community and the network platform frequently used by members of the community are WeChat group, QQ group and WeChat official account. Thus, with the continuous change of the environment, the platform that can support real-time communication is more recognized and used by community members (Motlagh, Bagaa, & Taleb, 2017). At present, WeChat is a typical representative of social media (Zhang et al., 2017).

In the continuous development of community platform, community platform includes not only the community based on the trust of acquaintances but also the discussion group based on weak relationship and the community based on interest. In these different groups, the relationship between members can not only make the unknown relationship but also make the

relationship of acquaintances. With the increase of interaction, the sense of belonging and integration of members will be improved. Through the application of decentralized Internet, the community also reflects the characteristics of decentralization (Wang et al., 2019).

For a long time, in the online community, users would trust and rely more on the community because of the connection of the community (Ridings, Gefen, & Arinze, 2002). The function of the community has changed from communication, discussion, and entertainment to maintaining various interpersonal relationships and expanding their own life circle and vision circle (Hampton, 2016). Therefore, users are more willing to include the community into their own life, that is, loyalty to the online community.

3.2.2.3 Community upgrading promotes convenience

"Technology changes life" is a very familiar advertising slogan. However, people are experiencing this changing life all the time. Science and technology have already penetrated people's lives and become an inseparable part (Birenboim & Shoval, 2016). It stimulates our nerves and subtly changes people. It is because of the progress of science and technology, people's requirements for life are generally improved, and the requirements for life tools are also gradually increasing, especially for electronic products (Buhalis & Law, 2008).

The first mobile phone was born in 1985. At that time, the word "mobile phone" did not exist. In 1987, mobile phones with a similar shape to current mobile phones appeared. In just over 20 years, mobile phones have been widely used in people's daily life. People need mobile phones to communicate with their relatives, office workers need mobile phones, and they need mobile phones to understand the things around them in real-time (Jarrahi & Thomson, 2017). It can be said that nowadays people are inseparable from mobile phones. The world has become smaller, but people's vision has become larger (Manovich, 2011).

3.3 Research hypothesis

This dissertation assumes that the formation mechanism of online community loyalty is related to social support, social capital, social trust, and community satisfaction. Social support includes information support (hardware support, software support, and content support), emotional support, man-machine network management support. Social capital comprises structural capital dimension, relational capital dimension, and cognitive capital dimension.

The value of social capital can be effectively improved by obtaining the resources in the social network, and the vital performance of social capital is the improvement of social trust.

Trust is not only related to people's ideas but also people's specific behavior. From the perspective of the eastern social environment, people will make the other party feel trust through their behavior. Then the other party will also show faith through their action to promote the improvement of mutual trust, which effectively reflects the main point of Oriental human society; from the perspective of the western social environment (Helliwell & Putnam, 1995), trust is mainly a manifestation of people's psychological characteristics, through trust, it is possible to make people's confidence and belief more effective. The emergence of the trust framework is mainly affected by institutional rules (Wang, Tseng, & Yen, 2014).

Although there are some differences in the connotation of trust in the eastern and western social environment, the impact of trust on social capital is consistent. In the process of people's communication, because of the existence of trust, the relationship between the two sides can be effectively managed, and their needs can be effectively met. Therefore, trust can make the relationship between people more stable and can make it more convenient to obtain the corresponding resources, which will have an important impact on the satisfaction of their own needs (Valenzuela, Park, & Kee, 2009).

Sociologist Putnam (Helliwell & Putnam, 1995; Putnam, 1995) pointed out that social capital not only involves the interests of individuals but also involves the interests of different groups. Therefore, social capital has the characteristics of cooperation, mutual help, and risk. Through reciprocal norms, the humanistic significance of social capital can be effectively reflected. In social capital theory, people need to pay attention to the maintenance and protection of harmonious interpersonal order in the process of obtaining resources from the network. Only when the interpersonal relationship is in a state of fairness, mutual benefit and conscious restraint can people's interests be effectively unified with others and society. Therefore, the implication of social capital can be effectively realized through reciprocal norms, which will have an important impact on people's access to social resources. Also, people's harmonious communication needs to be based on reciprocal norms.

The important performance of social capital is also reflected in social networks (Ellison, Steinfield, & Lampe, 2007). In the social network, the relationship between people is the basis of the formation of the network. People interact with each other through the existence of various relationships. Therefore, the communication between people needs to be based on the social network, and the social network plays a supporting role in the production and utilization of social capital. Also, through the social network, people's potential ability can be effectively mined. Whether it is all kinds of resources, cooperation between people, and participation in

activities, all need to be based on the social network. Taking into account the in-depth literature review, this dissertation propose the following 21 hypotheses.

3.3.1 Social support and user trust

With the development of ICT and social media technology, scholars have paid substantial attention to the influence of social support in online communities. Social support is about people perception for those who are being responsible and cared for a problem that occurs. Many disciplines such as psychology, sociology, management, and health research have carried out social support research. According to the context of this study, Social support is defined as individual action when received information from the online communities. In this study, I classify the social support into three categories, that is, emotional support, informational support, and interpersonal network management support. social support is important in the online environments as it affects consumers' confidence and trusts towards information statement (Makmor, Alam, & Aziz, 2018). The existing literature has provideid some evidence to support this claim. For example, Bai, Yao, and Dou (2015), Makmor, Alam, and Aziz (2018), and Reyhav and Weisberg (2010) claims that social support can influence an individual's trust. Also, consumers will become confident and trust when social support exists, this is because they believed someone's support that has the experiences (Makmor, Alam, & Aziz, 2018). Taken together, this dissertation hypothesize that Social support is positively associated with user's trust. Specifically, we hypothesize:

H1a: Community information support is positively associated with user trust

H1b: Community emotional support is positively associated with user trust

H1c: Social network management support is positively associated with user trust user trust

3.3.2 Social support and customer satisfaction

The current literature suggests that social support is a context-specific construct (Trepte, Dienlin, & Reinecke, 2015). The online community is a critical context in which social support may emerge. The social support of others in the online community has created a good mood for members of the community. Social support can help individuals overcome negative emotions when customers have negative feelings about a product or service, such as product injuries and service failures. The theory of mood congruent (Gardner, 1985) illuminates that good mood can improve customer satisfaction, while relieving bad mood can reduce customer dissatisfaction. Previous investigations also have shown that social support positively affects an individual's

satisfaction in various contexts. For example, Zhao, Wang, and Kong (2014) found that people who perceive more social support from others generated a high level of satisfaction. Chiu et al. (2015) contended that when an online community member receives social support from other members, s/he experiences a high level of satisfaction with the online community. Zhu, Sun, and Chang (2016) reported that social support has a positive impact on customer satisfaction behavior in online brand communities. Based on the above argument and considering that social support includes the dimension of informational, emotional support, and online community interpersonal network management support, this dissertation propose the following three hypotheses:

H2a: Online community information support is positively associated with user satisfaction

H2b: Online community emotional support is positively associated with user satisfaction

H2c: Online community interpersonal network management support is positively associated with user satisfaction

3.3.3 Social capital and user trust

Most researchers regard user trust as associated with social capital. Some researchers consider trust to be an antecedent of social capital, other researchers consider trust as an element and still others consider trust as an outcome of social capital (Glanville & Bienenstock, 2009). In the present study, we focused on the the positive association between social capital and user trust which has been validated by existing studies. For instance, Lin and Lu (2011) found that social capital promotes communication, identity, and trust while building close relationships among members. Similarly, in the context of online social networks, Grabner- Grabner-Kräuter and Bitter (2015) revealed that trust can also be viewed as a consequence of social capital. When useful information is exchanged successfully, trust follows. Moreover, previous studies also found that the less social capital community users receive from online communities, the less trust users have in online community. For example, Ellison, Steinfield, and Lampe (2007) reported that when social capital declines, community members experience more distrust among themselves. Mou and Lin (2017) revealed that those who feel themselves receiving less social capital from the online community also have less trust in the information shared in online community. Therefore, it is reasonable to expect that social capital will positively influence user trust in online community. Considering that social capital includes the dimension of structure capital, relationship capital and cognitive capital, accordingly, this dissertationhypothesize:

H3a: Online community structure capital is positively associated with user trust

H3b: Online community relationship capital is positively associated with user trust

H3c: Online community cognitive capital is positively associated with user trust

3.3.4 Social capital and customer satisfaction

It is expected that social capital will also have positive influences on user satisfaction in online community. Social capital has been recognized as a new perspective to examine user' satisfaction (Huang et al., 2017). Specifically, users are more satisfied with the community when they receive more social capital from the community. Indeed, the relationship between social capital and user satisfaction has been validated by previous research. For instance, Huang et al. (2017) reported that three dimensions of social capital (i.e., cognitive, structural and relational capital) have positive impacts on buyers' satisfaction in the C2C online shopping context. Sun et al. (2012) found that social capital will influence the value perception of buyers. In the context of IT service delivery, they revealed that social capital between users and IT units significantly predicted user satisfaction with IT services, particularly the cognitive and relational dimensions. In addition, Schiele et al. (2015) found that the abundant availability of structural, cognitive, and relational capital all have a positive effect on supplier satisfaction. Kim et al. (2016) reported a positive influence of the social capital on community member satisfaction in the context of club online communities. Following the extant studies, we believe that three social capital factors are all positively contribute to the user satisfaction. Thus, this dissertation propose:

H4a: Online community structure capital is positively associated with user satisfaction

H4b: Online community relationship capital is positively associated with user satisfaction

H4c: Online community cognitive capital is positively associated with user satisfaction

3.3.5 Social support and online community loyalty

As mentioned above, the social support users receive from other members of the online community provides users with positive cognitive information, which may positively affect their personal self-efficacy, which in turn is related to mental health and functioning. This argument is consistent with the opinion of Bandura (1993). Social support increases the the possibility of social interaction with other users which in turn increases the likelihood that an individual will feel satisfied with his or her decisions. A reliable and friendly information exchange and social interaction is likely to bring greater dedication to the online community

(Hsu, Chang, & Chen, 2012). Therefore, social support should have a significant positive impact on an individual's psychological state and consequently, customers feel involved and engaged (Aladwani, 2018). Previous studies have shown that social interaction increases perceived value, user trust, satisfaction and commitment (Liang et al., 2011). Aladwani (2018) report that the quality of social support significantly influences customer engagement in social commerce. Molinillo, Anaya-Sánchez, and Liebana-Cabanillas (2020) revealed that social support has an effect on customer engagement and subsequently on loyalty. Considering that social support includes the dimension of informational, emotional support, and online community interpersonal network management support, accordingly, this dissertation hypothesize:

H5a: Online community information support is positively associated with user community loyalty.

H5b: Online community emotional support is positively associated with loyalty.

H5c: Online community interpersonal network management support is positively associated with user community loyalty.

3.3.6 Social capital and online community loyalty

Structural capital formed by the social interaction has a salient influence on users' online community loyalty (Chen, Huang, & Davison, 2017). Social interaction ties can provide a cost-effective way to access a wider range of knowledge resources (Chiu, Hsu, & Wang, 2006). Frequent social interactions also imply the time and effort online community users invest in the relationship. Thus, users are likely to stay in the online community. Besides, relationship capital reflects the interpersonal relationship between buyers and sellers, including mutual trust, respect and reciprocity (Chen, Huang, & Davison, 2017). It is believed that trust leads to loyalty by reducing social complexity and perceived transaction risk (Pavlou, Liang, & Xue, 2007). Similarly, reciprocity emphasizes the mutual debt that individuals can benefit from social exchange. If one community member gains benefits from another member, she or he will repay the support of the other (Liang et al., 2011). From this perspective, relational capital is positively related to a user's loyalty to an online community. Finally, it is certain that cognitive capital plays a vital role in social relations. People who share a common cognition can better understand one another (Chen, Huang, & Davison, 2017; Chiu, Hsu, & Wang, 2006). Also, common language and understanding are also associated with a common view of an activity; as a result, people can more easily perceived the similarities in values and visions (Sun et al.,

2012). When social members feel that they belong to similar groups with the other community members, they may feel obliged to be loyal to the online community (Jones & Rafaeli, 2000). In a word, the common cognition among online community users can promote meaningful exchanges of ideas and knowledge, thereby increasing user loyalty. Some empirical studies have provided some evidence for the claims. For instance, Hsiao and Chiou (2012) confirms that an online game community user's social capital in an online gaming community affects his or her community loyalty through normative, relational, and utilitarian processes. Teng and Chen (2014) also report that online community social interaction includes social behavior, social need, and social capital, all of which have a positive impact on loyalty. Based on the above illustrations, this dissertation propose that:

H6a: Community structure capital is positively associated with user community loyalty

H6b: Community relationship capital is positively associated with user community loyalty

H6c: Community cognitive capital is positively associated with user community loyalty

3.3.7 User trust and online community satisfaction

When individuals interact electronically, they are cooperating in an uncertain situation with inherent risks. Regarding the relationship between trust and satisfaction, previous studies believed that trust was an important indicator of satisfaction (Tran & Vu, 2019). Trust can be defined as a type of expectation, reducing the user's perceived risk and establishing the user's positive expectations (Li et al., 2019). According to the expectation confirmation theory, the expectation confirmation can form the user's satisfaction which is a reflection of positive emotions. In this sense, the higher the trust, the better the user's overall evaluation and feelings, and thus the higher the identity and satisfaction of the online community. Such claims reflect the findings of Audrain-Pontevia and Menvielle (2018), they studied the role of trust in health communities, findings indicated trust had a positive effect on patient satisfaction and attitude toward the physician (Audrain-Pontevia & Menvielle, 2018). In addition, applied the expectation–confirmation model, Liang, Guo, and Zhang (2019) found users were more likely to exert more effort and be more satisfied with the firm-hosted online community, because trust promoted to discuss views and ideas openly. Consistent with extant research findings, we predict a positive relationship between trust and satisfaction, this dissertation proposes the following hypothesis:

H7: User Trust is positively associated with user online community satisfaction.

3.3.8 Satisfaction and online community loyalty

Online community loyalty in fact refers to having a positive attitude toward an online community, which induces supportive behavior from the members. Satisfaction refers to an evaluative (cognitive) judgement resulting from a comparison between expectations and experience (perceived performance) and can also be understood as the satisfaction obtained by comparing the original expectation with following use (Oliver, 1999). As a positive emotional state, it is a significant factor in predicting users' continued use behavior which is the external manifestation of loyalty. In the context of online community, satisfied user may form a positive evaluation, and actively participate activities in the community, such as interaction involvement, knowledge sharing. Therefore, it is easier for users to generate strong commitments and online community loyalty. Relevant studies have also confirmed that satisfaction is one of the factors promoting online community loyalty through empirical analysis. Jia and Prentice pointed loyalty were largely accounted by emotional responses. These emotional responses are manifested in customer satisfaction and delight (Ji & Prentice, 2021). Lin investigated the antecedents effecting user satisfaction and the consequences of user loyalty in virtual community, results revealed user satisfaction was a determinant of loyalty in virtual community (Lin, 2008). Similar, Limpasirisuwan and Donkwa (2017) constructed a model of members' loyalty to online brand communities, the results confirmed that the loyalty of members is affected by users' satisfaction. Based on the above study, this dissertation proposes the following hypothesis:

H8: Satisfaction is positively associated with user online community loyalty

3.3.9 User trust and online community loyalty

Trust in the online community is an important factor for establishing and maintaining a lasting user community relationship (Porter & Donthu, 2008). A high degree of trust in an online community will generate a favorable and positive attitude towards the community (Kamboj et al., 2018; Kim & Kim, 2017). Previous marketing management studies have shown that trust is one of the most important prerequisites for consumer loyalty and repurchase intention (Kim & Kim, 2017). In the brand management field, consumers tend to purchase the brand they trust because they value the reliability of the brand both cognitively and emotionally. In the current research context, it has been shown that if members feel connected to the community, they will be more inclined to trust the online community and the trust among members can help to increase the members' loyalty towards the community. On the other hand, trust affects the

willingness of individuals to exchange information and content with others (Yeh & Choi, 2011), which also can facilitate the user loyalty. Anaya-Sánchez et al. (2020) report that trust positively affects user loyalty including repurchase intention and positive word of mouth intention. Therefore, the following hypotheses are proposed:

H9: user trust is positively associated with online community loyalty

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Chapter 4: Methodology

4.1 Research context

By June 2020, China's Internet users reached 940 million, an increase of 36.25 million from March 2020, and the Internet penetration rate reached 67.0 percent. The online communities targeted in this thesis are the social media sites in China. China has 800 million social network users, with an increase of 58 million in 2012. The ten most popular social media sites in China in 2020 are WeChat, Sina Weibo, Tencent QQ, Tencent Video, Little Red Book, Douban, Zhihu, Meituan, Toutiao, and Douyin (CNNIC, 2020).

An online community is a community platform that users have chosen to get together. Users may find a sense of belonging among friends or colleagues with common interests, shared values, or blood ties on the platform. They can speak out their thoughts by participating in discussions, which ultimately pleases themselves.

Through the application of online community, the relationship between community and visitors can be effectively strengthened, which has a direct impact on the promotion of online sales. Representative communities in China include Renren community, China Ren community, Tianya community, Sina community, Tom community, Sohu Community, Netease community, Xici Hutong, BBS, QQ forum, Baidu Post Bar, WeChat group, Taobao community, and other online communities.

4.2 Research methods

This dissertation aims at studying the formation mechanism of online community loyalty, considering the social support and social capital perspectives. The present study used a quantitative online survey method. A structured questionnaire was distributed and collected online by a renowned marketing firm in China named Wenjuanxing. Data were collected from a convenience selected sample out of its sampling panel. As we mentioned above, there exists a wide range of online communities. However, two distinctive types of online brand communities, company-generated and consumer-generated brand communities, are widely recognized in research (Lee, Kim, & Kim, 2011). We thus gathered data from both groups to

gain a better understanding of the social capital and social support phenomenon in an online community.

Saunders, Lewis, and Thornhill (2008) listed two types of research methods: the quantitative and the qualitative methods. According to them, the quantitative research method is synonymous with any data collection technique or data analysis procedure that generates or uses numerical data, while in contrast, qualitative is associated with the data collection or data analysis procedure that produces or uses non-numerical data. Further, Creswell and Creswell (2017) identified another form of research method, namely the mixed method. This research method is concerned with the combination of both quantitative and qualitative research methods, which is useful to capture the best of both quantitative and qualitative approaches.

The researcher employed the use of the quantitative research method to obtain primary data with numerical orientation. The use of the quantitative research method ensures the study becomes independent of the researcher, and similar results can be obtained no matter who carries out the research. The method also useful in quantifiable data and is usually generalized to a larger population (Saunders, Lewis, & Thornhill, 2008). The employment of this method, therefore, helps to generate a database that is numerical and objective.

4.3 Research strategy

Having dealt with the research methods for the study, we will explain the strategy involved in this study. The research strategy described by Saunders, Lewis, and Thornhill (2008) is the plan of how the researcher goes about answering the research questions in a study. Saunders, Lewis, and Thornhill (2008) explained the research strategy to be the general orientation to social research. Research strategy provides the overall direction of the research, including the process by which the research is conducted. Also, Saunders, Lewis, and Thornhill (2008) listed the various research strategies which can be used in the course of a research study. These are experimentation, survey, case study, action research, grounded theory, ethnography, and archival research. Furthermore, Saunders, Lewis, and Thornhill (2008) indicated that the choice of a research strategy should be guided by the research questions, objectives, and the extent of existing knowledge, the amount of time and other resources available, and the researcher's philosophical underpinnings. They claim that research questions that predominantly take the form "what" tend to favor the survey research method. Accordingly, the survey research was considered suitable for this study as the research questions guiding the study takes the form of "how". Survey research is not only versatile, efficient, and generalizable as described by

Bryman and Bell (2007) but also easy to operate and can be conducted remotely via online, mail, and email. The choice of survey research for this study further enabled the researcher to collect a significant amount of data using a questionnaire from the relevant population. Hence, it gives enough space for easy explanation and understanding comparatively (Saunders, Lewis, & Thornhill, 2008).

4.4. Research population, sampling and questionnaires design

4.4.1 Research population and sampling

Having identified the research method and strategy needed for the study, we then focus on to find out the population of the study, sampling techniques through which the researcher can gather data and analyze. A sample is the segment of the population selected for research. Using a sample for this study is necessary as it is usually impossible for a researcher to collect or analyze all data of a population owing to time and money constraints as well as access.

The population is defined as a complete set of cases that share similar characteristics from which a sample is gathered. The emphasis is placed on the fact that the complete set of cases can represent organizations, individuals, and objects. The target population for this study is online community users in China. A convenience sampling procedure technique was employed by the researcher for this study. The convenience sampling technique is a non-probability sampling technique under which the selection of the sample is based on the researcher's judgment, which is the convenience sampling technique adopted by the researcher. As a result, the elements of the sample must meet the following specifications: The respondent must be a user of an online community such as WeChat, QQ, Zhihu, Mafengwo.cn, etc. This procedure leads us to get relevant data in line with the objectives of the study and will also enhance the reliability of the findings.

4.4.2 Questionnaires development

Questionnaires encompass a variety of instruments in which the subject responds to written questions to obtain reactions, beliefs, and attitudes. The researcher chooses or constructs a set of appropriate questions and asks the items to answer them, usually in a form that requests the subject to check the response. Most survey research uses questionnaires because of their advantages over other data collection methods.

A self-administered questionnaire is a data collection technique in which each respondent reads and answers the same set of questions in a predetermined order without an interviewer being present. Bryman and Bell (2007) enumerate the following advantages of self-administered questionnaires. According to them, this type of survey is cheap and can be conducted by a single researcher. Questionnaires can be sent to a wide geographical area and the respondent can complete the questionnaire at a convenient time. Anonymity is provided by questionnaires and interviewer bias is avoided. However, the disadvantages are that the response rate is often low and there is a lack of control over the conditions under which the questionnaire is completed. Moreover, some respondents may give incomplete answers. It is also not possible to observe the respondent's reactions to questions, physical characteristics, or the setting.

On a general note, the choice of designing a self-administered questionnaire or an interview is influenced by the importance of the respondents' answers not being distorted and the types of questions the researcher wishes to ask, as pointed out by Saunders, Lewis, and Thornhill (2008). In line with this, the researcher designed the questionnaire using the closed-ended format allowing the respondents the opportunity to answer questions using a Likert scale type. It will enable the respondents to answer the questions to a degree of their agreement. Such responses are easy to code, quantify, and analyze.

The validity of research is the extent to which data collection methods or methods accurately measure what they were intended to measure (Saunders, Lewis, & Thornhill, 2008). Research validity can be damaged as a result of poor research procedures and imprecise information testing, instrumentation, and maturation. To prevent this error, we design the questionnaire in a precise and concise manner so that the questions will not be misinterpreted. The questionnaire, together with a covering mail, was distributed to the respondents of the study via their emails using a google form application. The covering email is to explain the significance of the research to the respondents.

The questionnaire encompasses four sections. In the first section, we capture respondents' general information, including gender, age, education, and income. The second section sought to explore the usage situation of the online community. It is followed by the third section, which examines the feelings as regards the online community. The last part involves online community satisfaction and trust.

The degree to which a measure of a concept is stable is described as reliability. This is well elaborated by Saunders, Lewis, and Thornhill (2008), who explain reliability to be the extent where data collection techniques will yield consistent findings. Besides, similar observations

or conclusions will be reached by the researchers, or there is transparency in how sense was made from the data. To ensure consistency of this study, the author operated the data collection instruments to respondents with a similar professional and educational profile. This is believed to enhance the reliability of the study. To assure the measurement validity, we use the items, which were used to measure the constructs and adapted from scales. The scales were developed and tested in prior relevant studies, and slight wording changes were made to fit the current research context (see Appendix). Except for control variables, the constructs were assessed by a 7-point Likert scale with anchors of “strongly disagree” as 1 and “strongly agree” as 7.

All the items were developed and modified from the original measurement items to be appropriate with the present study. Because the original scale was in English, the author invited a skilled Chinese English bilingual translator to translate the original English scale into Chinese, and another bilingual translator was invited to translate the translated Chinese scale into English again. The translated version was cross-checked independently to ensure the accuracy of the translation. After many discussions, the scale was translated and submitted to a scholar in the field of information management and e-commerce for review. The final draft of the scale was completed after confirmation. See appendix 1 for the English version of the survey and appendix 2 for the Chinese version.

The authors performed a pre-test of the questionnaire. During the pre-test, a total of 60 questionnaires were distributed and 48 valid questionnaires were collected. The results showed that the validity and reliability of the sample questionnaire design met the requirements, and the acceptability also met the criteria. Finally, according to the interview results, some modifications were made to the expression and language of the original questionnaire, which conforms to the language habits of the interviewees and is easy to understand to improve the accuracy of data collection.

The final questionnaire was delivered through a famous questionnaire website. Specifically, this study uses the recruited sampling of a survey website named Wenquanxing.com who provides a crowdsourcing marketplace that makes it easier for individuals and businesses to outsource their survey processes and data analysis jobs to a distributed workforce, which can perform these tasks virtually. The sampling pool includes more than 3 million people, and the authority invited the potential respondents to join the survey tasks at random, which is rather like Amazon Mechanical Turk (MTurk). Therefore, the paid samples are representative. To encourage the respondents to participate in the completion of the questionnaire, we provided gifts worth RMB 30 to the respondents who completed the questionnaire. The data were collected from March 2019 to May 2019.

4.4.3 Questionnaire design

The final questionnaire used to collect data in this study is organized into five parts.

The first part asks respondents for personal information, including six questions. This part is helpful to describe the profile of the respondents as regards the following variables:

- gender (male, female);
- age group (less than 20 years old, 20-25, 26-30, 31-40, 41 years old or above);
- educational degree (Junior high school and below (9yrs), High school(position)/secondary school (12 yrs), Junior college (14 yrs), Undergraduate and Master degree and above(15 yrs));
- disposable income (500yuan and below; 501-1000yuan; 1001-1500yuan; 1501-2000yuan; 2001-2500yuan; 2501-3000yuan; 3001yuan and above);
- marital status (married; not married);
- internet age (less than 1 year; 1-2years; 3-4 years; 5-6years; 6 years and above).

The second part includes a total of 5 questions about the participation of the respondent in an online community. This part allows to describe the respondents according to the following variables and categories:

- Type of the virtual community (post-bar, blog, BBS class, transaction class, social, alumni record, game type, portal class, campus BBS class, others);
- The time you will be registered in this virtual community (less than 6 months; 6 months to 1 year; 1-2 years; 2-3 years; 3-4 years; more than 4 years);
- The average number of logins per week (1 time per week or less; 2 -3 times; 4 - 5 times; 6-7 times; 8-9 times; more than 9 times per week);
- The time you spend (2 hours and less; 3-5 hours; 6-8 hours; 9-11 hours; above 11 hours);
- The main purpose of participating in community activities (aimless browsing; participate in the discussion; initiate discussion; find information; play games; others).

The third part of the survey asks the respondents to evaluate their perceptions of participating in the online community concerning the following variables: social support (information support, emotional support, network support), social capital (structural, relationship, cognitive), and loyalty.

The following three items measure information support:

- The information provided by the online community is accurate;
- The information provided by the online community is complete;

- The information provided by the online community is up to date.

The fourth part measures online community satisfaction. The four items were assessed using a 7 Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree),

- The online community can offer some help;
- I am satisfied with the community content in the online community;
- I am happy with the positive atmosphere of the online community;
- I am satisfied with the overall atmosphere of the online community.

The fifth part is the online community trust, comprising a total of 3 questions measured with a 7-level Likert scale, anchored in 1 (strongly disagree) and 7 (strongly agree),

- I trust that the identity of the online community is confidential;
- I have confidence in the confidentiality of this online community data;
- I have faith in the process of using this online community.

Table 4.1 shows summarizes the main variables included in Part three, four, and five of the survey and the corresponding sources.

Table 4.1 Main variables and items

Dimensions	Variables	Number of items	Main references
Loyalty		4	Bobâlcă, Gătej, and Ciobanu (2012)
Satisfaction		4	Santa, MacDonald, and Ferrer (2019)
Trust		3	Santa, MacDonald, and Ferrer (2019)
Social support	Information support	3	Ko, Wang, and Xu (2013)
	Emotional support	5	Ko, Wang, and Xu (2013)
	Interpersonal support	5	Ko, Wang, and Xu (2013)
Social capital	Structure dimension	3	Lin and Lu (2011)
	Relations dimensions	3	Lin and Lu (2011)
	Cognitive dimension	2	Lin and Lu (2011)

4.5 Data analysis method

The author uses the structural equation model to verify the hypothesis proposed in this study and thus to investigate each variable's direct or indirect influence on the online community loyalty.

Structural equation modeling (SEM) has become a prominent tool for scholars. The structural equation model of latent variables consists of up to three sets of simultaneous equations, which are estimated in parallel: (1) endogenous variable measurement models (or

sub-models), (2) measurement models of exogenous variables, (3) structural models, all of which are simultaneously estimated. The SEM with a measurement model and a structural model is called an SEM with latent variables. There can be a structural model without any measurement model (SEM with observation variables) or a separated measurement model (confirmative factor analysis). Generally, SEM can have any number of endogenous and exogenous variables. This study will use a structural equation model based on partial least squares path modeling (PLS-PM) (Hair Jr et al., 2014). Because: (1) this study is essentially an exploratory study, rather than confirmatory research; (2) the sample size of this study is only 430; (3) many of the measurement variables in this study do not conform to normal distributions, so this dissertation cannot use a structural equation model based on the maximum likelihood estimate and covariance matrix.

Chapter 5: Results

5.1 Sample profile

5.1.1 Demographic profile

This section describes the sample profile (N=430), covering the respondents' gender, marital status, work background, educational level, region, and family income.

The 430 questionnaires in our analysis include 183 males (42%) and 247 females (58%). The number of questionnaires from married and unmarried respondents is 92 and 348, respectively. The two figures have a large difference because the people who frequently log in to blogs and Weibo (Chinese Twitter) are unmarried young people. Therefore, this deviation might be in accordance with the current user profile. Around 37.4% of the respondents hold a master's degree. Most of the users of the online community have an educational background. Online communities are mainly used by young people with relatively higher education and college students (graduate students). Nearly one-fifth of the 430 respondents were students (84 students, accounting for 19.53%), and the rest were non-students. This distribution is also consistent with the income of the respondents.

Respondents with an income between 1501-2000 RMB account for 22% of the sample, while the proportion of those with income above 3001 accounts for only 1.7%, which is probably due to a large number of students in the sample. The sample profile is shown in Table 5.1.

Table 5.1 Sample profile

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	183	42.56
	Female	247	57.44
Age Group	<20	23	5.35
	20-25	120	27.9
	26-30	125	29.1
	31-40	135	31.4
	>40	27	6.3
Marital status	Not married	348	81.4
	Married	92	18.6

	Junior high school and below	3	0.8
	High school /secondary school	15	4.0
Education	Junior college	150	35.1
	Undergraduate	110	32.7
	Master degree and above	162	37.4
	500yuan and below	82	19.0
	501-1000	68	15.2
	1001-1500	90	20.9
Disposable income	1501-2000	93	22.0
	2001-2500	63	15.0
	2501-3000	22	6.1
	3001yuan and above	7	1.7

5.1.2 Community profile

Among the 430 respondents' internet usage age, 90% of them were over 5 years old: 320 people were over 6 years old (accounting for 74.42%), and 71 people were from 5 to 6 years old (accounting for 16.51%). There were 1% with net age less than 1 year and 1 to 2 years respectively, and 37 respondents (8.6%) with Internet age of 3-4 years. Among the respondents, 313 people participated in the online community type of Post-Bar / Blog / Forum (72.79%), 60 participants were social / alumni (13.95%), 23 were game community (5.35%), 17 were transaction community (3.95%), 11 were portal (2.56%), and 5 were campus BBS (16%). The community type of one person participation did not belong to all the above communities (accounting for 0.23%).

Among the 430 respondents, 20 (4.65%) had registered in the community for less than six months, 41 (9.53%) had registered for more than six months and less than one year, 85 (19.77%) had registered for one to two years, and 20 (4.65%) had registered for two to three years. There were 67 respondents (15.58%) and 143 (33.26%) registered for more than four years. From this data, it is visible that most of the respondents are senior users of the online community.

In terms of weekly login times, 16 respondents (4.65%) log in once a week or less, 121 (28.14%) log in 2-3 times a week, 104 (24.19%) log in 4-5 times a week, 77 (17.91%) log in 6-7 times a week, 16 (4.65%) log in 8-9 times a week, and 24.19% respectively 74 respondents logged in more than 9 times (accounting for 17.21%).

Among the 430 respondents, 133 (30.93%) participated in less than 2 hours a week, 150 (34.88%) participated in three to five hours a week in the activities of the online community. There were 90 respondents (20.93%) who participated in six to eight hours per week, 26

respondents (6.05%) who participated in nine to eleven hours per week, and 31 (7.21%) participated in more than eleven hours per week.

The participation behavior of the respondents in the online community is relatively diverse. There were 174 respondents who enter the community to participate in the existing discussion (accounting for 40.47%), 22 respondents enter the community to initiate a discussion (5.12%), 14 respondents enter the community to play games (3.26%), 139 respondents enter the community to seek information (32.33%), and 79 respondents enter the community to browse without purpose. Two respondents' participation behavior in the community did not belong to all the above types (accounting for 0.47%). Table 5.2 shows the sample characteristics of the community profile.

Table 5.2 Sample characteristics

Variable	Category	Frequency	Percent(%)
Age Group	More than 6 years	320	74.42
	5-6 years	71	64.55
	3-4 years	37	66.07
	1-2 years	1	3.33
	Less than 1 year	1	3.33
Community type	Transaction	17	3.95
	Portal class	11	2.66
	Other	1	0.21
	Social networking and alumni	60	10.71
	Post bar, blog, forum	313	55.2
	Campus BBS	5	1.26
	Game type	23	5.31
Registration time	1-2Years	74	17.21
	2-3 Years	85	23.88
	3-4 Years	67	19.42
	More than 4 years	143	48.64
	6 months to 1 year	41	15.07
	Less than 6 months	20	5.97
Login times per week	More than 9 times	74	17.21
	Once a week or less	16	4.49
	Times a week	121	32.61
	Times a week	104	27.15
	Times a week	77	17.95

	Times a week	38	8.6
	More than 11 Hours	31	7.21
	2 Hours or Less	133	33.33
	3-5 Hours	150	34.09
	6-8 hours	90	28.85
	9-11 Hours	26	11.61
Participation behavior	Participate in existing discussions	174	40.47
	Initiate discussion	22	8.59
	Other	2	0.85
	Play a game	14	6.03
	Aimless browsing	79	36.24
	Looking for information	139	100

5.2 Descriptive analysis

From the 430 questionnaires collected data, we conducted basic statistics and descriptive analysis. From the data figure, it is visible that, among the 32 questions, the minimum value was 1, the maximum value was 7, the standard deviation was between 1 and 2, and the median ranged from 3 to 6. The specific results for descriptive statistics of the measurement part are shown in Table 5.3.

Table 5.3 Description of measurement items

Variable	Item	Mean	Median	Standard Deviation
Information support				
	IS1	4.733	5	1.278
	IS2	4.714	5	1.274
	IS3	5.293	5	1.304
Emotional support				
	SSE1	4.505	5	1.514
	SSE 2	4.742	5	1.536
	SSE 3	4.751	5	1.522
	SSE 4	5.095	5	1.281
	SSE 5	4.663	5	1.328
Interpersonal support				
	SSI1	5.46	6	1.213
	SSI2	5.147	5	1.288
	SSI3	5.579	6	1.152
	SSI4	5.600	6	1.140
	SSI5	5.233	5	1.240

Variable	Item	Mean	Median	Standard Deviation
Relationship capital				
	SCR1	4.386	4	1.435
	SCR2	3.379	3	1.619
	SCR3	3.270	3	1.682
Structural capital				
	SCS1	4.309	4	1.621
	SCS2	4.735	5	1.639
	SCS3	4.251	4	1.593
Cognitive capital				
	SCC1	4.814	5	1.468
	SCC2	5.349	6	1.206
Trust				
	TST1	4.902	5	1.393
	TST2	4.742	5	1.432
	TST3	5.305	5	1.249
Satisfaction				
	SAT1	5.663	6	1.002
	SAT2	5.509	6	1.126
	SAT3	5.265	5	1.294
	SAT4	5.498	6	1.169
Loyalty				
	LOY1	5.188	5	1.306
	LOY2	5.609	6	1.186
	LOY3	5.414	6	1.287
	LOY4	5.335	6	1.283

5.3 Structural equation modeling

The current study utilized structural equation modelling techniques to evaluate the overall model fit and examine the structural model (Hair Jr et al., 2014). The technique further examines the relationships between a construct and its measure accordingly and primarily assesses the hypothesized structural relationships between constructs. SEM is a flexible technique capable of performing several multivariate statistical analyses such as examining relationships between one or more dependent variables and one or more independent variables, growth curve modeling, path analysis, regression analysis, and factor analysis. The structural measurement part is about three factors of social support (information support, emotional support, interpersonal network management support), three factors of social capital (structural

capital, relationship capital, cognitive capital), trust, satisfaction, and community loyalty, with a total of 32 items.

5.3.1 Measurement model

Two criteria, such as internal consistency and construct validity of the measurement model are commonly used to compare scales by scholars in the social sciences (Ahmad & Thyagaraj, 2017). Internal consistency (internal reliability) is the degree of scale that produces consistent results in a test. Construct validity includes discriminant validity and convergent validity. Discriminant validity refers to the degree to which a construct is unduly distinctive from and unrelated to other constructs, and convergent validity reflects the extent to which a scale actually measures a construct (Hair Jr et al., 2014).

5.3.1.1 Reliability analysis

In general, reliability is used to analyze the internal consistency of latent variables. In this study, the Cronbach alpha (α) considered the internal consistency coefficient, used to evaluate latent variable measurement reliability. Table 5.4 shows the reliability analysis results. Except for information support and cognitive capital, the Cronbach alpha values of all other latent variables were higher than 0.7, indicating that the measurement of each latent variable had good internal consistency. Cognitive capital is only measured by two items. In addition, the reliability of all combinations is about 0.8, indicating that the reliability of the model is comparatively high.

Table 5.4 Results of reliability and factor loadings

Latent variable	Items	Loadings	Cronbach's α	CR	AVE
Loyalty	I am willing to use the follow-up products and services provided by the online community	0.68***	0.71	0.82	0.53
	I tend to use this online community in the future	0.74***			
	I feel like a loyal user of the online community	0.78***			
	Even if there are other competitors, I will continue to use the online community frequently	0.71***			
Trust	I feel confident that the identity of users in this online community is confidential	0.83***	0.78	0.87	0.70
	I believe in the confidentiality of the online community data	0.84***			

	I believe in the process of using the online community	0.83***			
	The online community can offer some help	0.67***			
	I am satisfied with the content of the online community	0.71***			
Satisfaction	I am satisfied with the online atmosphere of the community	0.70***	0.70	0.81	0.52
	I am satisfied with the overall atmosphere of the online community	0.80***			
	The information provided by the online community is accurate	0.78***			
Information support	The information provided by the online community is complete	0.84***	0.62	0.80	0.57
	The information provided by the online community is up to date	0.64***			
	I think I have a strong emotional connection with the online community	0.71***			
	I think I'm a valuable part of the online community	0.69***			
Emotional support	I believe that in this virtual online community, helping others is rewarding	0.55***	0.70	0.81	0.46
	I believe that members of the online community will help me if I need to	0.70***			
	I often share useful information and knowledge with other online community members	0.72***			
	In this online community, members publish information or articles in understandable form	0.66***			
	In this online community, members are willing to help other members solve their professional problems	0.59***			
Network management support	My experience in the online community was very enjoyable	0.74***	0.71	0.81	0.46
	On the whole, I'm happy to participate in the online community	0.71***			
	I like the overall atmosphere among users in this online community	0.70***			

Relationship capital	I tend to get the trust of other members in this online community	0.89***			
	In this online community, my position is not easy to be replaced	0.77***	0.75	0.84	0.64
	In this online community, other members have a strong dependence on me	0.74***			
Structural capital	I have always maintained a close social relationship with some members of the online community	0.80***			
	I know some members of the online community	0.77***	0.74	0.85	0.66
	I have frequent communication with some members of the online community	0.86***			
Cognitive capital	In this online community, members use the same terminology or jargon	0.71***		0.78	0.64
	In this online community, members use understandable communication patterns for discussion	0.89***	0.46		

Note: CR denotes Comprehensive reliability; AVE indicates Average Variance Explained: *, **, *** statistically significant at the 5%, 1%, and 0.1% level

5.3.1.2 Validity analysis

The convergence validity is reflected in two aspects: (1) all factor loads are significant at the 5% level of significance, and (2) the average extracted variance (AVE) of latent variables is above 0.5. From table 5.4, it can be seen that all factor loads were significant ($P < 0.001$). Only the average extraction variance (AVE) of emotional support and interpersonal network management support was 0.46. The average extraction variance (AVE value) of the other latent variables was above 0.5, which means that the latent variables explained more than half of their indicators' variation. Therefore, the convergence efficiency of the model is supported (Hair Jr et al., 2014).

The discriminant validity is reflected in two aspects: (1) the measured project load should be greater than all its cross loads; (2) the square root of the average variance extracted of each potential construct should be higher than the highest correlation between the construct and any other potential construct. From table 5.5 (correlation matrix of cross load between measured items and constructs), it is found that the load of each index is greater than all of its cross-loadings. Table 5.6 shows the construct's correlation matrix and the square root of the average

variance extracted, which meets the requirements. Therefore, it can be concluded that the measurement model has good discriminant validity.

Table 5.5 Rotation factor loading matrix

	SSI	TRU	IFS	SCR	LOY	SSE	SAT	SCS	SSC
TRU-1	0.197	0.831	0.264	0.222	0.305	0.304	0.345	0.204	0.227
TRU-2	0.263	0.837	0.368	0.245	0.281	0.313	0.346	0.252	0.186
TRU-3	0.370	0.833	0.328	0.278	0.379	0.371	0.461	0.178	0.294
IFS1	0.177	0.349	0.784	0.278	0.146	0.287	0.236	0.195	0.177
IFS2	0.272	0.367	0.836	0.260	0.207	0.331	0.316	0.200	0.164
IFS3	0.307	0.136	0.639	0.133	0.271	0.181	0.309	0.074	0.174
LOY1	0.433	0.292	0.286	0.190	0.681	0.356	0.336	0.163	0.231
LOY2	0.415	0.281	0.191	0.117	0.741	0.335	0.437	0.102	0.386
LOY3	0.487	0.288	0.172	0.170	0.778	0.406	0.422	0.234	0.353
LOY4	0.452	0.28	0.157	0.236	0.711	0.396	0.461	0.138	0.282
SAT1	0.413	0.285	0.214	0.019	0.346	0.267	0.672	0.150	0.311
SAT2	0.413	0.308	0.229	0.150	0.425	0.335	0.705	0.046	0.288
SAT3	0.430	0.400	0.375	0.209	0.391	0.312	0.699	0.135	0.218
SAT4	0.474	0.352	0.270	0.072	0.475	0.272	0.801	0.032	0.317
SSI1	0.658	0.189	0.180	0.049	0.373	0.235	0.405	0.032	0.377
SSI2	0.587	0.216	0.223	0.221	0.346	0.338	0.318	0.187	0.255
SSI3	0.737	0.227	0.19	0.128	0.432	0.393	0.431	0.082	0.275
SSI4	0.705	0.246	0.228	0.069	0.484	0.312	0.458	0.079	0.279
SSI5	0.693	0.275	0.301	0.179	0.429	0.431	0.409	0.158	0.314
SSE1	0.315	0.266	0.255	0.416	0.374	0.709	0.228	0.384	0.184
SSE2	0.323	0.282	0.239	0.352	0.317	0.688	0.268	0.340	0.161
SSE3	0.252	0.162	0.139	0.265	0.289	0.551	0.168	0.18	0.214
SSE4	0.416	0.294	0.186	0.301	0.386	0.700	0.347	0.263	0.283
SSE5	0.375	0.317	0.365	0.461	0.360	0.717	0.336	0.329	0.303
SCR1	0.254	0.312	0.233	0.888	0.260	0.444	0.218	0.417	0.163
SCR2	0.088	0.176	0.280	0.770	0.171	0.473	0.065	0.407	0.070
SCR3	0.003	0.193	0.236	0.742	0.107	0.395	0.010	0.449	0.020
SCS1	0.127	0.202	0.230	0.398	0.163	0.375	0.114	0.796	0.154
SCS2	0.133	0.141	0.089	0.366	0.164	0.306	0.098	0.769	0.045
SCS3	0.120	0.250	0.181	0.469	0.203	0.397	0.086	0.861	0.090
SCC1	0.243	0.170	0.162	0.132	0.310	0.243	0.198	0.095	0.706
SCC2	0.436	0.277	0.197	0.086	0.380	0.304	0.399	0.102	0.887

Table 5.6 Construct correlation and square root of average variance extracted

	1	2	3	4	5	6	7	8	9
Interpersonal support (1)	0.678								

	1	2	3	4	5	6	7	8	9
Trust (2)	0.342	0.834							
Information support (3)	0.332	0.385	0.757						
Relationship capital (4)	0.185	0.301	0.300	0.802					
Loyalty (5)	0.614	0.391	0.271	0.244	0.729				
Emotional support (6)	0.505	0.399	0.358	0.536	0.513	0.676			
Satisfaction (7)	0.601	0.468	0.379	0.158	0.571	0.410	0.721		
Structural capital (8)	0.155	0.251	0.211	0.512	0.220	0.448	0.121	0.81	
Cognitive capital (9)	0.441	0.288	0.225	0.128	0.432	0.343	0.392	0.122	0.802

Note: The elements on the diagonal are the square root of the average variance extracted

5.3.1.3 Common method bias

Common Method Bias, also known as Common Method Variance (CMV), is conducted after testing the sample data's reliability and validity. CMV represents the subjectivities in a data sample resulting from extraneous circumstances with the ability to influence responses provided. Considering that the survey responses were carried out online, there is a possibility of external factors with the ability to impact the responses. Generally, common method bias is detected when a single factor explains most of the variance in the study.

In this study, Haman's single factor test was used to evaluate CMV. Table 5.7 shows the rotation factor results. The results showed that six factors were extracted by factor analysis, accounting for 53.5% of the difference. The interpretation rate of the first factor was 26.2%, which did not exceed the upper limit of 50%. Multiple factors are extracted by factor analysis. There is no single dominant factor that explains most of the variance, so there is no significant common method bias in our data.

Table 5.7 Rotation factor (pattern matrix)

Factor	Eigenvalues	Variance percentage (%)	Accumulate %
1	7.349	26.246	26.246
2	2.626	9.379	35.625
3	1.722	6.149	41.773
4	1.149	4.104	45.877
5	1.124	4.015	49.892
6	1.023	3.652	53.544
7	.967	3.452	56.996
8	.932	3.327	60.324
9	.846	3.021	63.345
10	.762	2.723	66.067
11	.711	2.541	68.608

Factor	Eigenvalues	Variance percentage (%)	Accumulate %
12	.702	2.508	71.115
13	.675	2.412	73.527
14	.655	2.341	75.868
15	.648	2.316	78.183
16	.623	2.226	80.409
17	.604	2.158	82.567
18	.562	2.008	84.575
19	.534	1.908	86.483
20	.511	1.826	88.309
21	.501	1.791	90.100
22	.492	1.756	91.856
23	.471	1.682	93.538
24	.423	1.512	95.050
25	.392	1.399	96.449
26	.375	1.341	97.790
27	.327	1.168	98.959
28	.292	1.041	100.000

5.3.1.4 Multicollinearity

Multicollinearity refers to the case where an explained variance of the independent in the dependent variable by the independent constructs is overlapping. It indicates that no single independent variable explains unique variance in the dependent variable. Variable Inflation Factor (VIF) is applied to test for multicollinearity. Using multivariate regression in SPSS, the VIF value can be calculated for each independent construct in a model. As far as accepted thresholds are concerned, a VIF value < 3 is considered good; VIF > 3 is considered a potential multicollinearity issue; VIF > 5 is very likely an issue; and VIF > 10 is an issue. Multicollinearity in this study was conducted using both the Variable Inflation Factor (VIF) test. The results suggest that all of the VIF of the relationships was less than 3.00 and not less than 1.00.

5.3.2 Structural model

Before estimating the structural model parameters, this study first evaluated the multivariate assumptions, including normality, linearity, multicollinearity, and homo-variance. The results of the Hansen multivariate normality test (Doornik & Hansen, 2008) showed that the measured variables in this study did not meet the requirements of multivariate normal distribution ($P < 0.001$). Concurrently, considering the complexity of the proposed model and the small sample size, we choose the PLS-SEM algorithm based on variance instead of the structural equation

model based on covariance.

5.3.2.1 Test of the research hypothesis

In this study, PLS-PM using the software Smart PLS was used to estimate the parameters of the structural model. The parameters estimated by the model are shown in Table 5.8. The test results of the research hypothesis are shown in Table 5.9.

Table 5.8 Structural model results (overall)

	Coefficient	SE	t statistic
Information -support ---> trust	0.233	0.059	3.873***
Information support ---> loyalty	-0.052	0.057	0.972
Information support ---> satisfaction	0.127	0.053	2.353***
Emotional support ---> trust	0.144	0.074	1.941*
Emotional support ---> loyalty	0.190	0.059	3.176***
Emotional support ---> satisfaction	0.078	0.056	1.399*
Interpersonal support ---> trust	0.118	0.06	1.913*
Interpersonal support ---> loyalty	0.307	0.058	5.23***
Interpersonal support --> satisfaction	0.411	0.052	7.897***
Relationship capital ---> trust	0.087	0.055	1.577*
Relationship capital ----> loyalty	0.008	0.048	0.248
Relationship capital ---> satisfaction	-0.058	0.052	1.194
Structural capital ---> trust	0.060	0.053	1.132
Structural capital ---> loyalty	0.036	0.045	0.718
Structural capital ---> satisfaction	-0.048	0.046	1.021
Cognitive capital ----> trust	0.115	0.053	2.199*
Cognitive capital ---->loyalty	0.125	0.053	2.325**
Cognitive capital ---> satisfaction	0.099	0.046	2.103*
Satisfaction --> loyalty	0.240	0.059	4.144***
Trust > loyalty	0.075	0.051	1.406
Trust --> satisfaction	0.248	0.055	4.543***

Note: *, **, ***, statistically significant at the 5%, 1% and 0,1% level, two-tailed.

Table 5.9 Hypothesis test results

Hypothesis	Coefficients	Result
H1-Social support is positively correlated with user trust		
H1a : Community information support is positively correlated with user trust	0.233***	support
H1b: There is a positive correlation between community emotional support and user trust	0.144*	support
H1c: There is a positive correlation between interpersonal support and user trust	0.118*	support
H2 - Social support is positively correlated with customer satisfaction		

H2a : Community information support is positively correlated with user satisfaction	0.127***	support
H2b: Positive correlation between community emotional support and user satisfaction	0.078*	support
H2c: Positive correlation between interpersonal support and user satisfaction	0.411***	support
H3 - Social capital is positively correlated with user trust		
H3a: Positive correlation between community structure capital and user trust	0.06	not support
H3b: Positive correlation between community relationship capital and user trust	0.087*	support
H3c: Positive correlation between community cognitive capital and user trust	0.115*	support
H4 - Social capital is positively correlated with customer satisfaction		
H4a: Positive correlation between community structure capital and user satisfaction	-0.048	not support
H4b: Positive correlation between community relationship capital and user satisfaction	-0.058	not support
H4c: Positive correlation between community cognitive capital and user satisfaction	0.099*	support
H5 -Social support is positively correlated with online community loyalty		
H5a: Positive correlation between community information support and community loyalty	-0.052	not support
H5b: Positive correlation between emotional support and loyalty	0.190*	support
H5c: Positive correlation between community interpersonal network management support and user community loyalty	0.307***	support
H6 -Social capital is positively related to user community loyalty		
H6a: There is a positive correlation between community structure capital and user community loyalty	0.036	not support
H6b: Positive correlation between community relationship capital and community loyalty	0.008	not support
H6c: Positive correlation between community cognitive capital and user community loyalty	0.125***	support
H7 : User trust positively affects user community satisfaction	0.248***	support
H8: User community satisfaction positively affects user community loyalty	0.240***	support
H9: User Trust has a positive influence on user community loyalty	0.075*	support

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Chapter 6: Conclusions

This chapter presents a summary of the findings discuss the results, presents the theoretical contributions, managerial implications, and limitations of the study.

6.1 Discussion of findings

The aim of this dissertation was to study main determinants of online community loyalty. Specifically, the dissertation answered to research questions:

(1) Whether and how social support influences online community members' loyalty formation?

(2) Whether and how social capital influences online community members' loyalty formation?

In order to answer these research questions, the author gathered data from a sample of 430 online community users from China. The authors developed a conceptual model that includes the constructs social capital, social support, trust, satisfaction and loyalty. The authors used partial least squares path modelling to test the hypothesis and the direct and indirect relationships between social capital and social support and loyalty.

Community loyalty is the indicator of the excellent operation of the community. The higher the user's loyalty to the community, the longer long-term development of the community. The results of this study revealed that the loyalty of users to the online community is influenced by the trust and satisfaction of the users of the community. Trust and satisfaction mainly come from the influence of social support and social capital support. In fact, the loyalty of the online community is primarily induced by the community and their users. The perfection of the community, the completeness of information, the convenience of software and hardware all affect the users' evaluation of the online community; and the users themselves, due to the mutual relationship of community members, their own preferences, self-worth, and contribution also have a particular impact on the success of an online community. Under the comprehensive perspective of the two phenomena, the evaluation basis of online community loyalty can be formed.

1. Considering the dimension social support, this dissertation assumes that information support, emotional support, and interpersonal network management support are used to get

users' trust and satisfaction, get the user's experience of an online community, and further get the satisfaction and trust of an online community. the model assumes that social capital has both a direct impact on users loyalty, and an indirect impact, mediated by trust and satisfaction.

2. From the perspective of social capital, the developed model assumes that the three dimensions of structural capital, relationship capital, and cognitive capital, influence users' overall satisfaction with the online community, users trust, and users loyalty. This paper uses the perspective of social capital to consider the user's trust and satisfaction to the community. It analyzes the user's experience from the perspective of capital and reality, investigates the user's usability of the community more comprehensively, and observes the determinants of loyalty.

Drawing on the social support theory and social capital theory, this study investigates whether and how social support and social capital influence user's loyalty to online communities. We especially examine the mediating role of trust and satisfaction between social support and social capital and user's loyalty. The proposed model explains around 50% of the variation of loyalty. The value of social capital is mainly derived from the meaningful resources in the network and lead by "social trust", which plays a dominant role in evolving the presentation mode into acquired behavior. In the study, "social trust" concerns a range of psychological actions and existing trust to entrust. In the eastern concept of human relationship, sincerity is often used to move the other side to gain trust, and then the other side to give back, derived from mutual trust. However, In the western social psychology theory, trust is an individual psychological characteristic presenting expectation and belief. An intimate relationship itself cannot be regarded as the element of trust between people. The standardized personal approach and non-written sincerity lay a solid foundation for trust. Whether in western institutional norms or eastern human societies, the value of trust to social capital is the same. In the relationship, both parties release and maintain the relationship by trusting the other party, to get what they need, at the same time, to pay for the trust. Therefore, it can promote the conclusion and maintenance of a good relationship and ensure that people can obtain resources and meet their own needs in the process of communication. Sociologist Putnam pointed out that social capital is not only limited to individuals but also has the value of social capital in the process of social development. Therefore, social capital is not only a simple social exchange but also has the humanistic value of cooperation, contribution, and mutual assistance. The mutual win-win situation makes the social capital has a high cultural value and behavior standard because it advocates the people in the process of exchanges and cooperation to maintain a relative love order. It includes fair and win-win, complement each other, independent

constraints, prompting the equal rights and obligations, personal interests, and social interests with others is in a unified state. Under such restrictions, people tend to take each other's existence as the basis, enter into others' hearts in the process of lowering their interests, and promote the success of others in the process of their success. As entrusting each other, achieved the criteria of an individual's trust, which is broad mutual benefits and win-win results without constricted reciprocity. Participants have obtained a higher value of social capital than ever before. The mutual aid principle can also fully reflect social capital. It can show the inherent spirit of social capital and make it easier to obtain resources. It is conducive to the long-term existence of relations and the stability of social capital.

The results show that social support is positively correlated with user trust. Specifically, community information support, emotional support, and interpersonal support are positively correlated with user trust, which conforms the hypotheses H1a, H1b, and H1c. The results also demonstrate that social support is positively correlated with customer satisfaction. Particularly, community information support, emotional support, and interpersonal support are positively correlated with user satisfaction, which conforms the hypotheses H2a, H2b, and H2c. The results also strengthen and support the postulation that social support is positively correlated with user trust. Concretely, community relationship capital and community cognitive capital have a positive relationship with user trust. However, the relationship between community structure capital and user trust is not significant. Thus, H3b and H3c are supported while H3a is not supported. Besides, the relation between social capital and customer satisfaction is not confirmed. Although the association between community cognitive capital and user satisfaction is salient, the connection between community structure capital and user satisfaction and the relation between community relationship capital and user satisfaction are not significant. Therefore, H4a and H4b are not supported, and H4c is supported. The hypothesis of social support is positively correlated with online community loyalty is partially supported.

The results revealed that the relationship between emotional support and loyalty and community interpersonal network management support and user community loyalty are significant. In contrast, the relation between community information support and community loyalty is not significant. Hence, hypotheses H5b and H5c are supported, while hypothesis H5a is not supported. The hypothesis of social capital is positively related to user community loyalty is also partially supported. In particular, the relationship between community cognitive capital and user community loyalty is significant, while community structure capital and user community loyalty and the relationship between community relationship capital and community loyalty are not supported. Therefore, hypotheses H6a and H6b are not supported,

while H6c is supported. Furthermore, the results show that user trust positively affects user community satisfaction, supporting hypothesis H7. User community satisfaction positively affects user community loyalty, supporting H8. Finally, user trust has a positive influence on user community loyalty, supporting hypothesis H9.

These findings confirmed the multi-dimensionality of social capital, as Woolcock (1998) contended that social capital is a multi-faceted construct, identified by three dimensions. The study further revealed the robustness of a modified version of the social capital scale proposed by Lin and Lu (2011), composed of structural (social interaction ties), relational (trust), and cognitive social capital (shared value). On the other hand, the results also support social support as a multi-dimensional concept, as indicated by Veiel (1985). Combining the viewpoint together, this study argues that structural capital, relational capital, cognitive capital, information support, emotional support, and interpersonal network support well represent the nature of an online community among users and such social capital factors contribute to online loyalty.

The results of the model estimates are summarized in Figure 6.1.

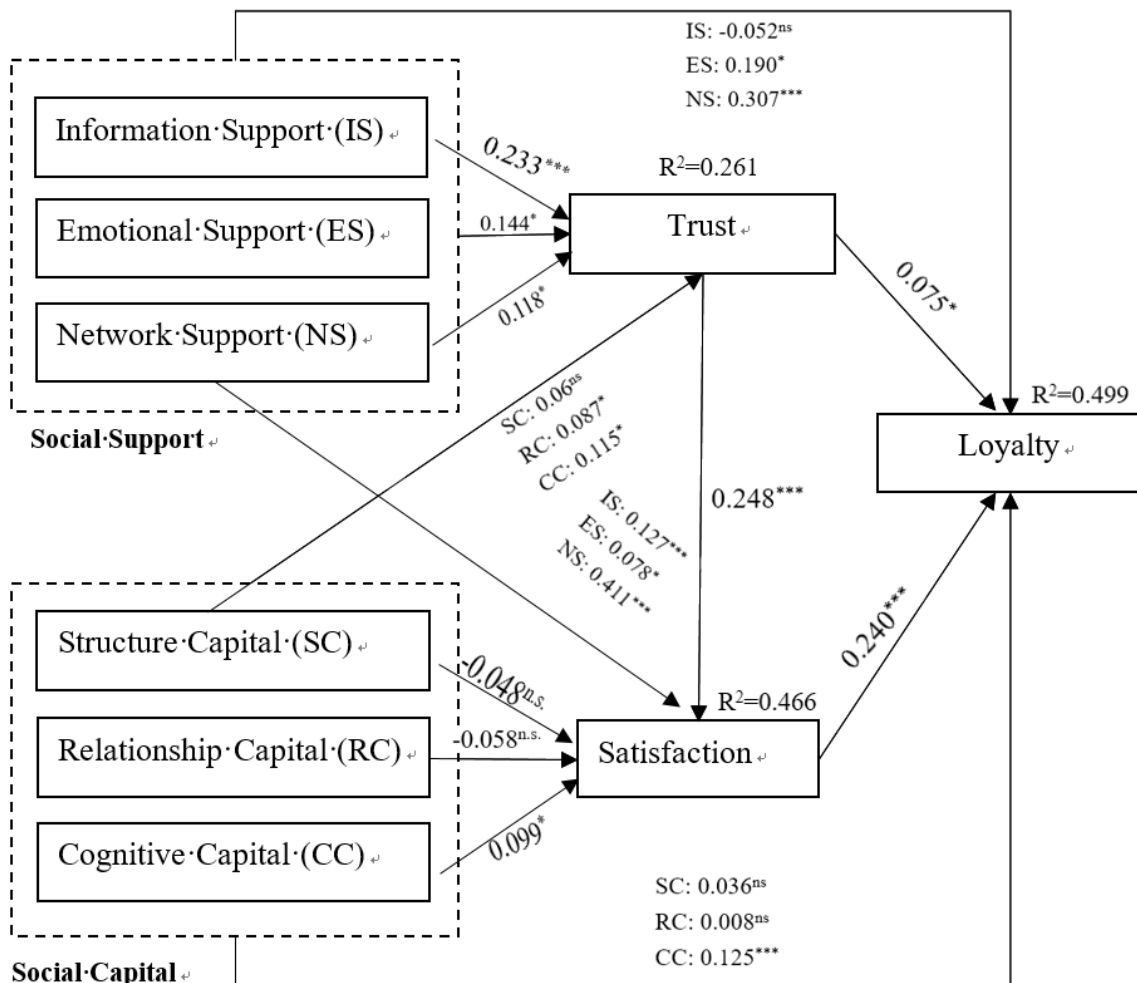


Figure 6.1 The results

6.2 Theoretical contributions and managerial implications

This study provides some valuable theoretical and practical implications. Firstly, while previous studies examined social capital or social support in the online community context, the previous analysis was limited in exploring inconsistencies in the use of social support and social capital measurements, particularly for dimensionality and structure. Previous studies (Shang & Sun, 2021; Xu & Saxton, 2018) also explored their role in facilitating engagement and sharing. This is the first study to investigate the integration role of social support and social capital on e-loyalty. We particularly emphasized the indirect effect of social support and social capital through two important mediating variables, trust and satisfaction. Most of the existing literature (Chiu, Hsu, & Wang, 2006) focuses on the direct effect of social capital on knowledge sharing behavior. This paper also considers in the research model the direct influence of social support and social capital on community loyalty, a variable reflecting the emotional dependence of members on the community. The data collected from the community show that the three dimensions of social support and one dimensions of social capital (cognitive capital) significantly affect the loyalty formation of online community members. Although social support and social capital have a specific direct impact on members' participation in knowledge acquisition and sharing behavior. This direct role is weak when community trust and satisfaction are used as mediating variables, which indicates that society has a positive impact on the loyalty formation of online community members. Capital is the behavior of creating and sharing information through enhancing members' loyalty.

Secondly, the formation model of online community loyalty is proposed, and the mediation effects of trust and satisfaction are established. Combining the formation mechanism of loyalty, this paper proposes and proves that the loyalty of members can effectively establish the trust of members to the community service providers or businesses, and the loyalty further affects the members' intention to obtain information from online communities and purchase products.

Thirdly, this study helps marketers gain a better understanding of social capital and social support elements developed through interpersonal relationships in an online community. Marketers may develop a marketing strategy cultivating cognitive capital and social support (information support, network support, and emotional support) in online communities for building online community loyalty. Thus, firms should consider leveraging a social media platform that enables consumers to share information, interact with others, and develop and sustain deeper relationships. These strategies and platforms would assist in improving social capital and social support perception and thus help firms to increase consumers' commitment

to their communities, resulting in enduring loyalty.

6.3 Limitations and avenues for future research

First of all, this study uses the method of online questionnaire survey. The design of interview theme is mainly influenced by the literature review. One of the limitations of this study is the use of a convenience sampling procedure.

Second, due to the cultural differences of different countries and regions in the world, this study mainly focuses on one country, and its conclusions cannot be generalized applied to other regions. However, future research can be conducted in other parts of the world. A cross- country study might also be performed, in order test the differences between countries or mainland regions.

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- | | |
|----|---|
| 14 | I often share useful information and knowledge with other online community members |
| 15 | In the online community, members use the same terminology or jargon |
| 16 | In this online community, members use an understandable communication model to discuss |
| 17 | In this online community, members will publish information or articles in comprehensible |
| 18 | In the online community, members are willing to help other members solve their professional |
| 19 | I had a great time in the online community |
| 20 | In general, I am very happy to participate in this online community |
| 21 | I love the overall atmosphere of the online community |
| 22 | I would like to use the follow-up products and services provided by this online community |
| 23 | I tend to use the online community in the future |
| 24 | I feel like a loyal user of the online community |
| 25 | I will continue to use the online community even if there are other competitors |

Part four: Online community satisfaction

No.	Questions
1	The online community can offer some help
2	I am satisfied with the community content in the online community
3	I am happy with the positive atmosphere of the online community
4	I am satisfied with the overall atmosphere of the online community

Part five: Online community trust

No.	Questions
1	I trust that the identity of the online community is confidential
2	I have confidence in the confidentiality of this online community data
3	I have faith in the process of using this online community

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Annex B

社会支持与社会资本视角对在线社区忠诚的调查问卷

尊敬的女士/先生:

您好!感谢您在百忙之中抽出时间回答问卷!我是xx大学博士研究生,正在进行在线社区忠诚形成机制的研究,调查对象是在线社区的用户。本问卷采用匿名调查的形式,所收集的数据仅用于本次学术研究,不会用于任何商业用途,您的回答将被完全保密,请您放心作答。再次感谢您的鼎力支持!

说明:在线社区是指通过网络,为人们提供可以围绕某种兴趣或需求集中进行交流的地方,人们在此获取信息、互相学习、社交、甚至购物、交易、娱乐等等。例如:人人网社区、China Ren 社区、天涯社区、新浪社区、TOM 社区、搜狐社区、网易社区、西祠胡同、BBS、QQ 论坛、百度贴吧、博客、微信群、淘宝社区等等。

请您就目前最常浏览的在线社区为对象回答以下问题。

第一部分 个人信息

1、您的性别

A、男 B、女

2、您的年龄

A、20 岁以下 B、20-25 岁 C、26-30 岁 D、31-40 岁 E、41 岁以上

3、您的学历

A、初中及以下 B、高中(职)/中专 C、大专
D、本科 E、硕士及以上

4、您的平均可支配收入

A、500 元以下 B、501—1000 元 C、1001—1500 元 D、1501—2000 元
E、2001—2500 元 F、2501—3000 元 G、3001 元以上

5、您的网龄

A、1 年以下 B、1—2 年 C、3—4 年
D、5—6 年 E、6 年以上

6、您是否在校学生

A、是 B、否

第二部分 参与社区的情况（单选）

1、该虚拟社区的类型是

- A、贴吧、博客、论坛类 B、交易类 C、社交、校友录 D、游戏型
E、门户类 F、校园 BBS 类 G、其它

2、您在该虚拟社区注册会员的时间为

- A、6 个月以下 B、6 个月到 1 年
C、1-2 年 D、2-3 年
E、3-4 年 F、4 年以上

3、您平均每周登陆该虚拟社区的次数为

- A、每周 1 次或更少 B、每周 2-3 次
C、每周 4-5 次 D、每周 6-7 次
E、每周 8-9 次 F、9 次以上

4、您每周参与该虚拟社区的时间为

- A、2 个小时及以下 B、3-5 个小时
C、6-8 个小时 D、9-11 个小时 E、11 个小时以上

5、您参与该虚拟社区的主要行为是

- A、无目的浏览 B、参与已有讨论
C、发起讨论 D、寻找信息
E、玩游戏 F、其它

第三部分 在线社区忠诚度

1 代表非常不同意，2 代表比较不同意，3 代表不同意，4 代表一般，5 代表同意，6 代表比较同意，7 代表非常同意

序号	问题	打分
1	该在线社区提供的信息很准确	1 2 3 4 5 6 7
2	该在线社区提供的信息很完整	1 2 3 4 5 6 7
3	该在线社区提供的信息更新很及时	1 2 3 4 5 6 7
4	我一直与该在线社区中的一些成员保持紧密的社会关系	1 2 3 4 5 6 7
5	我认识该在线社区中的一些成员	1 2 3 4 5 6 7
6	我与该在线社区中的一些成员有很频繁的沟通	1 2 3 4 5 6 7
7	我在该在线社区往往能较容易得到其他成员的信任	1 2 3 4 5 6 7
8	在该在线社区中，我的地位不容易被取代	1 2 3 4 5 6 7
9	在该在线社区中，其他成员对我有很强的依赖性	1 2 3 4 5 6 7

10	我认为自己与该在线社区有比较强的情感联系	1 2 3 4 5 6 7
11	我认为自己是该在线社区中有价值的一分子	1 2 3 4 5 6 7
12	我相信在该虚拟在线社区中, 帮助他人是有回报的	1 2 3 4 5 6 7
13	我相信如果我需要, 该在线社区的成员会帮助我	1 2 3 4 5 6 7
14	该在线社区的管理使我产生了很强的归属感	1 2 3 4 5 6 7
15	在该在线社区中, 成员们使用同样的术语或行话	1 2 3 4 5 6 7
16	在该在线社区中, 成员们会使用可理解的沟通模式进行讨论	1 2 3 4 5 6 7
17	在该在线社区中, 成员们会使用可理解的形式发表信息或文章	1 2 3 4 5 6 7
18	在该在线社区中, 成员们都愿意帮助其他成员解决他们的专业问题	1 2 3 4 5 6 7
19	我在该在线社区的经历很愉快	1 2 3 4 5 6 7
20	总体来说我很满意参与该在线社区	1 2 3 4 5 6 7
21	我喜欢本在线社区用户间的整体氛围	1 2 3 4 5 6 7
22	我愿意使用该在线社区提供的后续产品和服务	1 2 3 4 5 6 7
23	在未来我倾向于使用该在线社区	1 2 3 4 5 6 7
24	我觉得自己是该在线社区的一个忠实用户	1 2 3 4 5 6 7
25	即使有其它竞争者, 我仍会继续保持对该在线社区的使用频率	1 2 3 4 5 6 7

第四部分 在线社区满意度

序号	问题	打分						
1	该在线社区能够提供一些帮助	1	2	3	4	5	6	7
2	我对该在线社区内容满意	1	2	3	4	5	6	7
3	我对该在线社区正能量气氛满意	1	2	3	4	5	6	7
4	我对该在线社区整体氛围满意	1	2	3	4	5	6	7

1 代表非常不同意, 2 代表比较不同意, 3 代表不同意, 4 代表一般, 5 代表同意, 6 代表比较同意, 7 代表非常同意

第五部分 在线社区信任度

1 代表非常不同意, 2 代表比较不同意, 3 代表不同意, 4 代表一般, 5 代表同意, 6 代表比较同意, 7 代表非常同意

序号	问题	打分						
1	我对该在线社区用户身份保密感到信任	1	2	3	4	5	6	7
2	我对该在线社区数据保密感到信任	1	2	3	4	5	6	7
3	我对该在线社区使用过程感到信任	1	2	3	4	5	6	7