
# THE INFLUENCE OF ONLINE COMMUNITIES ON CONSUMERS' PURCHASE INTENTIONS: BASED ON THE MODIFIED TECHNOLOGY ACCEPTANCE MODEL

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## ABSTRACT

This paper presents the research of the impact of online communities on consumers' shopping intentions with online consumers in Chengdu, Sichuan Province, China as samples. Past studies have revealed the reasons for consumers' online shopping. However, with the continuous development of online communities, the online community has begun to impact consumers' online shopping intentions. This research aims to reveal the influencing factors of online communities on consumers' shopping intentions by sampling 371 participants in Chengdu, Sichuan Province, China and using structural equation model for data analysis. The research results show that the perceived expectation match is the most important factor affecting consumers' shopping intentions. Cognitive trust and perceived usefulness have a positive impact on perceived expectation match and purchase intentions. This research provides a reference and effective model for marketers to formulate marketing strategies and advertising in online communities.

**Keywords: Online community, perceived expectation match, cognitive trust, perceived usefulness, TAM**

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Mr. Dong Wang

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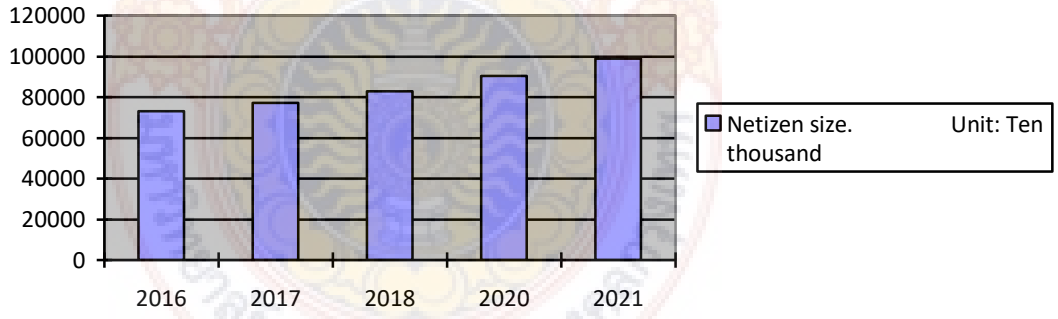
# CHAPTER 1

# INTRODUCTION

## 1.1 Overview

In 1994, China fully functionally connected to the Internet. With the rapid development of informatization, as well as the advancement and construction of the 5G network, the Internet has greatly promoted the transformation of people's lifestyles. In the Internet environment, people can more easily obtain information, socialize and entertain (Y. Kim et al., 2011). At the beginning of networking, the concept of "community" became a core element. In recent years, with the rapid development of community technology and the maturity and popularization of community applications, the Internet is gradually entering the era of online communities. From forums/BBS, alumni records, blogs, personal space to social networking sites, all kinds of online community forms generation by generation have attracted the high attention and dependence of a large number of users. Online communities have become basic Internet applications that the majority of netizens must use daily (C. Zhang et al., 2012).




Source: http://www.cac.gov.cn/2021-02/03/c_1613923423079314.htm

With the continuous growth of e-commerce, online shopping information asymmetry indicates the difficulties in determining product quality and identifying sellers. Information asymmetry increases the risk of customer decision-making, while word of mouth as an important source of information for customer decision-making will reduce the degree of information asymmetry (Javadi et al., 2012).

Due to its higher credibility, word of mouth has a significantly bigger influence on consumers' attitudes and behaviors than advertising or marketing, according to a vast number of studies. Traditional word-of-mouth knowledge is often passed down by friends, families, classmates, or coworkers, and it is confined to certain real-world communities, such as residential neighborhoods, universities, and office buildings (L. Zhang, 2009).

Different types of online communities have attracted a large number of Internet users. From the perspective of the development history of online communities, different forms of online communities have emerged with the rapid development of information and network technologies (Park & Cho, 2012). The early forms of online communities mainly included forums/BBS, blogs, post bars, etc. The common and distinctive feature of these online communities was that their user identities were anonymous and completely symbolic, forming a sharp contrast with real communities. Although these forms of communities, such as blogs and forums/BBS, existed in the early stages, they still attracted large-scale users. As online networks such as Facebook have grown in popularity, Xiaohongshu, Weibo and other online platforms featuring real identities and real interpersonal relationships have become emerging forms of online communities. Such online communities are called social networking sites and abbreviated SNS in practical and academic circles generally. SNS is considered an important trend in the development of online communities (H. Kim et al., 2014).

The non-temporal, non-regional, low-cost, and information-rich features of online communities provide a variety of ways for consumers to communicate with each other, while such ways were not available in the past. Consumption of commodities is a significant element of human activities. These interactive activities in online communities include a huge number of interactions in commodity consumption data (Santos & Gonçalves, 2012). By December 2020, the online shopping users of China had risen to 772 million, up 71.23 million from March 2020, accounting for 78.2 percent of all users of the internet; the number of users of online purchasing using mobile devices had risen to 771 million, up 73.19 million from March 2020, accounting for the majority of mobile Internet users. Due to the significant differences between virtual communities and SNS, consumers' interactive behaviors on these two platforms also vary remarkably. Particularly, in virtual communities, consumers interact with strange netizens.

The biggest difference of strangers from neighbors, colleagues, classmates, friends, and relatives is that they have a wider range, more complex composition, and less attachment (Chou&Wang, 2009). Compared with communication platforms, virtual communities feature more free time, more knowledge, higher contact efficiency, lower interaction costs, and an easier way of venting emotions and expressing oneself. Opinion leaders are determined by an individual's performance in society, not by their social standing (L. Zhang, 2009). However, online social networking is also a double-edged sword. While virtual communities provide key

benefits such as enormous volumes of information, high contact efficiency, and low interaction costs, consumers find it more difficult to appraise virtual communities in comparison to physical communities due to the poor quality of information.

SNS is different from traditional communities and virtual communities. It has not only a substantial volume of data, high interaction efficiency and a low interaction cost like virtue communities, but also the almost same real interpersonal relationship as in the traditional communities. In general, the interpersonal influencing factors of behaviors of Chinese consumers have begun to change, and netizens and online communities have become new influential objects and interactive platforms.

In addition, there are differences in the interactive behaviors of consumers in varying online communities, which are used in conjunction with social interaction and communication technologies. The production and replication of social concepts and circumstances depend on software and technologies. This is because the online revolution has allowed social ties and group communication to transform from the initial communication via e-mail to communication via instant messaging. Furthermore, despite the widespread usage of blogs, it is clear that changes have occurred in terms of building a new community, exchanging personal ideas, and transferring personal viewpoints.

The next phase in social evolution is social computing. The majority of CIOs are now utilizing social computing to power their internal workplaces. It has been mostly successful in boosting staff empowerment when people work as part of a team. Companies that sell consumer goods see social media as an alternate channel and the "sole method" to attract new consumers. As online transactions grow more common, the approach of increasing customer loyalty in online purchasing has shown to be a successful way for businesses to improve revenues and stay competitive (Sun, 2011).

## 1.2 The Statement of Problems

Information from non-commercial channels influences consumers more than information from commercial channels, especially when they perceive a higher buying risk. Information from personal relationships frequently plays a larger role in consumers' purchasing decisions (Herr et al., 1991). Interpersonal influence theory has also proved that the interaction between consumers will affect consumers' purchasing decisions (Wind, 1976).

In discussing the psychological and behavioral responses of consumers stimulated by external factors, the theoretical models commonly used by scholars are mainly the technology acceptance model (TAM), theory of planned behaviors (TPB) and mood reaction model (pleasure-arousal-dominance model proposed by Mehrabian and Russell, referred to as MR PAD). TPB only uses attitude as a dimension to describe consumers' psychological responses, which is too abstract.

Although many scholars have made revisions since TPB was proposed, there is no theoretical model widely accepted by scholars in the field of consumers' actions.

TAM supplements the antecedents of attitudes and experiences wide recognition and use by scholars in the field of information systems, while it mainly explains users' acceptance of new technologies. For many daily consumer products, consumers will have a certain understanding of product usage before buying based on their own knowledge with life experience, and manufacturers will make efforts in product operation design, so the product information that consumers need to understand through interaction may not be completely useful. There may be other important issues ignored by TAM. TAM may be more suitable for examining people's needs to evoke problems, but it is not necessarily a good way to explain the problems on the satisfaction of consumer demands.

How to modify TAM so that it becomes suitable for explaining the previously mentioned problems remains unclear. MR PAD is mainly suitable for the interpretation of consumers' impulsive buying behaviors. In general, it is still difficult to find a theoretical model that can properly explain the psychological and behavioral responses of consumers after their interaction in online communities.

In general, online communities have become a new platform for interaction between consumers, but the research on how consumers' interaction in the online communities affects their purchasing decisions is still very unspecific and insufficient, and further systematic research is needed to explore important issues.

## 1.3 Research Questions, Significance and Purposes

### 1.3.1 Research questions

Based on the TAM, the psychological response variables of this research are the dimensions of perceived usefulness, cognitive trust, and perceived expectations, and the behavioral response variable is the purchase intentions dimension. It aims to explore factors influencing consumers' purchase intentions in the online community environment in Chengdu, Sichuan Province, China.

RQ1 Does perceived usefulness have a significant impact on perceived expectation match?

RQ2. Does cognitive trust have a significant impact on perceived usefulness?

RQ3. Does cognitive trust have a significant impact on the perceived expectation match?

RQ4. Does perceived expectation match have a significant impact on purchase intentions?

RQ5. Does perceived usefulness have a significant impact on purchase intentions?

RQ6. Does cognitive trust have a significant impact on purchase intentions?

### 1.3.2 Significance of the research

The significance of this research lies in the below aspects:

(1) It may provide theoretical assistance for corporations to leverage online communities in a targeted manner by revealing the influence of interaction in different contexts on purchasing decisions of consumers.

(2) It may contribute important core content to the construction of the online community marketing theory system.

(3) It may provide supplementary and perfect suggestions for some basic theories describing human behaviors from the perspective of online communities.

## 1.4 Purposes of the Research

The changes in consumer interactions brought about by the emergence of online communities have attracted the attention of academia and enterprises, and online communities have become the main battlefield for future sales promotion. Under this status quo, it is of great significance to examine the influence of online community interaction on purchasing decisions of consumers, both from practical and theoretical points of view.

This research is a quantitative type, with the purposes as follows:

(1) To study the interactive behavioral mechanism model of consumer purchase decisions in the online community environment.

(2) To study how companies can carry out marketing in the online community environment.

(3) To study the model in the virtual community environment from interaction to the specific laws of behavioral differences.

(4) To study the model of marketing strategies of companies in the virtual community environment.

## 1.5 Scope of the Research

Questionnaire surveys were used to collect data from 450 consumers in Chengdu, Sichuan Province, China. The questionnaires were based on a 5-point Likert scale, and a screening question was set at the beginning of questionnaires: "Do you have any online shopping experience?" Only those who offered a positive answer were asked to fill in the complete questionnaire. The data were collected on September 2021 and October 2021, during which 400 people participated in the survey. However, 29 people were excluded because they did not fully answer the questions. After the deletion of questionnaires that did not meet the requirements, the final convenience sample consisted of 371 participants, including non-users and fitness supplement users, with an overall response rate of 92.75%.

## 1.6 Benefits of the Research

The benefits of the research are illustrated below:

(1) The research can help to know the plan-interaction-response model of consumer psychological and behavioral responses to interactive stimuli. It can address the difficulty in existing research to find theoretical models that correctly explain consumer psychological and behavioral responses after interactive activities. It will provide not only a reference for expanding the connotation and use of TAM, but also new theoretical guidance for exploring the issue on how to satisfy consumer needs.

(2) It can help to know the dimension of interaction characteristics in the online community environment. Unlike previous studies on interaction from a single, static perspective, this research will examine the multifaceted interpersonal effects from the perspective of interactive activities.

(3) It can provide a more detailed and comprehensive clarification of how online discussions affect consumer purchase decisions by exploring and modeling a mechanism of the effect of online group interaction on consumer purchase intentions.

(4) Through the exploration of the impact of interaction on purchase behaviors of users in virtual communities and on SNS, it can contribute to the theory of consumer interaction effects from the perspective of virtual and real human relationships. In particular, SNS is a form of online community that has emerged only in recent years. There is no research on consumer behaviors in the SNS environment.

## 1.7 Future Research

Based on the above research deficiencies and the prospect of the research content, it concludes that the following aspects should be further explored in future research:

First, regarding the plan-interaction-response model, based on the research purposes above-mentioned, the focus was only put on the network. The applicability and performance of the model in describing consumer psychology and behavioral responses were tested by exploring the consumer interaction in the online community environment, while the applicability of the model in other interactive environments, such as in the interactive situation in the real environment, was ignored. Moreover, the model's usefulness when the interactive material wasn't a consumer product (elections, job seeking, and other social activities, etc.) was ignored. To put it another way, the applicability of the plan-interaction-response model for additional types of interactions should be explored in further research in order to broaden the model's area of use.

Second, only the dimension of interaction for the online community environment was explored in this research, but not the application of this dimension in other interactive contexts, as stated in the research goal. In future research, the applicability of this dimension in various settings is a possible direction to include an exploratory factor analysis of the interactive scale, as well as comprehensive research on the interactive dimension scale's evolution.

Third, to assess the moderating impact, this paper exclusively employs the type

of online community as the moderating variable. Future research might expand the number of moderating variables tested, such as gender and product type, and discover the significant role of other variables in the link between interaction and customer behaviors. The findings of this research have offered a theoretical foundation as well as research suggestions for examining the impact of contact on consumers' purchasing intentions. On this basis, future research might include an investigation of genuine communities.

# CHAPTER 2

# LITERATURE REVIEW

## 2.1 Definition

### 2.1.1 Virtual Community

Preece et al. (2003) defined a virtual community as people gathering in order to obtain/provide information, get support, study or find company. People who don't know each other but have similar goals, according to H. W. Kim et al. (2011), utilize cyberspace interactive communication as the primary way of forming connections, sharing information, having fun, or conducting economic transactions, forming a virtual community.

The concept of virtual community by Rheingold (1993) is by far the most widely accepted, defining a virtual community as "a type of social aggregation that arises from the fact that there are enough individuals and interpersonal ties in the virtual world, also on the Internet, the long-term evolution of human emotions". Many researchers cite the definition of Hagel and Armstrong (1997), *i.e.*, a virtual community is a location where individuals may connect extensively around a common interest or need. On the internet, social and commercial value is created. Most definitions of virtual community did not capture its virtual qualities since early research mostly linked virtual communities with online communities. From the perspective of management, H. W. Kim et al. (2011) defined a virtual community as a group formed by people who have never met but have similar goals and use interactive communication in a cyberspace as the primary means of establishing relationships, sharing knowledge, having fun, or conducting economic transactions.

### 2.1.2 Social networking

According to Boyd and Ellison (2007), social network sites are a network-based service that allows users to: (1) create a public or semi-public personal space in a network information platform, (2) connect with other users and share with them, and (3) connect with other users and share with them a link list. Through this link list, you may browse and enter the personal space of the user, as well as the personal space of other users. According to Ji et al. (2010), social network services are a type of network service that allows users to develop connections by giving them personal space. Users' personal information is stored in this personal space, which also includes capabilities to promote the connection between users and a platform for exchanging information and material.

Williams et al. (1988) defined interaction from the perspective of control as the degree of participation in controlling the conversation and exchanging roles in the

communication process. Ha et al. (1998) defined interaction as the degree of need between communicators to respond to each other and to be willing to promote communication with each other.

Interaction, according to these definitions, is a process of information transmission that includes both the sender and the receiver of the information, as well as the substance and feedback of the disseminated information.

From the current research, the definition given by Boyd and Ellison has been recognized and cited by most scholars (Chang & Zhu, 2012). It is a more comprehensive and intuitive description of SNS. Therefore, combining the previous analysis of SNS and the definition of other scholars, SNS is defined as a type of social network application software using cyberspace as a carrier to provide users with social network services. A public or semi-public personal space can be established on it, and a shared connection list can be established by linking with the personal space of a specific or non-specific user. You may browse and enter the personal area of individuals on the connection list, as well as use their services. Through the connection list, one can reach other users' personal space, forming a personal network of interpersonal ties (Ma, 2021).

### 2.1.3 Interaction

In terms of the definition of interaction, Wiener defined it earlier. From the perspective of communication science, Wiener (1948) described interaction also as a process of an information receiver sending feedback to the source depending on the source's information content, and using ongoing feedback between the two parties to constantly change the information and return content, eventually leading to a positive result. From the standpoint of control, Williams et al. (1988) defined interaction as the degree of engagement in regulating dialogue and trading roles in the communication process. Santos and Gonçalves (2012) defined interaction as the degree of need between communicators to respond to each other and to be willing to promote communication with each other. Interaction, according to these definitions, is a process of information transmission that includes both the sender and the receiver of the information, as well as the substance and feedback of the disseminated information.

In terms of interaction types, scholars have proposed different interaction types according to different research contents. Researchers have believed that there are three types of interaction: user-to-user, user-to-content, and user-to-computer. Hoffman and Novak (1996) distinguished two forms of interaction: direct communication interaction and indirect communication interaction, and proposed two forms of network interaction: human-computer interaction and interpersonal interaction. Rafaeli and Sudweeks (1997) divided interaction into one-way communication, two-way communication and interactive communication. Among them, one-way communication is like listening to the radio and reading a newspaper; two-way communication involves the reaction of one party to the other; interactive

communication is the highest level of interaction, and the content is continuous and relevant. Based on journalism, Khater (1999) divided interaction into content interaction and interpersonal interaction. From these studies, interaction mainly includes three types: the interaction between the information source and the information receiver, the interaction between the information receiver and the information itself, and the human-computer interaction.

### 2.1.4 Consumer interaction

As early as the 1960s, some scholars have recognized that the interaction between consumers can promote the development of the company and bring about yield. The earliest scholars who published articles on consumer interaction in international journals were Martin and Pranter (1989). In recent years, marketing academia and business circles have been increasing their awareness of the importance of consumer interactions to company performance. Libai et al. (2010) defined consumer interaction as the transmission of information from a certain consumer or a group of consumers to another consumer or a group of consumers. This information transmission process may change the preferences of these consumers, the actual purchase behaviors, or their future communication methods.

Scholars split consumer interaction into several distinct forms from various views when it comes to the sorts of consumer engagement. The most common ones are introduced below. Martin and Pranter (1989) distinguished between direct and indirect consumer interaction. Consumer engagement in the full activity scene is referred to as direct interaction; consumer interaction is just a tiny portion of the overall activity scene, referred to as indirect interaction. Harris et al. (2000) split interaction into two types: on-site interaction and off-site interaction. Consumer engagement on the shopping site is referred to as on-site interaction; off-site interaction is referred to as off-site interaction. Due to a shortage of research platforms in the conventional setting, consumer interaction research is mostly focused on on-site contact, whereas word-of-mouth research is primarily skewed towards off-site interaction.

### 2.1.5 Technology Acceptance Model (TAM)

Based on rational behaviors theory, Fred D. Davis (1985) proposed a technology acceptance model (TAM) to explain people's computer usage behaviors. Compared with the rational behaviors theory, TAM adds two important beliefs that affect attitudes: perceived ease of use and perceived usefulness. Since Davis proposed the TAM model, Davis and his collaborators and other scholars have successively conducted a number of studies to verify and modify TAM (Davis et al., 1989). Perceived usefulness and attitude are important antecedents that affect users' willingness to use technologies. Perceived ease of use and perceived usefulness are important antecedents that affect users' attitudes, and perceived ease of use will affect users' perceived usefulness in this model. Moreover, external stimulus variables affect

perceived usefulness and perceived ease of use. Perceived usefulness relates to how much a person feels that utilizing a specific system may increase his or her job performance, whereas perceived ease of use refers to how much an individual believes that using a special system is simple.

### 2.1.6 Purchase intentions

Intention is the subjective probability that an individual will engage in a particular behavior and, by extension of the same concept, purchase intention is the probability that a consumer is willing to take a particular purchase (Xiao et al., 2019). Consumers' attitudes towards a product or brand, combined with external factors, constitute their purchase intentions, which can be seen as a subjective tendency to choose a particular product and has been shown to be an important predictor of their behaviors (J. Kim & Lennon, 2013). Purchase intentions also refers to the subjective probability or likelihood of a consumer purchasing a particular product, while some scholars believe that it is a consumer's intention to purchase a particular product (Chen & Lin, 2018). Another definition is the likelihood that a consumer will buy the product. Some believe purchase intention is the psychological advisor for a consumer to buy a product that suits his or her needs, as well as a manifestation of consumer psychology, a prelude to buying behaviors (Mutum, 2015). The purchase decision comes from the market with the consumer, made by all individuals and households who buy goods to satisfy their personal needs. It is the final market for which the market is organized and even the whole economic activity, and it is also the market for the last direct consumer goods for individuals (He et al., 2018). The intention of a client to acquire a specific service or product is described as product purchase intentions. This readiness stems from a variety of reasons, including product quality, service quality, user needs, and pricing factors, among others (Kim & Lennon, 2013).

### 2.1.7 Cognitive trust

Cognitive trust and emotional trust are the two types of trust (Xiao et al., 2019). Cognitive trust relates to an individual's reasonable anticipation of the target item's trustworthy features (Komiak & Benbasat, 2003). Emotional trust refers to an individual's perception of safety and comfort while trusting the target object. Emotional trust may be an attitude, whereas cognitive trust can be a conviction. Although many scholars describe trust as a conviction in the ability to trust (cognitive trust), more and more are beginning to distinguish between cognitive trust and emotional trust, classifying them as the individuals' cognitive reaction and emotion, respectively. To make the notion more obvious, it is called a reaction (Komiak & Benbasat, 2003).

The trustworthy attributes possessed by the target object of cognitive trust generally refer to competence and integrity. In marketing, cognitive trust is often directly defined by consumers' ability and perception of integrity (Doney & Cannon, 1997). Among them, ability refers to the influential skills, competence or

characteristics of the target object in a certain field, while integrity is the positive degree and consistency of the target object's words and deeds (Banks et al., 1995).

### 2.1.8 Perceived usefulness

Perceived usefulness can be defined as the degree to which the users believe that the adoption of a particular technology will heighten his/her work performance. It is established as one of the primary factors influencing the attitude toward the use of an information system (Fred D. Davis, 1989). In the view of the literature (Lee, 2008), perceived usefulness of a new technology system refers to the level to which users believe that the new technology system is provided with a positive use-performance relationship. Some found through research that a technical system with high perceived practicality needs to persuade users that the technical system has an energetic use performance relationship (Fred D. Davis, 1989). This includes shortening the time it takes to complete tasks and increasing efficiency and accuracy (T. Teo et al., 2008). Perceived usefulness also refers to the extent to which a person believes that using technology will increase his/her productivity (Davis et al., 1989). Perceived ease of use, on the other hand, means the extent to which a person believes that using technology will be relatively free. Davis et al. (1989) hypothesize that perceived ease of use has an impact on perceived usefulness, but only in this direction, not the other way around. This is because perceived usefulness relates to the overall impact of technology use on job performance (process and outcome), whereas perceived ease of use relates to the process of using the technology itself (Teo & Noyes, 2011).

### 2.1.9 Perceived expectation match

The anticipation-confirmation theory (ECT) by Oliver (1980) is largely responsible for the notions of expectation and expectation confirmation. The research of consumer satisfaction is on basis of the ECT hypothesis. Consumer happiness and post-purchase behaviors, as well as general service marketing, are all investigated using this method (Bhattacherjee, 2001).

In the repeated purchase process of consumers, according to Oliver (2002), consumers form a pre-purchase expectation about the product they want to buy before purchase, which influence their willingness to buy. After purchase, they form cognition of product performance based on actual use experience, and judge whether they are satisfied with the product based on the comparison result of the expectation before purchase. In this regard, satisfaction becomes a key criterion for repeat purchases or usage. According to Oliver, there are three stages in the purchasing process: pre-purchase, first purchase, and repeat purchase (Oliver, 2002).

## 2.2 Background of Online Communities

The research on "virtual communities" began before the Internet appeared. In 1965, scholars described the virtual community in a science fiction style. The real research on virtual communities started when the German sociologist Rheingold first proposed the concept of "virtual communities" on the Internet in 1993. Due to the limited popularization of the Internet, the research on virtual communities in academic circles was not very popular before 2004. During the 11 years from 1993 to 2004, only 35 academic papers on virtual communities could be accessed. The literature in this period was mainly about basic research on virtual communities, including research on the definition, classification, value, and community members of virtual communities. Since 2004, scholars have developed a spurt of research on virtual communities. Because early studies mostly equated virtual communities with online communities, most of the definitions of virtual communities did not express the virtual characteristics of this concept. From the management's point of view, a virtual community is a collection of individuals who have never met but have common goals and utilize cyberspace interactive communication as the primary way of forming connections, exchanging information, having fun, or performing transactions in the economy (Gupta and Kim, 2004). Virtual communities, unlike traditional communities, have their distinct qualities. Their differences are mostly reflected in the following elements when taken as a whole. The first is virtuality. In real life, members of virtual communities usually establish anonymous identities and hide their social features. They are unwilling to reveal their true identities. Many virtual community members play different roles in virtual communities and even opposite roles to those in real life. Virtuality is the essential feature of virtual communities. Therefore, any community lacking virtuality is not a virtual community. This essential feature of virtual communities reflects the obvious difference between the virtual community and SNS. The second is the non-regional feature. The term "non-regional" has two meanings, the fact that community members can come from anywhere in the globe and the fact that they congregate in a specific cyberspace to interact without being constrained by geographic location. The third feature is the intercourse that does not take place at a specific moment. In virtual communities, text communication overcomes the restrictions of conventional community communication, which are constrained by time and geography. People from all around the world can join virtual communities at any moment to talk about whatever interests them. Furthermore, the exchange's substance can continue in the form of text. The fourth is openness. Anyone who is interested in a topic in virtual communities is free to join or leave. Scholars describe virtual communities in a variety of ways based on different criteria. According to the goal of community members' engagement, Armstrong and Hagel (1996) categorized virtual communities into trading communities, interest communities, fantasy communities, and relationship communities. Trading communities aim to promote product and service transactions and to communicate transaction information. Interest communities aim to bring together people who share

a common interest in order to conduct extensive exchanges on specific topics. Fantasy communities aim to bring people who share certain fantasies together. Relationship communities aim to provide in-depth contacts for members with specific life experiences.

From the standpoint of interest, leisure communities include hobby groups, relationship groups, and fantasy groups. Corporate communities include business groups, trade groups, and e-commerce groups. Virtual communities can be divided into two types, virtual communities for small groups and virtual communities based on networks. A network virtual community is a specialized community built on a structured, loose, and dynamic relationship network in which members have a shared focus and are geographically scattered. Moreover, a group virtual community is made up of distantly related species working toward a common vision objective.

To connect online while keeping current ties, a group virtual community is created. The distinction between a group virtual community and a network virtual community is that the former's members already know one other and have deep personal ties before joining. Dholakia et al. think that network-based virtual communities can grow into group-based virtual communities when relationships between members of the same group develop and communication deepens. The group virtual community defined by Dholakia et al. (2004) has the embryonic form of SNS. According to interaction synchrony, virtual communities are divided into synchronous and asynchronous types. Synchronous virtual communities include newsgroups, mailing lists, and bulletin boards, while asynchronous ones include chat rooms, online games, and chat software (such as MSN and QQ).

### 2.3 Preliminary Study on Consumer Behaviors in the Virtual Community Environment

In terms of consumer behavior research in the virtual community environment, scholars have made some discussions in recent years from the perspectives of word of mouth and brand community participation. From the standpoint of consumer identity, Shang et al. (2006) examined the link between consumer engagement in virtual brand communities and brand loyalty. Divers are more likely than posters to inspire brand loyalty, according to the study. They use virtual brand communities to learn about product functionalities, not to satisfy emotional demands. Casaló et al. (2007) investigated the influence of customer engagement in virtual brand communities on product trust and loyalty, finding the existence of a major influence of participation in brand communities on customer product trust and loyalty. According to the findings, consumers' adoption of information is influenced by the relevancy and breadth of communication material, as well as the perceived utility of information. In addition, Lu et al. (2010) explored the origins and outcomes of trust among virtual community members, concluding the influence of consumers' confidence in transactional virtual community members on their purchase intentions.

The interactive research in the virtual community environment mainly starts from the perspective of knowledge sharing, including the research on the motivation, mechanism, value and influence on consumer behaviors of virtual community knowledge sharing. In terms of knowledge sharing motivation, domestic and foreign scholars have conducted research on the knowledge sharing motivation of various types of virtual community members. The motivation of legal specialists to participate in information sharing from the standpoint of social capital was also investigated by Wasko and Faraj (2005). C.Magesh1 et al. (2018) surveyed why nurses wanted to participate in knowledge sharing in health-care-related virtual communities. Some researchers explored the motivations of virtual community members to participate in knowledge sharing from the perspectives of sociology and group dynamics. They found that similarities, internal group identity, achievement needs, affinity needs, and power needs are the main motivation of Chinese netizens for participating in virtual communities and sharing knowledge in them. In terms of knowledge sharing mechanism, the main achievement of the predecessors is the construction of several virtual community knowledge sharing mechanism models.

Dholakia et al. (2004) developed a social influence model to encourage users to provide virtual community information. From the perspectives of cognitive theory and social capital theory, researchers developed a mechanism model influencing the amount and quality of information sharing in virtual communities. From the standpoint of trust and information adoption, a mechanism model regarding virtual community member interaction has been established. In addition, from the standpoint of desire and ability, there is also a mechanism model of knowledge exchange in virtual communities. Scholars at home and abroad have universally recognized the marketing worth of knowledge sharing in virtual communities, and believe that a further study of the knowledge sharing behaviors of interest groups may help organizations collect product demand information from present and future consumers (Gupta & Kim, 2004).

With the tourist virtual community as an example, its knowledge sharing has the value of developing a brand, forming partnerships, defining categories, lowering expenses, and receiving advantages. For websites, knowledge-sharing activities in virtual communities will strengthen the loyalty of community members to community providers, resulting in financial benefits (such as advertising income) for the providers. It also has the value of speeding up the coherence of purchasing power, acquiring perfect information, and shopping around for clients (Chou & Wang, 2009).

In addition, H. Kim et al. (2014) researched the techniques and measures to encourage knowledge exchange among virtual community members in order to build new products.

## 2.4 Research Status of Virtual Communities

Ginsburg (2000) categorized and evaluated virtual community research papers by subject. Virtual community research is split into five phases based on the development process of virtual communities: the first phase is fundamental research, which examines the basic principles of virtue communities, including the idea, definition, principle, and model of this concept. The goal of this research phase is to determine what constitutes a virtual community. The second phase focuses on technological research to aid in the creation of virtual communities, including virtual community technologies and their technical potential. The goal of this research phase is to figure out how to create virtual communities. The third phase investigates the possible use of virtual communities, such as the formation of relationships and information exchange activities. The fourth phase is the outcome assessment research, which includes an evaluation of community operation in order to gather expertise in the development of virtual communities. The fifth phase is institutionalized research, which entails naturally connecting virtual community knowledge with other fields in order to boost the potential worth of virtual communities. They made it clear that these five phases did not occur in a chronological sequence, but rather in parallel. According to the research classification of Shang et al. (2006), from the existing research, virtual community research is mostly in the first phase, that is, more basic concepts such as the connotation, characteristics and nature of virtual communities are analyzed. The second phase mainly belongs to the category of computer science, which will not be included in this paper. The third, fourth, and fifth phases have a little more literature, but the research content is broad and most of them are preliminary discussions. The themes of the third, fourth and fifth phases are the focus of this research. In other words, this paper covers the current definition, classification, and membership of virtual communities at home and abroad.

The research on virtual issues is relatively sufficient, and there is also a certain degree of research on the motivation, mechanism, and value of knowledge sharing in virtual communities. These findings lay the groundwork for future study on this issue, namely the influence of virtual community involvement on customer purchase decisions (Hara & Hew, 2007).

Table 2.1: Overview of the fitness supplements

| Authors | Country | Type of source | Summary points |
|---|---|---|---|
| Haejung Kim et al. (2014) | China | Journal article | Social identity and knowledge creation influence social shopping behaviors. |
| Anindya Ghose & Beibei Li (2015) | Asia | Journal article | Proposed a novel mobile advertising strategy. |
| Huiju Park & Hira Cho (2012) | USA | Journal article | Information search behaviors and decision-making in apparel purchase are influenced by social network online communities. |
| Hsiao et al. (2010) | China | Journal article | Explore the influence of trust on consumers' purchase intentions |
| Cheung et al. (2012) | Hong Kong | Journal article | Online social interaction affects customer information contribution behaviors. |

## 2.5 The Theory of Planned Behaviors (TPB)

TPB is a social psychology model whose main function is to understand the relationship between behaviors and attitudes (Yousafzai et al., 2010). It is thought to have evolved from the theory of reasonable action (TRA), which is commonly used by academics to figure out how people use technology and forecast how they will use it in the future. With a fully verified scientific nature, it is widely used by researchers to understand and predict the use of user technology. The notion of planned behaviors originated from Ajzen and Madden (1986). It also mentions that TBP is on basis of the assumption that humans act wisely, taking into account all relevant information and behaving implicitly. In the notion of planned behaviors, behavior control has a direct impact on the intentions to carry out the behaviors, as well as on the user's conduct once the behavior intentions are carried out (Ajzen & Fishbein, 1975).

## 2.6 The Technology Acceptance Model (TAM)

TAM is tailored specifically to model the user's acceptance of information systems. The purpose of this model is to explain the determinants of technological acceptability by tracking the influence of external factors on internal beliefs, attitudes and intentions. Fred D. Davis (1985) introduced TAM on the basis of TRA. The purpose of TAM is to explain the determinants of computer acceptability, which are a combination of multiple technologies and user behaviors in the population. TAM is a helpful instrument to describe the behavioral intents of utilizing information systems, according to Szajna (1996). Taylor and Todd (1995a) evaluated three models to determine which one could best explain how people utilize technology: TAM, TPB, and a third model derived by dissecting TPB's belief structure. The empirical test findings show that the three models describe behaviors in nearly the same way. TAM of Davis is the most commonly recognized, as well as the most basic model. With the

same predictive ability as TRA and TPB, according to studies, TAM is the most cost-effective of the three approaches. Based on the above advantages, a large number of researchers have used TAM to conduct research in many fields, such as online consumer behaviors, online learning courses, MOOCs, remote smart medical technology, network social behaviors, cloud computing in developing countries, and mobile banking applications. With the progress of the research, the TAM of Davis has been revised. The revised TAM also suggests that researchers need to consider some external factors to adapt to the research under different conditions and environments. As found by Bagozzi (2007), the revised TAM includes a dependent variable called "actual system use", but the duration between "use intentions" and "actual system use" is full of other variables and uncertainties. After a user has "use intentions", other factors may affect his/her decision to "actual system use". For this reason, Bagozzi (2007) removed the dependent variable of "actual system use" in his research

## 2.7 The Structural Equation Modeling (SEM)

SEM refers to structural analysis, covariance and structural correlation analysis, It is widely used in behaviors to investigate the relationship between observable and latent variables (Bentler, 1990). In many cases, SEM has become an important statistical tool for studying the relationship between potential structures and observed indicators, and it is widely used in market research. The purpose of SEM is to check whether the presented model matches the data. On one hand, the measurement model examines the relationship between the underlying structure and the observable indicators. On the other hand, the structural model captures the relationship between endogenous variables and exogenous variables (J. F. Hair et al., 2012). Based on the research content and variables of this research, SEM is a suitable tool for investigation and analysis.

## 2.8 Research Hypothesis Development

This research aims to explore the influence of cognitive trust, perceived usefulness, and perceived expectation match on purchase intentions in online communities.

### 2.8.1 From perceived expectation match, perceived usefulness, cognitive trust to purchase intentions, cognitive trust to purchase intentions

Previous studies have shown that the actual confirmation level of initial expectations will affect user satisfaction and repeat purchase intentions (Nejati & Moghaddam, 2013). In the interactive behaviors of the online communities examined in this paper, although consumers cannot confirm their expectations based on their personal use experience like those who have already made initial purchases, other community members respond to the product based on their own product knowledge and use experience during the interaction.

The introductions, evaluations and suggestions made can give consumers a feeling of empathy for the product to a large extent. Therefore, this paper believes that interactive behaviors in online communities can also help consumers compare initial expectations with product performance, forming a match between consumers' perceived expectations, which will affect their purchase intentions (Xiao et al., 2019). Sreb et al. (2009) considered perceived expectation match as a predictor of university faculty members' satisfaction with E-learning technology. Instructors who reported a high level of pleasure and usefulness in E-learning are more likely to report high levels of satisfaction, according to Sreb et al. (2009). According to Jung & Jung (2012), users' contentment with Internet Protocol TV (IPTV) services is favorably impacted by expectancy, perceived enjoyment, and perceived utility. This paper proposes the following hypothesis based on the above analysis:

*H1: Perceived expectation match has a significant positive impact on consumers' purchase intentions.*

A huge amount of TAM-based research has shown that perceived usefulness has an impact on users' propensity to adopt items (Alam et al., 2019). If consumers find a product valuable based on their own expertise and information offered by other members of the community, they are inclined to buy it, according to the interactive behaviors of consumers in the online communities studied in this paper.

Therefore, this paper believes that perceived usefulness will affect consumers' purchase intentions (Vidanagama, 2016). In the context of online learning, perceived usefulness refers to the degree to which students believe that using an online learning system will improve their academic performance.

As a result, perceived utility will influence their desire to accept and embrace learning methods on the Internet, either directly or indirectly through the perceived ease of use (Lee, 2008). Balog and Pribeanu (2010) investigated the influence of perceived pleasure in student adoption of desktop AR platforms using an expanded TAM. Their findings imply that perceived utility and pleasure have a considerable impact on behavioral intentions to use ARTP. As found by Wojciechowski and Cellary (2013) with an expanded TAM model, while perceived usefulness and perceived enjoyment have a significant influence on attitudes toward AR systems, perceived usefulness and perceived enjoyment have little effect on attitudes towards AR systems.

Based on the above analysis, this paper proposes the following hypothesis:

*H2: Perceived usefulness has a significant positive impact on consumers' purchase intentions.*

Hsiao et al. (2010) found that consumers' desire to utilize online bookshops is significantly influenced by cognitive trust. In the consumer interaction behaviors in online communities covered in this paper, consumers may be motivated to buy a product if they feel it is trustworthy in terms of competency and integrity based on

their own knowledge and information provided by other citizens (Sun, 2011).

Emotional trust is a feeling of safety that allows a client to recognize a trustee despite a lack of proof. Cognitive trust is an internal sense of confidence that allows a consumer to go beyond the proof and feel confident and secured in relying on a trustee. Cognitive trust is an emotional security that allows the consumer to go beyond the available evidence and feel confident and comfortable about relying on a trustee. Cognitive trust is the thoughts of a user based on strong rational reasons, whereas cognitive trust is a feeling security that allows a consumer to go beyond the existing data and feel assured and pleasant about relying on a trustee.

Cognitive trust comprises three components, based on previous research. For contrast, a consumer who has cognitive confidence in a salesperson's goodwill believes that the seller cares something about her interests than her commission since the salesperson recommends her not even to buy a skirt that simply does not fit her well. However, psychological trust is demonstrated when a consumer feels confident and comfortable because the salesperson is attractive (Komiak & Benbasat, 2003). Therefore, this paper believes that cognitive trust will affect consumers' purchase intentions. To comprehend and evaluate consumer trust in various commerce environments, one must first learn the essence of trust. Prior research on trust conceptual models has focused on cognitive trust, whereas emotional trust has been largely ignored. Because human thoughts contain both cognition and emotion, both cognitive and emotional trust are worthy of investigation. A consumer thinks and feels trust all of the time (Komiak & Benbasat, 2003).

Based on the above analysis, this paper proposes the following hypothesis:

*H3: Cognitive trust has a significant positive impact on consumers' purchase intentions.*

### 2.8.2 From perceived usefulness, cognitive trust to perceived expectation match

According to TAM, perceived usefulness is an important belief that consumers form product attitudes (Joseph et al., 1998). Generally speaking, the products consumers want to buy should be able to meet their needs, that is, products that are useful to them. In other words, consumers' expectations of a product generally include expectations of the usefulness of the product. The degree to which a person feels that employing a certain technology would improve his or her job performance is described as perceived usefulness (Davis et al. 1989). People are more likely to use an application if they feel it will improve their work performance (Davis et al. 1989). This involves reducing task completion time and increasing efficiency and accuracy. Phillips et al. (1994) believe that perceived usefulness represents potential users' subjective likelihood that using new technology would be helpful to their personal and/or organizational well-being. If consumers find a product that is more useful based on their own expertise and information offered by other members of the community, they are more likely to feel that the product meets their expectations,

according to the interactive behaviors in the online communities studied in this paper (Whitney et al., 2018). As a result, it speculates that perceived usefulness would influence consumers' perceived expectation match. Based on the above analysis, this paper proposes the following hypothesis:

*H4: Perceived usefulness has a significant positive impact on consumers' perceived expectation match.*

Duty-free shopping is a safe bet at the airport. Morgan and Hunt (1994) defined trust as a consumer's conviction in an established supplier's honesty and dependability. Trust is frequently cited as a key element influencing consumer decision-making and behaviors, as well as a decisive factor in shoppers' purchase intentions and behaviors (McCole et al., 2009). Consumers have a strong conviction that a certain retail store will deliver on its promises (Eastlick et al., 2006). Furthermore, the trustworthiness, expertise, and intentionsality of product/service providers are the sources of consumers' trust or expectation of trustworthiness (Garbarino & Johnson, 1999; Sargeant & Lee, 2004). According to Mazzocchi et al. (2008), consumers' opinions regarding the use of online bookstores are significantly influenced by cognitive trust. In general, consumers' product expectations include the assurance that the product is reliable. If consumers believe that a product is trustworthy in terms of competence and integrity based on their own knowledge and information provided by other members of the community, they are more likely to believe that the product meets their expectations, according to the interactive behaviors of consumers in the online communities studied in this paper (Pavou, 2003). Therefore, this paper believes that cognitive trust will affect consumers' perceived expectation match.

This paper suggests the following hypothesis based on the aforementioned analysis:

*H5: Cognitive trust has a significant positive impact on consumers' perceived expectation match.*

### 2.8.3 From cognitive trust to perceived usefulness

Smith et al. (2005) researched consumers' acceptance of online buying technology, discovering that cognitive trust has a major influence on users' perceived usefulness. In a study of members of an online travel community accepting the ideas of other members, Casaló et al. (2007) discovered that cognitive trust has a considerable influence on perceived usefulness. Individuals base their buying decision on a variety of value dimensions that change depending on their individual requirements and the product/service usage circumstances (Sheth et al., 1991; Kesari & Atulkar). Travelers perceive/experience different forms of values or advantages when visiting different sites, such as emotional/hedonic and cognitive/utilitarian values or benefits (Leiper, 1995). According to Gummesson (1987), consumers' value views influence relationship quality, which includes satisfaction and trust. In a circumstance of restaurant product consumption, consumers' value judgments affect

their pleasure with eating experiences and faith in the restaurant product. Consumers' intentions to repurchase and suggest the product is highly impacted by consumer satisfaction and trust established on perceived value, according to their findings (Han et al., 2018). Consumers are more likely to consider a product useful if they believe it is trustworthy in terms of competence and integrity based on their own knowledge and information provided by other members of the community, according to the interactive behaviors of consumers in the online communities studied in this paper.

As a result, this paper claims that consumers' perceived usefulness will be influenced by cognitive trust:

*H6: Cognitive trust has a significant positive impact on consumers' perceived usefulness.*

# CHAPTER 3

# RESEARCH METHODOLOGY

This chapter discusses demographic and sample selection, data collection, and research methodology, together with a reliability analysis of research instruments. As a result, the following material is included in this chapter.

## 3.1 Conceptual Framework

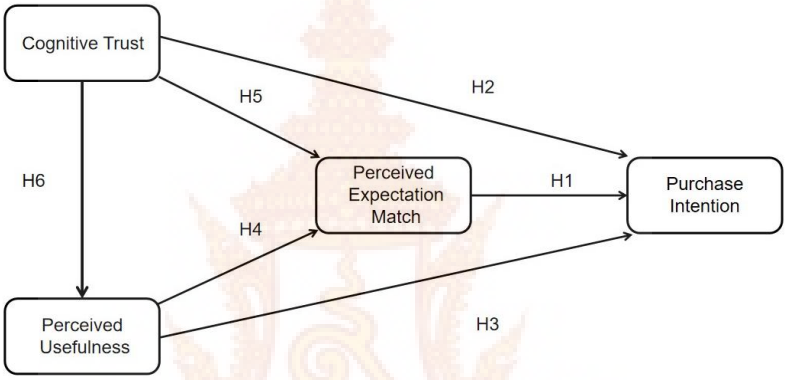



Figure 3.1: The Conceptual Framework of this research (by author)

Generally speaking, after the consumer's needs are confirmed, there are certain standards in mind about what kind of product they want to buy before buying (Oliver, 1980), that is, the consumer's "initial expectation" mentioned by Bhattacherjee (2001). When consumers' existing knowledge cannot determine what product to buy or whether a product is worth buying, they will interact with various sources of information (such as relatives, friends, netizens, salespersons, etc.) to help make purchase decisions. In order to reduce the purchase risk (Adjei et al., 2010), it comes to the "information gathering" stage of the consumer's decision-making process. Lee and Lee (2009) have proved that consumers' preferences have an important influence on their purchase intentions. In a large number of subsequent studies on TAM, scholars simply abandoned the attitude dimension in the research model based on TAM (Gefen and Straub, 1997; Venkatesh and Davis, 2000; Venkatesh and Morris, 2000), but did not propose an appropriate emotional response dimension to replace the attitude dimension. In summary, in the research situation of this paper, it may be more appropriate to replace the attitude dimension in TAM with the dimension of perceived expectation match. TAM uses the dimension of willingness to behave to describe the user's behavioral response. Since this paper examines the consumer's

commodity purchase behaviors, the dimension of purchase intentions is used to describe the consumer's behavioral response.

### 3.2 Research Method

In the questionnaire, the basic demographic data of the participants were collected from demographic questionnaires. A 5-point Likert scale was adopted to obtain quantifiable data on the influence of online communities on consumer purchase intentions. The research instruments were evaluated to check the questionnaire's validity and reliability, as well as the reasonability of the questionnaire's composition. The research instruments were assessed by 20 participants and the questionnaire questions were updated. In October of 2021, a survey was completed and data analysis was performed on Amos 24.0 and SPSS 26.0. To be more specific, the reliability statistics and demographic information of the survey data were tested using SPSS 26.0 analysis software, and the study framework was analyzed using Amos 24.0 analysis software by means of the exploratory factor analysis (EFA) and structural equation modeling (SEM).

### 3.3 Research Design

This research explored the impact of online communities on purchase intentions, cognitive trust, perceived usefulness and perceived expectation match of consumers in Chengdu, Sichuan Province, China. In order to investigate the influence of the online communities on purchase intentions, cognitive trust, perceived usefulness and perceived expectation match, survey data collection was conducted. Participants were required to complete a questionnaire. Among many types of research including exploratory research, descriptive research and contingency research, descriptive research was selected to describe the answers to research questions. The emotional or personal injury to the interviewees was not involved, nor sensitive topics or vulnerable groups such as children. The content of the interview fit the subject and will not be disclosed without the consent of interviewees. Furthermore, all interviewees agreed to participate in the interviews *via* WeChat and in person. A total of 400 questionnaires were delivered to a sample of 400 participants in Chengdu, Sichuan Province, China, and 371 valid questionnaires were retrieved for this research. Data analysis was carried out with the structural equation model.

### 3.4 Population and Sample Selection

#### 3.4.1 Population

The data used in this research were obtained through a survey of 400 consumers in Chengdu, Sichuan Province, China. All interviewees in this research agreed to participate in the survey *via* WeChat or in person. Some gifts were provided for the participants to thank for their active participation.

### 3.4.2 Sample size

At a confidence level of 95 percent and accuracy levels of 0.05, an equation provided by Yamane (1967) was used to calculate sample size. The minimum sample size was 371, while 400 was finally set as the sample size of this research.

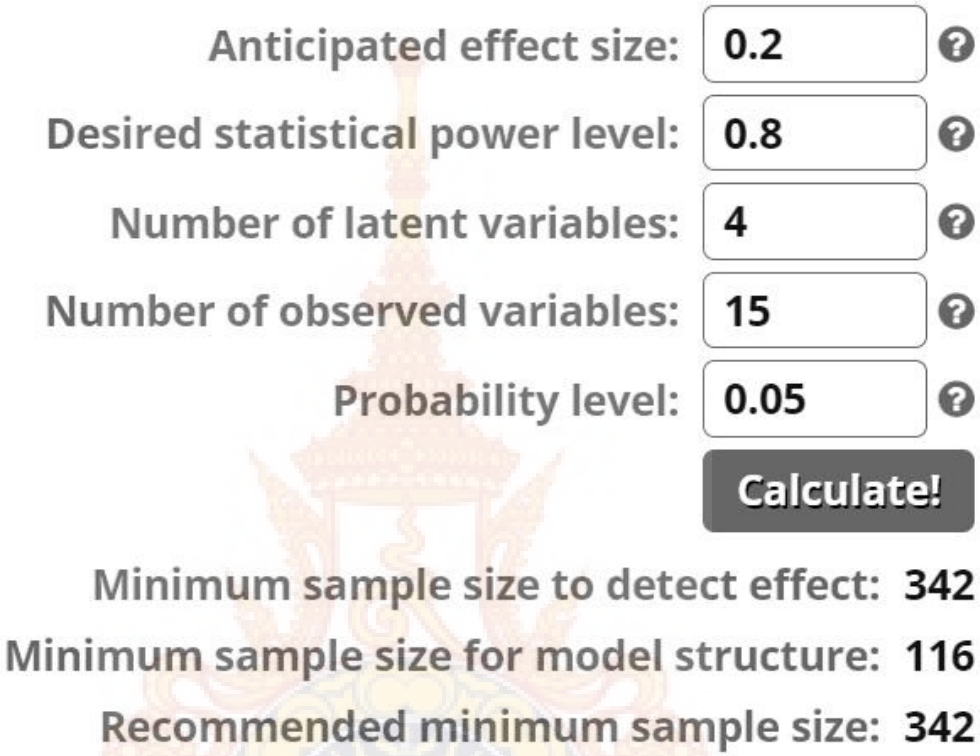



Figure 3.2: Sample size of this research
Source: https://www.danielsoper.com/statcalc/calculator.aspx?id=89

## 3.5 Design of Questionnaire and Scale

A questionnaire survey, i.e., a collection of data created by relevant literature reviews, was carried out. The questionnaire questions can be divided into three parts.

Part 1: Closed-end questions about the demographic characteristics of the participants, including gender, and income

1. Your gender:
□ male
□ female

2. Your age:
□ < 20 years old
□ 20-35 years old
□ 36-50 years old

□ >50 years old

3. Your education:
□ High school / technical secondary school and below
□ College/Undergraduate
□ Master degree and above

4. Community type
□Virtual community
□ SNS

5. Your Job
□ Student
□ Manager
□ Technical/R&D personnel
□ Production staff
□ Administration staff
□ Salesperson
□ Professional
□ Other

Part 2: 14 closed-ended answer questions about 5 factors that influence purchase intentions

Table 3.1: Number of questionnaires for 6 factors that affect purchase intentions

| | |
|---|---|
| Perceived usefulness | 4 Questions |
| Cognitive trust | 4 Questions |
| Perceived expectation match | 4 Questions |
| Purchase intentions | 3 Questions |
| Total | 15 Questions |

A Five-point Likert Scale was used here to measure the level of agreement.

Table 3.2: Five-point Likert Scale

| | |
|---|---|
| Strongly Agree | 5 points |
| Agree | 4 points |
| Neutral | 3 points |
| Disagree | 2 points |
| Strongly Disagree | 1 points |

The further meaning of each question mentioned in the questionnaire is illustrated below.

Table 3.3: Summary of sources for questionnaire items

| | | |
|---|---|---|
| Perceived usefulness | Practical, play a role in my study/life/work | |
| | Meet my actual needs | |
| | Improve my study/life/work quality | |
| | In short, this product is useful for me. | |
| Cognitive trust | This product is very professional in design, workmanship, etc. | |
| | This is a powerful product. | |
| | The company to which this product belongs is a reputable company. | |
| | The company to which this product belongs is a responsible company. | |
| Perceived expectation match | This product is very similar to what I imagined. | |
| | This product meets my standards. | |
| | This product meets my inner preference. | |
| | This product is what I want. | |
| Purchase intentions | I am willing to buy this product. | |
| | I plan to buy this product. | |
| | I will buy this product. | |

According to the opinions of the three experts, as online shopping becomes more popular, it is critical to investigate the elements that influence consumers' views and desire to purchase online. The questionnaire was generated from the classic questionnaires of the first two researchers, and the questions were in line with the goal of this research and future research. Each project was reviewed and rated by specialists during the implementation of the IOC, with a score of 1, 0, and -1. A score of 1 suggested it could measure the objectives and contained useful material. A score of 0 indicated that it might be used to determine intended usage. A score of -1 revealed the item was of low quality and had not yet been put through its paces. After the evaluation of all items was completed, the three experts entered each item's score into the formula, which was determined using the item's objective appropriateness index (Litwin, 1995). In summary, the indications and calculation components of the project objective alignment score were described in this project. There are a total of 15 entries and 4 constructions. The highest score was 1 and the lowest was 0.67, which was reserved. As a result, all of the items in this research had appropriate content validity.

Table 3.4: Expert information of IOC test

| Name | Academic degree | Major field | Experience |
|---|---|---|---|
| Ran Zhao | Doctoral candidates | Marketing major | 8 years |
| Yan Zeng | Ph. D | Marketing major | 7 years |
| Jiakui Zhong | Ph. D | Marketing major | 10years |

Source: Constructed by author

### 3.6 Collection of Data

Exploratory factor analysis (EFA) was performed on a 15-item scale using varimax rotation. All four elements were preserved after EFA was fused under one factor. Four items in perceived usefulness, 4 items in Cognitive trust, 4 items in perceived expectation match, and 3 items in purchase intentions were retained.

### 3.7 Research Methodology

#### 3.7.1 Reliability test

To verify the reliability of each variable, the Cronbach's alpha test was carried out. A musical instrument has strong reliability if it has a minimum alpha score of 0.6 and an overall dependability of 0.7 or above (Bagozzi, 1982). The higher the accuracy factor, the more certain you may be in your measurement. DeVellis (1991) concluded 0.600.65 (not recommended), 0.650.70 (lowest acceptable value), 0.700.80 (excellent), and 0.800.90 (very good). As a result, a decent reliability scale or questionnaire should fall within the range of 0.70 to 0.80. The sub-scale should be over 0.70, although anything between 0.60 and 0.70 is good.

Table 3.5: Criteria of Reliability

| **Cronbach's Alpha** | **Desirability Level** | **Reliability Level** |
|---|---|---|
| Less than 0.30 | Unacceptable | Very Low |
| 0.30-0.49 | Poor | Low |
| 0.50-0.69 | Fair | Medium |
| 0.70-0.79 | Good | High |
| 0.80-1.00 | Excellent | Very High |

#### 3.7.2 Convergent validity

All standardized factor loads in the project that surpass the minimal criterion of 0.50 must be used to evaluate the measurement model's convergence efficiency (FORD et al., 1986). All of the constructions exhibit satisfactory composite reliability between 0.815 and 0.969 (Bagozzi & Yi, 1988). The extracted average variance (AVE) was higher than the suggested limit of 0.50, showing the existence of convergent validity (Fornell & Larcker, 1981). Furthermore, the reliability values on the scale

were much greater than 0.7. As a consequence, the model met the convergent validity requirements by Hair et al (2010).

### 3.7.3 Discriminant validity

The model's discriminant validity was evaluated using the methodologies proposed by Fornell and Larcker (1981). The AVE values of constructs were all higher than their matching squared multiple correlation values. indicating the discriminant validity of all of the constructs.

### 3.7.4 Path analysis

The main purpose of this research is to understand the influencing factors of online communities on consumer attitudes and purchase intentions. To analyze the relationships in the research framework, an SEM-based path analysis was carried out using SPSS 26.0 and AMOS 24.0.

### 3.7.5 Confirmatory factor analysis

Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) are two types of factor analysis. CFA must be premised on a certain theoretical viewpoint or conceptual framework. Then it should be tested mathematically to see if the econometric model obtained from that theoretical perspective is adequate and logical. As a result, EFA seeks to establish the construct validity of the scale or questionnaire, whereas CFA works to assess its logic and authenticity. To ensure that the model was adequate for data with a broad sample data area, a structural equation model was created (Hair et al., 2014).

Fit measures are frequently used in SEM analysis to assess and choose models. Typical examples are $X^2/DF$, TLI, GFI, AGFI, NFI, NFI, CFI, and RMSEA. The test reference values for each fit measure are listed in the table below.

Table 3.6 Fit metrics of SEM

| Index | Acceptable Value | Source |
|---|---|---|
| Tucker–Lewis index (TLI) | TLI > 0.90 | Vandenberg & Scarpello (1994) |
| Normed fit index (NFI) | NFI >0.90 | Bentler & Peter (1990) |
| Comparative fit index (CFI) | CFI > 0.90 | Hair et al. (2010) |
| Goodness-of-fit index (GFI) | GFI ≥ 0.80 | Forza & Filippini (1998) |
| Adjusted goodness-of-fit index (AGFI) | AGFI ≥ 0.80 | Forza & Filippini (1998) |
| Root mean square residual (RMR) | RMR<0.05 | Hair et al. (2006) |

| | | |
|---|---|---|
| Root-mean-square error of approximation (RMSEA) | RMSEA < 0.08 | Browne & Cudeck (1993) |
| The ratio of the chi-square value to degree of freedom (CMIN/DF) | CMIN/DF<3 | Hair et al. (2006) |

# CHAPTER 4

# DATA ANALYSIS

## 4.1 Reliability Test of Research Instrument

The changes in consumer interaction brought about by the emergence of online communities have attracted the attention of academia and enterprises, and online communities have become the main battlefield for future promotions. Under this situation, it is of great significance to examine the impact of online community interaction on consumers' purchasing decisions from both practical and theoretical perspectives. This research is a quantitative type, aiming to construct the interactive behavior mechanism model of consumers' purchase decisions in the online community environment.

The sample survey was incomplete. This survey method surveys some units of all participants and estimates and extrapolates all responses. In this research, online and offline questionnaires were used to collect the necessary information. Communication with the target sampling group is a simple method. The researchers distributed the questionnaires *via* online chat, emails, and paper copies. Cronbach's alpha test was used to evaluate the reliability of each variable question. The reliability assessment was defined as Cronbach's alpha. A tool is said to have good reliability if it has a minimum alpha score of 0.6 and an overall reliability of 0.7 or higher (Bagozzi & Yi, 1988). Therefore, a pre-test is necessary to check whether an instrument is suitable for the research.

### 4.1.1 Exploratory factor analysis

Table 4.1: KMO and Bartlett's test

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .810 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 1950.770 |
| | df | 730 |
| | Sig. | .000 |

Notes: N=371

For all of the scales, KMO values were over 0.70, and the total variation explained by all of the constructs was greater than 60% (Hair et al., 2010).

Table 4.2: Rotation component matrix

| Variable | Factor | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| PU1 | 0.720 | | | |
| PU1 | 0.788 | | | |
| PU3 | 0.772 | | | |
| PU4 | 0.641 | | | |
| CT1 | | 0.705 | | |
| CT2 | | 0.799 | | |
| CT3 | | 0.742 | | |
| CT4 | | 0.691 | | |
| PI1 | | | 0.796 | |
| PI2 | | | 0.700 | |
| PI3 | | | 0.808 | |
| PEM1 | | | | 0.678 |
| PEM2 | | | | 0.753 |
| PEM3 | | | | 0.740 |
| PEM4 | | | | 0.722 |

Note. The extraction method was Varimax, N=371.

The values obtained in all of the tests were above the specified minimum, showing that the data were sufficient for the retrieved components. During EFA extraction, Varimax was employed for estimation. Even though the number of variables with the greatest loadings on each factor was the smallest, Varimax increased the variation of loadings within factors. Because no item loaded across variables, the EFA pattern matrix proved discriminating validity.

Table 4.3: Communalities

| | Initial | Extraction |
|---|---|---|
| PU1 | 1 | 0.691 |
| PU1 | 1 | 0.699 |
| PU3 | 1 | 0.703 |
| PU4 | 1 | 0.601 |
| CT1 | 1 | 0.691 |
| CT2 | 1 | 0.733 |
| CT3 | 1 | 0.677 |
| CT4 | 1 | 0.620 |
| PI1 | 1 | 0.756 |
| PI2 | 1 | 0.626 |
| PI3 | 1 | 0.733 |
| PEM1 | 1 | 0.762 |
| PEM2 | 1 | 0.862 |

| | | |
|---|---|---|
| PEM3 | 1 | 0.805 |
| PEM4 | 1 | 0.785 |

Note. The extraction method is Varimax.

After the modifications to the project were completed, Cronbach's alpha test was carried out again. This test is often used to establish the scale's reliability by testing all of the items in each component (Gaskin, 2016). Because the alpha values were above the desired value of 0.700, all of the items for each factor had a high level of dependability, as shown in Table 4.4.

Table 4.4: Cronbach's Alpha of construct scales

| Factor | | Cronbach's α |
|---|---|---|
| Perceived usefulness | PU1 | 0.861 |
| | PU2 | |
| | PU3 | |
| | PU4 | |
| Cognitive trust | CT1 | 0.856 |
| | CT2 | |
| | CT3 | |
| | CT4 | |
| Perceived expectation match | PEM1 | 0.852 |
| | PEM2 | |
| | PEM3 | |
| | PEM4 | |
| Purchase intentions | PI1 | 0.885 |
| | PI2 | |
| | PI3 | |

Notes: N=35

It is found that the Cronbach's Alpha values of all scales were above 0.80, and all items met the requirements.

**4.2 Census data Analysis**

Table 4.5: Demographic data

| | Variables | N | % |
|---|---|---|---|
| Gender | Male | 164 | 44.21% |
| | Female | 207 | 55.79% |
| Age | < 20 | 82 | 22.1% |
| | 20-35 | 129 | 34.8% |
| | 36-50 | 113 | 30.5% |
| | >50 | 47 | 12.6% |
| Education | High school / technical secondary school and below | 122 | 32.88% |
| | College/Undergraduate | 169 | 45.55% |
| | Master degree and above | 80 | 21.57% |
| Community type | Virtual community | 192 | 51.75% |
| | SNS | 179 | 48.25% |
| Job | Student | 112 | 30.19% |
| | Manager | 44 | 11.86% |
| | Technical/R&D personnel | 65 | 17.52% |
| | Production staff | 23 | 6.20% |
| | Administration staff | 21 | 5.65% |
| | Salesperson | 10 | 2.70% |
| | Professional | 10 | 2.70% |
| | Other | 86 | 23.18% |

Notes: N=371

As shown in Table 4.5, approximately 55.79% (N=207) of the participants were females, while males accounted for 44.21% (N = 164). About 22.1% (N=82) of the participants were younger than 20 years old, and 34.8% (N=129) were 20-35 years old. Participants aged 36-50 years old accounted for 30.5% (N=113), and those aged over 50 years old accounted for 12.6% (N=47). Among the participants, 122 (32.88%) were from high school / technical secondary school and below, 169 (45.55%) received college / undergraduate education and 80 (21.57%) had a master's degree and above. The number of participants using virtual communities was 192, accounting for 51.75%. The number of participants using SNS was 179 (48.25%). In terms of the job, there were 112 (30.19%) students, 44 (11.86%) managers, 65 (17.52%) technical/R&D workers, 23 (5.65%) production workers, and 21 (5.60%) administration workers, 10 (2.70%) salesperson, 10 (2.70%) professionals, and 86 (23.18%) participants with other jobs.

### 4.3 Measurement Model

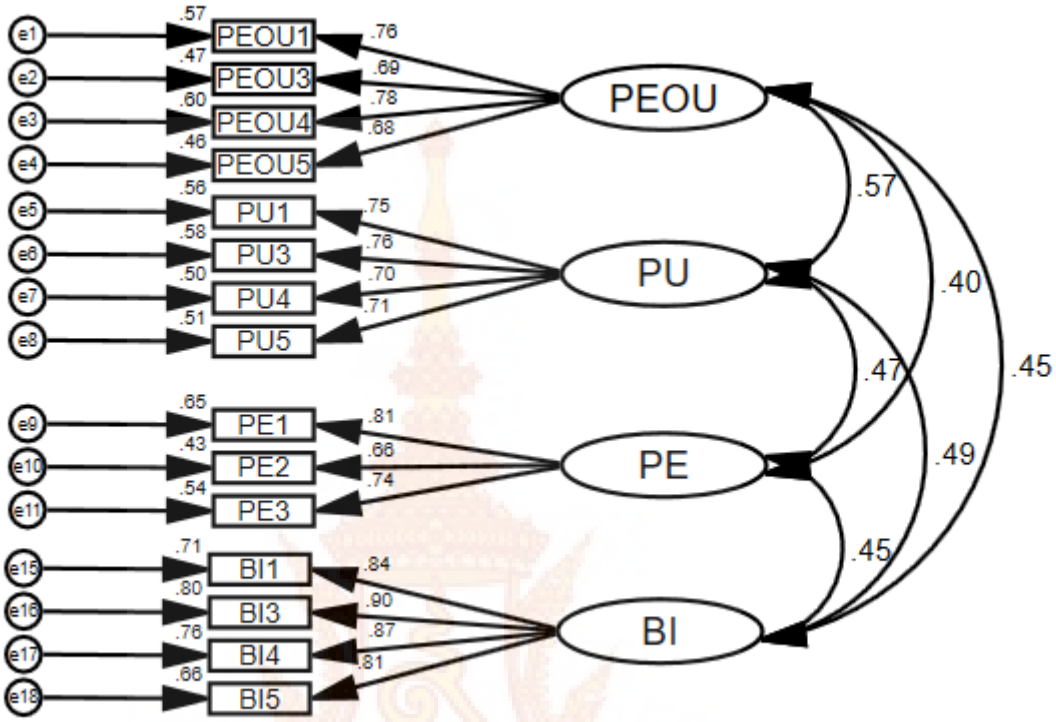



Figure 4.1: Measurement Model with Standardized Loadings (by author)

Table 4.6 Computation of degrees of freedom

| |
|---|
| Minimum was achieved |
| Chi-square = 1098.757 |
| Degrees of freedom = 472 |
| Probability level = .000 |

Notes: N=371

Table 4.7: Model fitness

| Goodness of fit | Recommended values | SEMs value | Remarks |
|---|---|---|---|
| RMSEA | ≤0.10 | 0.082 | Good fit |
| SRMR | <0.08 | 0.060 | Good fit |
| CFI | ≥0.90 | 0.704 | Acceptable fit |
| NFI | ≥0.90 | 0.786 | Acceptable fit |
| CMIN/df | ≤ 3.0 | 2.27 | Good fit |
| GFI | ≥0.90 | 0.771 | Acceptable fit |

Notes: N=371

Overall, the survey results demonstrated that the measurement model was a good fit, as predicted by Hair et al. (2010). The chi-square of 1098.757, df of 472, p.000, a comparative fit index (CFI) of 0.704, a goodness of fit (GFI) of 0.771, a normed fixed index (NFI) of 0.786, and the standardized root-mean-square residual (SRMR) of 0.060 suggested that the measurement model was a good match, meeting the requirement before the evaluation of the structural model's causal routes.

### 4.3.1 Convergent validity

Table 4.8: Measurement statistics of construct scales

| Factor | | t-value | Mean | Cronbach's α | P | C.R. | AVE |
|---|---|---|---|---|---|---|---|
| Perceived usefulness | PU1 | 37.657 | 3.955 | 0.861 | | 0.92 | 0.72 |
| | PU2 | 34.587 | | | ** | | |
| | PU3 | 35.607 | | | ** | | |
| | PU4 | 37.887 | | | ** | | |
| Cognitive trust | CT1 | 25.688 | 3.912 | 0.856 | | 0.90 | 0.64 |
| | CT2 | 26.657 | | | ** | | |
| | CT3 | 23.194 | | | ** | | |
| | CT4 | 23.673 | | | ** | | |
| Perceived expectation match | PEM1 | 26.641 | 3.893 | 0.852 | | 0.91 | 0.70 |
| | PEM2 | 34.877 | | | ** | | |
| | PEM3 | 24.353 | | | ** | | |
| | PEM4 | 50.055 | | | ** | | |
| Purchase intentions | PI1 | 55.224 | 4.088 | 0.885 | | 0.93 | 0.82 |
| | PI2 | 35.697 | | | ** | | |
| | PI3 | 69.047 | | | ** | | |

Notes: Data from the measurement model and the revised measurement model, ** $p <$ 0.01, N=371.

The standardized factor loads of all items exceeded the minimal criterion of 0.50 after the assessment of the measurement model's convergence validity. For all of the constructions, the composite reliabilities were at desired levels. The extracted average variance (AVE) was higher than the acceptable limit of 0.50, indicating convergent validity, and the scale's reliability score was substantially higher than 0.7. As a result, the model met the convergence validity criteria (Hair et al., 2010).

### 4.3.2 Discriminant validity

To evaluate discriminant validity, the square root of the mean variance extracted for each factor was compared to the correlation coefficient between factors (Fornell & Larcker, 1981). Table 4.11 summarizes the results of the discriminant validity test. For all factor pairs, the square root of the extracted mean variance for one factor exceeded the correlation coefficient between the subject factor and the other factors.

Table 4.9: Discriminant validity of the constructs

| Constructs | AVE | PU | CT | PEM | PI |
|---|---|---|---|---|---|
| PU | 0.72 | **0.849** | | | |
| CT | 0.64 | 0.783** | **0.800** | | |
| PEM | 0.70 | 0.762** | 0.750** | **0.837** | |
| PI | 0.82 | 0.753** | 0.763** | 0.770** | **0.905** |

Note: The square root of the average variance extracted was used to calculate diagonal values. The correlations between the components were represented by the remaining values, * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Each dimension's square root of AVE values was larger than its correlation coefficient in the other dimensions, showing excellent differential validity. Therefore, the scale presented good construct validity. Furthermore, according to the expressions in Chinese language and the research condition of this work, the scales of various variables were gathered and updated based on prior research findings. The questionnaire was also verified before formal investigation. Therefore, the content validity and surface validity of the scale were guaranteed. Overall, the validity of the measurement scale was acceptable.

## 4.4 Hypotheses Test

The primary goal of this research is to better understand the link between online communities and consumer purchase intentions, as well as to examine consumer behaviors. In order to analyze the relationship in the research framework, an SEM-based path analysis was performed. The following table shows the standardized estimation coefficients and hypothetical results for each path.

Table 4.10: Results of SEM-based path analysis.

| **Relationships** | **Hypotheses** | **Std.(*β*)** | **Unstd.** | ***p*-value** | ***R²*** | **Result** |
|---|---|---|---|---|---|---|
| Perceived expectation match >> Purchase intentions | H1 | 0.353*** | 0.301 | 0.001 | 0.58 | Supported |
| Cognitive trust >> Purchase intentions | H2 | 0.264*** | 0.279 | 0.001 | | Supported |
| Perceived usefulness >> Purchase intentions | H3 | 0.289*** | 0.271 | 0.001 | | Supported |
| Perceived usefulness >> Perceived expectation match | H4 | 0.452*** | 0.467 | 0.001 | 0.46 | Supported |
| Cognitive trust >> Perceived expectation match | H5 | 0.432*** | 0.463 | 0.001 | | Supported |
| Cognitive trust >> Perceived usefulness | H6 | 0.471*** | 0.482 | 0.001 | 0.31 | Supported |

Note: *$p$< .05; **$p$< .01; ***$p$< .001; N=417.

Analysis of the data using the SEM program showed that all structural path coefficients were positive and significant, indicating a better understanding of consumers' purchase intentions. According to standardized estimates, H1 of perceived expectation match having a significant and huge impact on purchase intentions was verified ($\beta$=0.353, $p$<0.001). Further analysis revealed that cognitive trust had a significant positive effect on purchase intentions ($\beta$=0.314, $p$<0.001), supporting H2. Perceived usefulness had a significant positive effect on purchase intentions and perceived expectation match ($\beta$=0.289, $p$<0.01; $\beta$=0.452, $p$<0.01), supporting H3 and H4. Data analysis also confirmed that cognitive trust had a significant positive impact on perceived expectation match and perceived usefulness ($\beta$=0.432, $p$<0.01; $\beta$=0.4471, $p$<0.01), supporting H5 and H6.

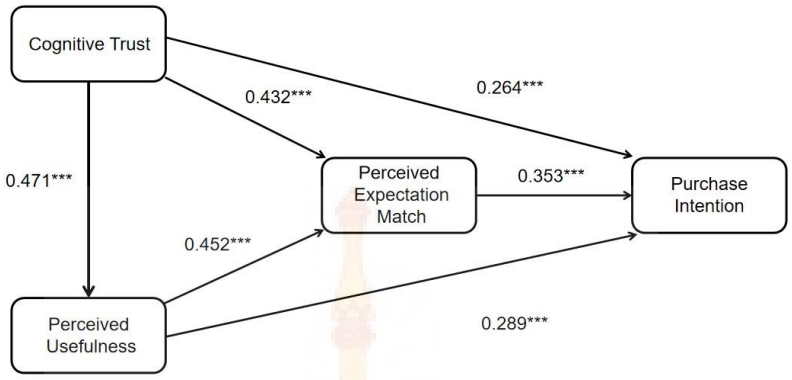



Figure 4.2: Output of the structural model with standardized estimates (by author)

Note: *$p$< .05; **$p$< .01; ***$p$< .001; N=417.

# CHAPTER 5

# CONCLUSION AND DISCUSSION

## 5.1 Conclusion and Discussion

In virtual communities, on the one hand, due to the virtual nature of the interactive objects, consumers have a sense of distrust in the entire interactive activity. This leads them to attach importance to diversified information about the elements of the interactive activity and try to reduce risks through such information. On the other hand, due to the anonymity and openness of virtual communities, more information and opinions can be obtained, which may be the reason why a large number of consumers are willing to use virtual communities to interact despite their disadvantages. Hence, consumers attach great importance to the interactive atmosphere.

In terms of RQ1, whether perceived usefulness has a significant impact on perceived expectation match, the author found that perceived usefulness has a significant impact on perceived expectation match.

In terms of RQ2, whether cognitive trust has a significant impact on perceived usefulness, the author found that cognitive trust has a significant impact on perceived usefulness.

In terms of RQ3, whether cognitive trust has a significant impact on the perceived expectation match, the author found that cognitive trust has a significant impact on the perceived expectation match.

In terms of RQ4, whether perceived expectation match has a significant impact on purchase intentions, the author found that perceive expectation match has a significant impact on purchase intentions.

In terms of RQ5, whether perceived usefulness has a significant impact on purchase intentions, the author found that perceived usefulness has a significant impact on purchase intentions.

In terms of RQ6, whether cognitive trust has a significant impact on the purchase intentions, the author found that cognitive trust has a significant impact on the purchase intentions.

In SNS, most of the interaction objects of consumers are real interpersonal relationships, and consumers know real identities of each other and may have some understanding of them. The possible reason why consumers do not choose to use other communication methods such as directly asking the opinions of people with close relationships, but to interact in the SNS community, on the one hand, is that people with strong relationships cannot solve their problems on this issue. Their effort to look for more people with weak ties to interact, on the other hand, shows that consumers may want to get more information and opinions through the SNS platform

to make better decisions. The research on social capital in the SNS environment also demonstrates that although users can obtain bridging social capital (weak ties) and cohesive social capital (strong ties) on SNS at the same time, weak ties have a significant positive effect on their willingness to participate repeatedly, while strong ties do not. Therefore, the strength of the relationship is not important to the consumer, but whether the person sending the consumption is professional and experienced is important. In addition, because consumers want to listen to more voices, they also value the interactive atmosphere. In SNS, you should arrange your product engineers to participate in community activities as community managers, and train amateur engineers to participate in solving problems of netizens as assistants of community managers. In virtual communities, opinion leaders should be encouraged to spend more time on the interaction in virtual communities. According to the research results, in the two community environments, the quality of sources is an important dimension that affects consumers' psychological responses. In SNS featuring real names, professional product engineers can bring reliable information to consumers. Enterprises need to arrange engineers to participate in product interaction activities in a timely manner. In a virtual community characterized by anonymity, the most trusted sources are generally those who rely on their strength to reach the position of opinion leaders. Businesses can encourage and motivate them to interact with consumers in virtual communities and then help consumers make purchase decisions. Notably, in the process of motivating the opinion leaders, it is necessary to maintain the independence of the opinion leaders and ensure that they are introducing the real information of the product. False product information will only cause consumers to question opinion leaders and enterprises (that is, opinion leaders are considered to be the "trust" of enterprises), arouse consumers' disgust, and at the same time, lead to the loss of the community status of opinion leaders.

### 5.2 Limitations

Although this paper reveals some meaningful conclusions, there are still some shortcomings, which need to be improved in future research: First, this paper innovatively adopts the perspective of communication elements to systematically propose the dimension of interaction.

Most of the measurement indicators in the measurement of interaction dimensions in this paper were collected from previous literature, and the entire measurement questionnaire was completed after consulting experts. As a pre-research, the research was based on the consideration of simplicity. Secondly, due to the comparison of the research models constructed in this paper, and the focus was put on the online community type as the moderator to compare the impacts of interaction between virtual communities and SNS environments on consumers’ purchase intentions.

The testing of other moderating variables, such as gender, and product type was not involved, despite its importance for this research. The practical application of the

conclusions brings some limitations.

Third, for the purpose of exploratory research, only the Internet was used as the background to discuss the mechanism of interaction in the online community environment on consumers' purchase intentions, and compare virtual communities characterized by virtual interpersonal relationships with the actual communities. The influence of interaction on customers' purchase intentions differs between the two dominant online community settings, SNS represented by interpersonal relationships and SNS largely defined by real-world communities. This, in fact, restricts the implementation of the research conclusions in this paper.

### 5.3 Research Contributions

This paper examines the influence of consumer interaction on their purchase intentions in an online community environment. Now that the online community has become a new and commonly used consumer interaction platform, the research in this paper has made theoretical contributions in the following four aspects:

First, a plan-interaction-response model describing consumer psychology and behavioral responses after interactive activities were constructed, expanding the connotation and scope of use of TAM, and providing new theoretical guidance for discussing consumer demand satisfaction. In existing research, it is difficult to find an appropriate theoretical model to explain consumers' psychological and behavioral responses after interaction in online communities. Based on the TAM, this paper removed the "perceived ease of use" variable with strong technical stigma, introduced the "cognitive trust" variable, and replaced the "attitude" dimension with "perceived expectation match" dimension according to the expectation theory. Hence, a plan-interaction-response model was constructed to explain the consumer response process after interaction, with perceived usefulness, cognitive trust, and perceived expectation match as the antecedents of consumer purchase intentions, and perceived usefulness and cognitive trust as the precursors of perceived expectation match. In addition, cognitive trust will affect perceived usefulness.

Second, the creation of a mechanism model for the impact of online community engagement on consumers' purchase intentions gives theoretical direction for more systematic and thorough explanations of how online community involvement impacts consumers' purchase intentions. To construct consumers in an online community environment, this paper used stimulus variables (such as source quality, relationship strength, information quality, and interaction atmosphere), psychological response variables (such as perceptual usefulness, cognitive trust, and perceptual expectation matching), and behavioral response variables (such as purchase intentions) in the entire cross-reaction chain.

### 5.4 Practical Contributions

Marketing academia and business circles have long recognized that information from private social relationships often plays an important role in consumers' purchasing decisions, and the emergence of online communities provides consumers with new and convenient channels for obtaining information from private social relationships. The changes in consumer interactions brought about by the emergence of online communities have attracted the attention of enterprises. Under the situation that such online communities have become the main battlefields of corporate marketing in the future, the results of this paper are intended to be used by those who are concerned about online community marketing. The enlightenment of the enterprise is as follows:

First, it is essential to figure out what consumers' inner expectations are. According to the research results, perceived expectation match is an important antecedent that affects purchase intentions. In the past, marketing theories and practices emphasized the need to keep up with consumers' demands in terms of product performance, quality, and service, but often ignored the investigation of consumers' inner expectations. The research conclusions of this paper show that the practice of enterprises should be strictly controlling product performance, quality and service on the basis of guiding and satisfying consumers' inner expectations. In particular, in the process of promoting products, it is necessary to first guide and satisfy consumers' inner expectations.

Second, as the center of interactive product advertising in online communities, consumers' cognitive trust must be enhanced. According to the findings, whether it is in a virtual community or on a social networking site, consumers' perceptions of product usefulness are influenced by cognitive trust. As a result, many consumers connect with online communities in order to gain a better grasp of a product's capabilities and reliability. From the standpoint of companies, it is increasingly important to promote the sorts of goods that consumers choose to connect with in online communities in order to improve consumers' cognitive trust.

Third, in SNS, companies must set product engineers to participate in community activities as community managers, and train amateur engineers to solve netizens’ problems as assistants of community managers. In virtual communities, they must encourage opinion leaders to be in virtual communities and interact with consumers on the Internet. As shown by the research results, in the two community environments, the quality of information sources is an important dimension that affects consumers' psychological responses. In SNS characterized by real names, professional product engineers can bring reliable information to consumers. Enterprises need to arrange engineers to participate in product interaction activities with consumers in a timely manner. The most trustworthy source of information in virtual communities characterized by anonymity is usually those who have risen to the position of opinion leader *via* strength. Companies may encourage and motivate employees to engage with consumers in virtual communities and assist them in

making product purchases. It should be emphasized that maintaining the independence of opinion leaders during the process of motivating them is vital to ensure that they introduce the genuine information about the product. Consumers will challenge opinion leaders and corporations if they get false product information, and they will be disgusted. Furthermore, it will eliminate the standing of opinion leaders in the community.

Fourth, community managers and employees should make friends in virtual communities, build a wide network of relationships, and continuously improve the quality of the network. As shown in the research results, in the virtual community environment, relationship strength has a significant impact on consumers' cognitive trust and perceived usefulness. This means that corporate community managers and employees should pay attention to making friends in virtual communities, and improve the quality and effectiveness of interactions with consumers in the community by building high-quality relationships.

Fifth, companies should use online community platforms to understand consumer needs. Consumers are willing to communicate their purchase needs through online communities, and the research conclusions of this paper show that such interactive behaviors can indeed have a substantial impact on consumers' purchase intentions. This kind of pre-purchase interaction activity in online communities is a rapid way for the collection of information on all aspects of the product and the display of attitudes from different consumers. For companies, this is a good opportunity for them to understand consumer needs, find new product ideas, and discover the deficiencies of existing products: What products do consumers prefer to interact? What kind of product do they need? Can existing products meet their expectations? What is their dissatisfaction with existing products? How do they view competitors' products? This information can be obtained by tracking consumer interaction information on online communities, providing a decision basis for companies to collect information on consumer demand and formulate marketing strategies.

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# APPENDICES

## Appendix 1: Questionnaire's Cover Page

Hello! I am a postgraduate student of Rajamangala University of Technology Krungthep. I would like to know some information about your fitness club. Please take about 10 minutes to fill in this form. Your true and accurate answers are very important to our research. You only need to fill in according to your actual situation and your ideas. This information is limited to academic research and will not have any negative impact on you. Hope to get your strong support and help! Thank you very much!

**Part A**: Closed answer questions about the demographic characteristics of the participants, including gender, and income.

1. Do you have any online shopping experience?

□ Yes
□ No

2. Your gender:

□ male
□ female

3. Your age:

□ < 20
□ 20-35
□ 36-50
□ >50

4. Your education:

□ High school / technical secondary school and below
□ College/Undergraduate
□ Master degree and above

5. Community type

□Virtual community
□ SNS

6. Your Job

□ student
□ manager
□ Technical/R&D personnel
□ Production staff

□ Administration staff
□ Salesperson
□ professional
□ other

**Part B**: Closed-ended answer questions about 5 factors that influence purchase intentions, including:
Please write a '√' in the box to show you agree or disagree with the following statements 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree.

| **Variables** | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| **Perceived usefulness** | | | | | |
| Practical, can play a role in my study/life/work | | | | | |
| Can meet my actual needs | | | | | |
| Can improve my study/life/work quality | | | | | |
| In short, this product is useful for me. | | | | | |
| **Cognitive trust** | | | | | |
| This product is very professional in design, workmanship, etc. | | | | | |
| This is a powerful product. | | | | | |
| The company to which this product belongs is a reputable company. | | | | | |
| The company to which this product belongs is a responsible company. | | | | | |
| **Perceived expectation match** | | | | | |
| This product is very similar to what I imagined. | | | | | |
| This product meets my standards. | | | | | |
| This product meets my inner preference. | | | | | |
| This product is what I want. | | | | | |
| **Purchase intentions** | | | | | |
| I am willing to buy this product. | | | | | |
| I plan to buy this product. | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| I will buy this product. | | | | | |

# BIOGRAPHY

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|---|---|
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