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The Research of Users' Continuance Intention in Relationship-Based Virtual Communities from the Perspective of Quality

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Abstract: With the increasing number of virtual communities, it was challenging to retain existing users and encourage their continued participation in recent years. A research framework to investigate virtual community users' continuance intention was proposed from the perspective of quality. Based on the empirical study, it was found that information and system quality directly affected functional benefits and social benefits, which ultimately determined users' continuance intention to get and to provide information. Furthermore, by modeling information quality and system quality as multifaceted constructs, the results revealed key quality concerns in relationship-based virtual communities. The conclusions had a certain significance on theoretical research and management practice.

Keywords: Virtual Community; Continuance Intention; Information Quality; System Quality

1. INTRODUCTION

Virtual community is a social aggregate that appear on the Internet whose members have emotional communication and form a interpersonal relationships network^[1]. At present, in our country, virtual communities that meet people's various needs become rapidly emerging and increasingly important. According to Hagel and Armstrong^[2], virtual communities are divided into four types in the light of the needs of members: interest-based virtual community, relationship-based virtual community, fantasy virtual community and transactional virtual community. Compared with other types, relationship-based virtual community emphasizes the social relationships among members, which is based on mutual understanding. Therefore, relationship-based virtual community is a network community based on social relations in the real world, which realizes information sharing and interactive communication by community members on the Internet platform.

For a relationship-based virtual community, users voluntarily decide whether or not they participate in the community based on their individual needs and experience. If a virtual community is unable to meet individual needs, he may stop using it or switching to other similar virtual communities. Therefore, it is critical to retain existing users in the long term construction and development of virtual communities. In addition, if the virtual community can maintain the existing user base, it will attract more new users according to the theory of network externality^[3]. Compared with smaller one, people are more willing to participate in virtual communities with large user groups^[4]. The theory of network externality also points out that virtual communities operate and grow effectively by using Economies of scale, and it can bring greater benefits to users as well^[5]. Ma and Agarwal^[6] believe that not all virtual communities can successfully retain users and drive them to continue to use. Therefore, it is particularly important to conduct a research on users' continuance intention in relationship-based virtual community.

This study mainly discusses continuance intention of virtual community users from the perspective of quality. Butler^[7] believed that the amount of information in essence could not retain users, unless the information could be converted into personal interests of users, which could lead to the intention of continuous use. Gu et al^[4] found that the value of virtual community is that high-quality postings help users achieve personal benefits. High-quality information enhances the reputation and user loyalty of the virtual community,

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and it is also a tool for attracting and retaining users. In addition, an excessive increase in the amount of information will lead to information overload due to people's limited information processing capabilities. It also hinders the active participation of users, and ultimately leads to user loss^[8]. Virtual community also require good information filtering or organization mechanisms, which can minimize the process. In summary, this study considers that information quality and system quality of virtual community is very important for retaining existing users. Previous studies suggest that the quality of information systems has multifaceted concepts^[9]. However, these quality dimensions are widely used in enterprise information systems, and they are not well defined in the context of virtual communities. So, what is the difference between the information quality and system quality of virtual community and other types of information systems? What mechanism will affect the users' continuance intention in the information quality and system quality of the virtual community? The purpose of this study is to enrich research findings in this area, and to provide research credentials for user retention and ongoing participation in virtual communities from a quality perspective.

2. THEORETICAL BACKGROUND

2.1. Social exchange theory

According to the theory of social exchange, people's participation in social activities is expected to be rewarded. Social exchange is universal and a completely voluntary act. Social exchange theory assumes that people try to maximize the ratio of social exchange pay and return in social relationships, so the extent to which people perceive a relationship depends on the benefits they receive. Therefore, the reason why users voluntarily participate in relationship-based virtual communities because they want to benefit from it.

2.2. Information quality and system quality of virtual community

The information quality is the evaluation of the information performance of the user after using the information provided by the virtual community^{[10][11]}. In the virtual community, most of the information content is published by users, so it is difficult to control who, when, and what will be released. Therefore, the information quality of virtual community is different from traditional enterprise information systems. In the virtual community, most of the information comes from strangers, so it is the key for users whether the information is reliable and dependent. On the contrary, the reliability of information is guaranteed when employees use information systems. Because it is screened and managed when the information enters the system. In addition, the objectivity of the content in the virtual community is also different. When users are free to express their opinions in the virtual community, their views are subjective and lack guidance. However, the traditional enterprise information system reflects the information of products and personnel, so it is more objective and authentic.

The system quality is the users' evaluation of system performance based on his experience of using the virtual community^{[10][11]}. It is also different from the enterprise information system. In a large virtual community, a large amount of information is released every day, so information overload often occurs. Therefore, users need to use efficient retrieval work to query information and minimize the cost of information processing. In addition, many users in the virtual community do not know in the real world, and can not communicate face to face with each other, they may be more concerned about whether their personal information is exposed. Therefore, it is very important to let users feel safe and comfortable when communicating with others in the virtual community. Comparatively, personal privacy issues can be easily guaranteed and handled when only internal employees can use this information system in the traditional enterprise information system. Another notable feature of the virtual community is interactivity. It depends on the extent to which the virtual community can provide interactive communication to users. In contrast, traditional enterprise information system users have less interaction with others, who simply obtain information from the enterprise's information system.

2.3. Users' participation

There are mainly two types of the behavior of users participating in virtual communities : the behavior on getting information and the behavior on providing information^[12]. First, the behavior on getting information. Many users in the community have a kind of “diving” participation behavior, that is, community members only obtain information as bystanders. Second, the behavior on providing information. It is also called the information contribution behavior, which is expressed as the user posting valuable information or forwarding or evaluating the posting of others in the community. As a consequence, this paper divides users' continuance intention of relationship-based virtual community into two dimensions: continuance intention to get and to provide. The former indicates that the users of the virtual community are willing to continuously browse and find information. The latter indicates that they are willing to continuously contribute various types of information, including information release, information evaluation, and information forwarding.

2.4. Perceived benefits

Users' participation in virtual communities is a voluntary behavior. According to the theory of social exchange^[13], users' participation in social interaction hopes to get a return. It can be seen that users' participation in virtual community activities requires gains. Referring to Dholakia et al^[14], the perceived benefits in virtual communities include both functional benefits and social benefits, which reflect the benefits that users can participate in virtual communities from both rational and emotional perspectives. Among them, functional benefits refer to direct, information-based support that can help users solve problems and achieve real benefits. Social benefits refer to the social and emotional benefits that users bring to their members in the interaction of the communities.

3. THEORETICAL MODELS AND RESEARCH HYPOTHESES

3.1. Information quality & system quality and perceived benefits

Gu et al.^[4]pointed out that low-quality information can distract people because it increases the cost of querying information. In fact, users can benefit from the virtual community only when it provide valuable information to them^[7]. This hypothesis is thus raised:

H1: The information quality of the virtual community positively affects users' functional benefits.

High-quality postings and discussions can help users better understand a topic, and make better decisions^[15]. High-quality information helps users get the important information directly, and it also facilitates the discussion, communication and interaction of the information between users. Therefore, the hypothesis is offered:

H2: The information quality of the virtual community positively affects users' social benefits.

Markus^[16]believes that the technical nature of virtual community online communication is important, which is the key to the success of virtual communities. Indeed, virtual communities are designed to enable users to effectively access information and participate in communication discussions. To reduce information overload, virtual communities need to provide clear navigation and search tools to find and locate information easily^[4]. Therefore, this paper informs this hypothesis:

H3: The system quality of the virtual community positively affects the users' functional benefits.

Virtual community can also establish reward system to increase user enthusiasm, stimulate them to communicate more, and contribute more valuable information^[8].Users feel that they are maximizing the benefits of the community's functionality and socialization when they participate in community activities easily. Therefore, this paper informs this hypothesis:

H4: The system quality of the virtual community positively affects the users' social benefits .

3.2. Continuance intention of virtual community

Whether users get functional benefits or social benefits from the virtual community, their community sense will be enhanced, which will greatly stimulate them to continue to use it to get more benefits. In addition, according to the theory of social exchange^[14], information exchange in virtual community is a process of reciprocity. When users get valuable information and help from other community members' interactions, they are more willing to provide resources to other in return. H5 and H6 hypotheses are raised:

H5: Functional benefits positively affect users' continuance intention to get.

H6: Functional benefits positively affect users' continuance intention to provide.

On the other hand, users who provide valuable information also expect better resources and help from other. Thus, this study proposes the following hypothesis:

H7: Social benefits positively affect users' continuance intention to get.

H8: Social benefits positively affect users' continuance intention to provide.

The theoretical model of this study is shown in Figure 1.

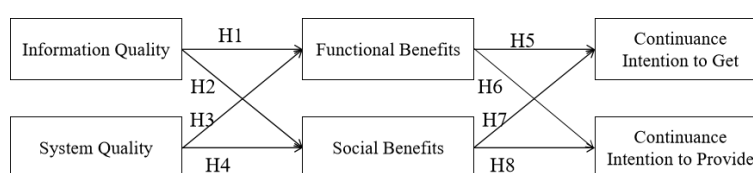


Figure 1. Theoretical model of the study

4. RESEARCH DESIGN

4.1. Data collection

This paper takes WeChat and Weibo of the relationship-based virtual communities as the research object which both have a wide user group in China. The data collection method is questionnaire survey. The survey was conducted by users who had used WeChat or Weibo. In order to ensure the universality and effectiveness, the sample of the trial is from students and staff from all walks of life. There were two ways to distribute questionnaires: online questionnaires and paper questionnaires. In total, 326 questionnaires were collected in two ways, and 292 valid questionnaires, with an effective rate of 89.6%.

4.2. Measurement of variables

The measurement scale for this study used a Likert scale 7-scale scale with options ranging from very non-compliant to very consistent. The variables were measured by the maturity scale of domestic and foreign literature.

Information quality and system quality are multifaceted constructs^[17]. Information quality mainly includes dimensions: richness, value-added, reliability, timeliness, and objectivity. Four dimensions of system quality are navigation and positioning, ease of use, security, and interactivity. Both information quality and system quality include 7 items. Both functional benefits and social benefits include four items. Continuance intention to get and to provide measurement scales include 3 items.

5. DATA ANALYSIS AND RESULTS

5.1. Reliability and validity test

In order to ensure the credibility of the questionnaire, this study used SPSS 19.0 to test the reliability and validity, before the statistical analysis.

5.1.1. Reliability test

The reliability of the scale was tested using Cronbach's α coefficient. In 292 valid questionnaires, the

reliability coefficients of each variable dimension were above 0.7, indicating that the scale of this study has good internal consistency.

5.1.2. Validity test

The study mainly tests the validity of the scale from three aspects: content validity, convergence validity and differential validity. First, in terms of content validity, it adopted in-depth research and interviews and expert consultation in the process of preparation. And the questionnaire has been pre-study after preparation and revised according to the feedback, so its content validity can be guaranteed; secondly, in the convergence validity aspect, this study was performed using standardized factor loading, mean variance extraction (AVE), and compositional reliability (CR). As shown in Table 3, the normalized factor load index of each item on the corresponding variable exceeds the requirement of 0.5, and the AVE of each variable also exceeds the acceptable level of 0.5, and the composition reliability CR is greater than 0.7. Therefore, it has been verified that the research scale has good convergence validity; finally, in terms of differential validity. The test data showed that the square root of the AVE value of all variables is greater than the correlation coefficient between it and other variables, indicating that the scale has good discriminant validity.

Table 1. Reliability and validity test results

Variable	Cronbach's α coefficient	CR	AVE
Information Quality	0.90	0.92	0.62
System Quality	0.87	0.90	0.58
Functional Benefits	0.82	0.86	0.61
Social Benefits	0.85	0.87	0.62
Continuance Intention to Get	0.86	0.87	0.69
Continuance Intention to Provide	0.81	0.80	0.58

5.2. Validation of the research model

This study uses structural equation model to test the previous research hypotheses through Amos 19.0. The path diagram of the model is shown in Figure 2, and the fitting index of the model is shown in Table 4.

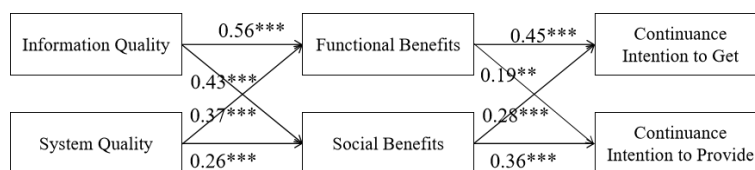


Figure 2. Structural equation model analysis results

Table 2. Each variable confirmatory factor analysis model fitting index table

Fitting index	χ^2	df	χ^2/df	NFI	TLI	CFI	IFI	GFI	RMSEA
Result value	459.68	278	1.65	0.91	0.95	0.98	0.98	0.92	0.06

In the verification of research hypotheses, the 8 research hypotheses are supported. Information quality has a significant impact on functional benefits and social benefits, that is, H1 and H2 are verified; system quality has a significant impact on functional benefits and social benefits, that is, H3 and H4 are verified; Functional benefits have a significant impact on continuance intention to get and to provide, that is, H5 and H6 are verified; social benefits have a significant impact on the continuance intention to get and to provide, that is, H7 and H8 are verified.

6. DISCUSSION

6.1. Research conclusions

6.1.1. Users' continuance intention in the virtual community

This paper believes that users' continuance intention in the virtual community is aimed at information to get and provide. The study found that these two continuance intentions are directly affected by user benefits. As users gain functional benefits and social benefits, their dependence on the virtual community increases, which encourages them to continue to participate in virtual community activities, and users are more willing to continue browsing and finding the information from the community. Besides, the research results show that when users get revenue from the community, they are more willing to share and provide information in return. Therefore, the functional benefits and social benefits can promote users' continuance intention to get and provide information in the virtual community.

6.1.2. The importance of information quality and system quality

The study also found that high-quality information can help users access high-quality information resources and facilitate information exchange. It can help users to obtain multiple benefits by enhancing the richness, value-added, reliability, timeliness and objectivity of information. The results show that a high level of system quality can enhance the perceived benefits and satisfaction of users in the virtual community. Improving system quality can be carried out in four dimensions. In short, the information quality and system quality of the virtual community are two complementary qualities that affect the users' continuance intention. The results show that compared with system quality, information quality has more influence. The contribution of information quality to users' continuance intention is more obvious.

6.2. Theoretical contributions

First, this article pays special attention to the quality of virtual communities. The research distinguishes the information quality and system quality of virtual communities from the traditional information systems, and redefines the dimensions and connotations of virtual community information quality and system quality. It is found that the high level of information quality and system quality is conducive to the transformation of virtual community resources into user perceived personal benefits.

Secondly, based on the previous studies, this paper defines and expounds the two types of benefits of the relationship-based virtual community: functional benefits and social benefits. In order to show the difference between the relationship-based virtual community and the traditional information system, this paper expands the perceived personal benefits construct and subdivides it to better understand the benefits of the virtual community. At the same time, the introduction of functional benefits and social benefits explains how the quality factors can achieve the users' continuance intention.

6.3. Managerial implications

The research results of this paper provide the following practical guidance for the construction and management of virtual communities:

First, virtual communities need to strengthen quality control mechanisms to ensure information quality. Managers often need to monitor, filter, and delete posts that are unreliable and have a strong personal bias. It can also highlight the most valuable posts through user reviews in the virtual communities, which help other users better understand and have a discussion.

Second, virtual communities need to provide effective navigation tools for information query to help users quickly get the information they need. In addition, the virtual community needs to understand the users' past browsing behavior, so that it can better recommend hot topics and engage users to discuss in the community effectively.

Third, virtual communities can adopt reward system to highlight the contributions of active users and encourage them to participate in virtual community activities actively and continuously. For example, based on their contribution, it can award a medal to an active user (for example, a gold user), or give a certain gift reward.

7. LIMITATIONS AND FUTURE RESEARCH

It can select more virtual similar communities to verify this theoretical model in the future, which make the research results universal. In addition, in the questionnaire survey, the subjects were mainly students (63.2%), and the samples had certain limitations. Future research can consider selecting more people from other industries for more accurate research results.

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REFERENCES

- [1] Rheingold H.(1993) .Virtual community: Homesteading on the electronic frontier, reading, mass. Massachusetts: Addison-Wesley.
- [2] Hagel J H, Armstrong A G.(1997)Net Gain: Expanding Markets Through Virtual Communities[M]. Boston, MA: Harvard Business School Press.
- [3] Shapiro, K. C. . (1992). Product introduction with network externalities. *The Journal of Industrial Economics*, 40(1), 55-83.
- [4] Gu, B. , Konana, P. , Rajagopalan, B. , & Chen, H. W. M. . (2007). Competition among virtual communities and user valuation: the case of investing-related communities. *Information Systems Research*, 18(1), 68-85.
- [5] Gallagher, J. . (1999). Challenging the new conventional wisdom of net commerce strategies. *Communications of the Acm*, 42(7), p.27-29.
- [6] Meng Ma, R. A. . (2007). Through a glass darkly: information technology design, identity verification, and knowledge contribution in online communities. *Information system research*, 18(1), p.42-67.
- [7] Butler, B. S. . (2001). Membership size, communication activity, and sustainability: a resource-based model of online social structures. *Information Systems Research*, 12(4), p.346-362.
- [8] Quentin Jones, Gilad Ravid, & Sheizaf Rafaeli.(2004) . Information overload and the message dynamics of online interaction spaces: a theoretical model and empirical exploration. *Information Systems Research*, 15(2), p.194-210.
- [9] DeLone W H, Mclean E R.(2003) .The DeLone and McLean model of information systems success: a ten-year update. *Journal of Management Information Systems*, 19(4): 9-30.
- [10] McKinney, V. , Yoon, K. , & Zahedi, F. M. . (2002). The measurement of web-customer satisfaction: an expectation and disconfirmation approach. *Information Systems Research*, 13(3), p.296-315.
- [11] Nelson, R. R. , Todd, P. A. , & Wixom, B. H. . (2005). Antecedents of information and system quality: an empirical examination within the context of data warehousing. *Journal of Management Information Systems*, 21(4), 199-235.
- [12] Ridings C, Gefen David, Arinze B. (2006).Psychological Barriers: lurker and poster motivation and behavior in online communities. *Communications of the Association for Information Systems*, 18: 329-354.
- [13] Richard M. Emerson. (2003). Social exchange theory. *Annual Review of Sociology*, 2(1), 335-362.
- [14] Dholakia, U. M. , Blazevic, V. , Wiertz, C. , & Algesheimer, R. . (2009). Communal service delivery: how customers benefit from participation in firm-hosted virtual p3 communities. *Journal of Service Research*, 12(2), 208-226.
- [15] Zhang W, Watts S A.(2008). Capitalizing on content: information adoption in two online communities]. *Journal of the Association for Information Systems*, 9: 73-94.
- [16] Markus, M. Lynne.(2005) . Technology-shaping effects of e-collaboration technologies: bugs and features. *International Journal of E Collaboration*, 1(1), 1-23.
- [17] Wixom B H, Watson H J.(2001) .An empirical investigation of the factors affecting data warehousing success . *MIS Quarterly*, 25: 17-41.