User Involvement in Self-Governing Content in Professional Online Communities

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Abstract

Increasingly, professionals seek knowledge from online communities to resolve problems that they encounter in the workplace. However, the quality and reliability of online content are still a concern. Previous research suggests that user involvement in sorting out online content is likely to be an effective means to ease some of the concern. Nonetheless, our understanding of factors that influence professionals' involvement in sorting out quality content in professional online communities is still limited. Thus, drawing on social exchange theory, self-determined theory, and related literatures, this study proposes a research model to understand these underlying factors. The key factors include reciprocity, reputation, trust, community commitment, and self-determined motivation. A web-based survey based on validated measures in the literature is under development to collect data to empirically evaluate the research model. This study is likely to enhance our understanding of professionals' involvement in sorting out online content. In addition, findings of this study are expected to assist professional online communities to find ways to incentivise user involvement.

1. Introduction

A Harris Poll commissioned by Business Week in 1997 showed that 42% of participants who were involved in online communities said that their participation was related to their profession [1]. Since then, online communities, especially professional online communities whose users are professional people in a particular field, have been playing an increasingly important role in professionals' careers. For example, searching for work-related knowledge from professional online communities is found to be the most frequent informal learning activities that IT professionals take [2]. Similarly, Ala-Mutka et al. [3] report that 75% of the IT professionals who were using IT online communities reported that participating in these communities helped them do a better job and 68% stated that their participation helped their professional development.

As the use of professional online communities among professional people increases, the quality and reliability of content have become a concern [3]. This is because content quality can influence users' satisfaction with the community which, in turn, affects their intention to use it [4] in two ways. First, users can be misled by low quality or even incorrect content. Second, users may have to spend a lot of time locating useful content. In both cases, users can easily switch to other professional online communities. Therefore, a professional online community needs to have effective mechanisms to sort out quality content in order to retain users and increase the likelihood of its success.

Some online communities have successfully used self-governance mechanisms to sort out content [5]. For example, Wikipedia, an online Encyclopedia, encourages users to collaboratively generate quality information by adding, editing, or removing content. In Schroeder and Wagner's [6] study, having individual users act as guardian of article is identified by 83% participants as an important governance mechanism in Wikipedia. This may explain why the quality of Wikipedia entries is found to be better than those in the Encyclopedia [7]. Likewise, Slashdot, a technology-related news website, implements a moderation system that invites users to help with organising comments on news [5].

Prior research highlights the importance of user involvement in effective implementation of self-governance mechanisms [8]. For example, users' inputs in sorting out quality content are found to be useful by others who are looking for quality content in organisational repositories [9]. Nevertheless, our understanding of why users are willing to get involved

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in sorting out quality content for other professionals beyond organisational boundaries is still limited. Therefore, this study aims to develop a research model to explain users' intention to participate in self-governing content in professional online communities.

The rest of the paper is organised as follows: Section 2 reviews related literature; Section 3 discusses the research model; Section 4 explains the research methodology; and Section 5 concludes the paper with potential contributions.

2. Theoretical background

2.1. Self-governance mechanisms in professional online communities

Many terms have been used to describe an online community that provides a platform for professionals to share and exchange their knowledge. Some of these include an electronic network of practice [10], a virtual community of practice [1], a professional virtual community [4], and an electronic knowledge repository [11]. This paper uses the term "a professional online community" which is defined as "a distinct type of virtual community in which people with common interests, backgrounds, and goals participate and collectively contribute to a database of professional knowledge" [12]. In particular, a professional online community refers to those which can be accessed by the public regardless of who its sponsors are. These websites would normally require a contributor to register a valid account while a reader may or may not be required to do so.

The public participation in professional online communities means that, the amount of content can increase dramatically which may increase the time it takes for users to locate useful content [13]. As a result, some users may stop using these communities or decrease their uses over time [14]. Therefore, the quality of content has been recognised as an important factor contributing to the success of professional online communities [3].

Previously, some online communities assigned the quality maintenance task to community managers or a small group of users with privileges to safeguard the quality of shared knowledge [15]. However, in recent years, there have been increasing calls for getting users involved in this task to share the workload [16]. This concept is generally referred to as a self-governance mechanism [17]. Self-governance is defined as the task where users steer and coordinate actions and manage their interdependencies among themselves [17]. Examples of self-governance mechanisms are eBay's feedback forum, Amazon's book review, Yahoo! Answers' voting, and Slashdot's moderation system. In these applications, users' inputs provide information for community decisions by promoting useful information while suppressing less useful information.

Prior studies have shown that features such as "comment", "vote", and "report" are helpful in sorting out quality content. For example, reviews and comments written by users are found useful for identifying quality content in organisational repositories [9]. Jeon et al. [18] argue that non-textual information, such as "vote", could be used to predict the quality of answers in Q&A online communities. In addition, users flagging and reporting low quality news comments are found to be beneficial for managing the quality of these comments [19] because these features allow users to report spam, inappropriate content or abusive content [20].

Some professional online communities also provide these tools so that users can take part in self-governing content. These communities include technet.microsoft.com for ICT professionals, www.warriorforum.com for Internet marketing professionals, and forums.nurse.com for nurses. Moreover, the success story of Slashdot.org implies that a self-governance mechanism is a promising means for sorting out quality content in professional online communities by encouraging active user involvement.

In sum, the goal of implementing self-governance mechanisms is to maintain quality and reliable content in professional online communities. Achieving this goal relies on users' voluntary participation and collaboration.

2.2. User motivation

Prior studies provide an extensive and solid theoretical background to investigate users' willingness to get involved in sorting out quality content.

On the one hand, prior research conceptualises motivation as consisting of both intrinsic motivation and extrinsic motivation [21]. While some researchers argue that intrinsic motivation plays a key role in explaining motivation [21], others suggest that extrinsic motivation helps explain motivation in more detail [22]. For example, results from interviews with moderators in an online community conducted by Alonso and O'shea [23] reveal that the benefit of gaining support is moderators' motivation. In addition, a study of Digg uncover that users' desire to improve their standing and acceptance in the community is an incentive to promote stories on Digg by giving their comments or by rating online content [24]. Moreover, benefits for their careers and peer recognition are

found to be related to people's voluntary collaboration in open source projects [25].

On the other hand, according to Ryan and Deci [26], the distinction among different types of motivations do not necessarily drive user behaviour. Ryan and Deci [26] suggest that the degree to which the motivation is self-determined is important to understand behaviours. While intrinsic motivation comes from the self, each type of extrinsic motivation can be integrated or internalized and accumulated together with intrinsic motivation as self-determined motivation [26]. Despite different degrees of each type of motivation, all types of motivation eventually compose self-determined motivation to induce behaviour. For example, Palmisano [27] argue that self-determined motivation has a significant and positive influence on users' knowledge sharing.

This paper recognises that conceptualising motivation as a multi-dimensional construct and as a unitary concept is equally useful in understanding the incentives of behaviour. While the unitary perspective of motivation explains how self-determined motivation is related to behavioural intention, different types of motivation offer insights into the driving forces behind self-determined motivation.

Next, we review concepts related to social exchange theory [28] that help explaining professionals' willingness to help sort out quality content in professional online communities. In a social platform like a professional online community, users' voluntary contribution and collaboration are viewed as social exchange activities [29]. Therefore, social exchange beliefs are considered as motivational forces for users to get involved in self-governing content in professional online communities.

2.3. Social exchange beliefs

According to social exchange theory (SET) [28], social exchange activities are "voluntary actions of individuals that are motivated by the returns they are expected to bring and typically do in fact bring from others". SET is appropriate for this study because it is developed to explain why individuals engage in cooperative behaviours that are not formally rewarded [28].

Central to SET is reciprocity which specifies that individuals should help those who have helped them by returning the favour. For example, during knowledge exchange, strong belief in reciprocity can encourage people to mutually and fairly share knowledge in professional online communities [30]. A user can benefit from a professional online community where content are safeguarded by other users. As a result, a user may want to take part in self-governing online content with the expectation that others would do the same to save his or her time in finding quality content and to benefit the community at large. Thus, reciprocity is included in this study.

Reputation is another important social exchange belief which is related to user motivation to engage in self-governing content in professional online communities. Gaining reputation can be helpful to professionals seeking to advance their careers [31]. A user's reputation in a professional online community can extend to his or her profession [10]. Evidence from prior research suggests that building reputation is a strong motivator for users to offer useful advice to others in professional online communities [10]. Thus, a user may be motivated by the gain in online reputation from getting involved in self-governing content in professional online communities.

Trust is also a frequently mentioned concept in social exchange activities. According to Blau [28], trust shapes and maintains social exchange relationships, which may lead users to engage in community activities beneficial to others and the community at large by helping with sorting out quality content in professional online communities. For example, when the trust level of a user is high, he or she is likely to be willing to make effort to help others and the community [32].

Previous research argues that trust in online settings can be classified into interpersonal trust and system trust, both of which are important to facilitate cooperation and collaboration among users [33]. Accordingly, trust in peers and trust in self-governance mechanisms are considered as important factors to motivate users to engage in self-governing online content. Trust in peers refers to users' belief in other users' abilities, integrity and benevolence in giving inputs for maintaining the quality of content in professional online communities. Trust in self-governance mechanisms refers to users' belief that proper governance mechanisms have been put into place to maintain the quality of content in professional online communities.

A sense of community and a sense of obligation are two additional concepts used by prior studies to explain social exchange activities. A sense of community refers to a sense of emotional involvement and attachment to a community [34]. It has been found to be related to active user participation in online communities [35]. A sense of obligation refers to a sense of duty and responsibility to engage in action which is also found to be related to user contribution in professional online communities [10].

However, this paper argues that a sense of community and a sense of obligation should be considered as two distinct yet related dimensions of

community commitment. Users develop a sense of community because they believe that they can gain benefits from the community by getting connected to others and by acquiring a large amount of information [36]. Meanwhile, users feel obliged to help others and to contribute to the community in which they share the membership [10]. Therefore, following Meyer and Allen's [37] work, this paper combines these two aspects into one construct, community commitment, which is discussed separately below.

2.4. Community commitment

Commitment theory is another useful theory that can partially explain voluntary social exchange behaviours in professional online communities [38]. Prior research acknowledges commitment as one among a set of energising forces that contributes to motivation [39]. Studies have found commitment to be a motivational factor in explaining user participation in professional online communities [40].

Commitment theory proposed by Meyer and Allen [37] defines a sense of community and a sense of obligation as affective community commitment and normative community commitment respectively. According to Bateman et al. [38], affective community commitment is "a bond between a member and a particular community that is based on the member's strong emotional attachment to that community". Normative community commitment is "a bond between a member and a particular community that is based on the member's sense of obligation towards that community" [38]. In their study, Bateman et al. [38] find affective community commitment and normative community commitment affect different behaviours (i.e. reading threads, posting replies, and moderating discussions) in online communities.

It is noteworthy that the original commitment theory includes continuance commitment as a third dimension. However, continuance commitment is not included in this study because behaviour continuance is not the focus of this research. In addition, continuance commitment may not apply well to self-governing behaviour which does not necessarily involve a switching cost [36]. In contrast, affective commitment and normative commitment are more relevant to this study because they help explain collaborative and voluntary behaviours [39].

3. Research model and propositions

Based on previous literature, social exchange theory, and commitment theory, this paper proposes a research model, as shown in Figure 1. The research model depicts that users' intention to get involved in self-governing content in professional online communities is influenced by self-determined motivation which, in turn, is affected by social exchange beliefs (i.e. reciprocity, reputation, trust, and community commitment). Relationships between these constructs in the research model are discussed below.

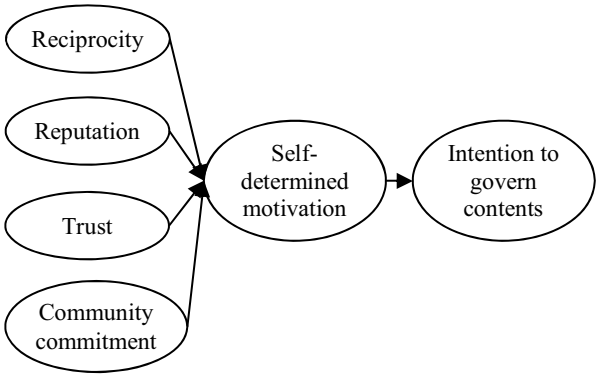

Figure 1. Research model

3.1. Self-determined motivation and intention

According to Deci and Ryan [41], self-determined motivation reflects an individual's intention to act. In other words, the more self-determined the motivation is, the more an individual is likely to carry out the activity with greater effort [41]. Empirically, self-determined motivation is found to be positively related to the effort an individual takes to perform an activity [42]. Moreover, in Malhotra et al. 's [43] study, self-determination motivation is positively related to user intention to use an online learning platform. Therefore, the degree of self-determined motivation a user has is expected to affect his or her intention to get involved in self-governing online content in professional online communities, which leads to the following proposition:

Proposition 1: Self-determined motivation is positively related to users' intention to get involved in self-governing content in professional online communities.

3.2. Social exchange beliefs and self-determined motivation

According to SET [28], users expect mutual reciprocity to offset the effort and time they invest in contributing to professional online communities. For example, reciprocity is found to be one of the factors that facilitate voluntary user contribution in professional online communities [10]. Therefore, strong belief in reciprocity can be a stimulus to

motivate users to help each other and the community by self-governing online content. This leads to the following proposition:

Proposition 2: Reciprocity is positively related to users' self-determined motivation to get involved in self-governing content in professional online communities.

Evidence from prior research indicates that earning respect and recognition from others is one of the key motivations for knowledge sharing [44]. The notion that gaining reputation is a strong motivator for active participation is evidenced in findings from prior studies on user participation in both inter-organisational and cross-organisational professional online communities [10]. Thus, users' belief that getting involved in sorting out content will enhance their reputations in a professional online community is likely to motivate users to engage in the activity. This leads to the following proposition:

Proposition 3: Reputation is positively related to users' self-determined motivation to get involved in self-governing content in professional online communities.

Prior research suggests that, individuals are more willing to engage in community activities in a trusting environment [1]. For example, trust is found to motivate users to share knowledge in an online community for professional learning [45] and to have a positive effect on motivation to share quality knowledge in an online community for IT professionals [1]. Hsiao et al. [46] also find that trust in recommendations made by other users motivates users to purchase products. Moreover, Fang and Chiu [32] argue that users who believe that the management systems (i.e., managers, moderators, or management teams) consider and care about their needs are more willing to spend time and effort on community activities voluntarily. Thus, trust is likely to affect a user's self-determined motivation to act. This leads to the following proposition:

Proposition 4: Trust is positively related to users' self-determined motivation to get involved in self-governing content in professional online communities.

Users who are committed to a community are likely to voluntarily engage in activities that help achieve the community goals [47]. According to Bateman et al. [38], users with high levels of affective community commitment and normative community commitment are likely to care about the communities' sustainability. Users who have strong affective community commitment tend to spend time and make an effort to help other members in the community with such actions as replying to others' questions [38]. On the contrary, users with low affective community commitment are less likely to engage in community activities, such as sorting out quality content.

When users have a strong sense of obligation to support the community, they are likely to engage in activities that are beneficial to the community [31]. For example, normative community commitment is found to have a positive effect on users' moderating behaviour [38]. In addition, when a sense of obligation to help others in the community increases, users are more motivated to assist others in the collective by sharing their knowledge [10]. Therefore, a user's community commitment is likely to lead them to help other users and to help ensure the success of the community by engaging in self-governing content in professional online communities. This leads to the following proposition:

Proposition 5: Community commitment is positively related to users' self-determined motivation to get involved in self-governing content in professional online communities.

4. Research methodology

In order to evaluate the research model, this study develops a web-based survey based on the validated measures in the literature to collect empirical data.

4.1. Measurement development

Items measuring professionals' intention to get involved in self-governing content are adapted from Venkatesh et al. [48]. This study adapts items from Malhotra et al. [43] to measure each type of motivation to derive a composite score to measure self-determined motivation. The composite score is weighted by different types of motivation using a "relative autonomy index" developed by Ryan and Connell [49]. Items measuring reciprociy, reputation, and trust are adapted from Kankanhalli et al. [11], Tong et al. [50], and Hsu et al. [33] respectively. Community commitment is a second-order construct consisting of two components: normative commitment and affective commitment which are measured using items adapted from Bateman et al. [38].

The adapted and modified measurement items will be presented as statements in a questionnaire. Seven-point Likert scales ranging from "Strongly disagree" to "Strongly agree" will be used for all of the measurement items.

The survey also includes demographic questions such as: gender, age, profession, places to search for online learning content, role in online community, and past experience in getting involved in self-governing online content. These demographic questions are

placed at the end of the survey in order to prevent respondents from dropping the survey before answering key questions associated with constructs in the research model [51].

4.2. Survey design and sampling

This study uses a web-based survey, which will be hosted on www.qualtrics.com, to collect empirical data for the following reasons:

First, the focus of this study suggests that a web-based survey is an appropriate tool to collect empirical data to examine user involvement in self-governing content in professional online communities. Second, Qualtrics has a function that will maintain the anonymity of respondents, ensuring that they will not know the researcher and vice versa. An anonymous web-based survey can reduce the response bias because participants may give biased responses if they know the researcher [51]. Third, a web-based survey provides response control functions to make sure that participants complete the questions required to be answered, thus reducing missing data [51]. In addition, Qualtrics can be set up to prevent a participant from taking the survey multiple times. Fourth, a web-based survey automatically stores survey responses into a database directly, which eliminates transcription errors.

A convenience sampling technique is used to collect cross-sectional data for this study. As this study focuses on users' intention, target participants will be those who are users of professional online communities with or without experience of governing online content. Different level of experiences is to be recorded in the demographic questions of the survey.

An invitation message regarding the recruitment of participants for the survey will be posted on selected professional online communities. The message will outline the objective of this study, the sampling procedure, protection of participants' privacy, confidentiality, anonymity, and plans of disclosing survey result, which can help build trust between participants and the researchers [51]. A link to the web-based survey will also be provided in the invitation message so that those who are interested are able to participate in the survey by clicking on the link.

4.3. State of study

This study is currently at the stage of finalising the survey questionnaire. A pilot study will be conducted before the main data collection commences. Upon completion of data collection, a two-step analytical approach recommended by Hair et al. [52] will be used to first assess the reliability, discriminant and convergent validity of the measurement model and then validate the structural model. Structural Equation Modeling will be used to analyse the data because it can simultaneously test the reliability and validity of measurement scales and estimate the relationships between constructs.

5. Discussion and Conclusion

The increasing use of online content among professionals raises concerns about the quality and reliability of the content available in professional online communities. Active user involvement is likely to be a long-term, pragmatic, and sustainable governance mechanism for maintaining quality online content. Yet, little is known about why users have the intention to get involved in governing online content. Drawing from prior studies, this study proposes a research model to explain users' intention to participate in self-governing content in professional online communities. The research model illustrates that user intention is influenced by users' self-determined motivation which, in turn, is affected by users social exchange beliefs, including trust, reputation, reciprocity, and commitment.

The potential theoretical contributions of this study are three-fold. First, this study contributes to the body of literature on self-governance mechanisms in online settings which is one of the increasingly important topics in a digital society [53]. While other research looks into the evolvement [54], implementation [8], and implications [55] of self-governance mechanisms in online communities from the governance structure's perspective, this study examines self-governance mechanisms from users' point of view. The research model highlights user involvement and promotes an understanding of the significance of user participation in sorting out quality content in professional online communities. Second, this study advances the idea that using motivation as a unitary concept can be meaningful in understanding the relationship between self-determined motivation and behavioural intention [26]. Third, this study answers Meyer et al.'s [39] call for acknowledging commitment as an important energising force in the motivation process by establishing a relationship between community commitment and self-determination motivation.

This study has three possible practical implications. First, the awareness of the significance of user involvement could guide professionals who take advantage of online content for their work to make extra effort to contribute to the community beyond posting questions and answering questions. Second, the findings of this study may provide useful suggestions

to sponsors of professional online communities on how to engage users in supporting the sustainability of the community in terms of providing quality and reliable content. Third, designers of professional online communities could benefit from this study because the understandings of factors that promote users' self-determined motivation to take part in sorting out quality content may generate design guidelines to support the effective implementation of self-governance mechanisms.

Our future plan is to empirically evaluate the research model to better understand the relationships between the identified factors and users' intention to participate in self-governing content in professional online communities.

References

[1] Chiu, C.-M., Hsu, M.-H., and Wang, E.T., "Understanding Knowledge Sharing in Virtual Communities: An Integration of Social Capital and Social Cognitive Theories", Decision Support Systems, 42(3), 2006, pp. 1872-1888.

[2] Lohman, M.C., "A Survey of Factors Influencing the Engagement of Information Technology Professionals in Informal Learning Activities", Information Technology, Learning and Performance Journal, 25(1), 2009, pp. 43-53.

[3] Ala-Mutka, K., Punie, Y., and Ferrari, A., "Review of Learning in Online Networks and Communities", in (Cress, U., Dimitrova, V., and Specht, M., 'eds.'): Learning in the Synergy of Multiple Disciplines, Springer, Berlin Heidelberg, 2009, pp. 350-364.

[4] Chen, I.Y.L., "The Factors Influencing Members' Continuance Intentions in Professional Virtual Communities - a Longitudinal Study", Journal of Information Science, 33(4), 2007, pp. 451-467.

[5] Johnston, E., "Governance Infrastructures in 2020", Public Administration Review, 70(Supplement s1), 2010, pp. s122-s128.

[6] Schroeder, A., and Wagner, C., "Governance of Open Content Creation: A Conceptualization and Analysis of Control and Guiding Mechanisms in the Open Content Domain", Journal of the American Society for Information Science and Technology, 63(10), 2012, pp. 1947-1959.

[7] Giles, J., "Internet Encyclopaedias Go Head to Head", Nature, 438(7070), 2005, pp. 900-901.

[8] Beschastnikh, I., Kriplean, T., and Mcdonald, D.W., "Wikipedian Self-Governance in Action: Motivating the Policy Lens", International Conference on Weblogs and Social Media, 2008, pp. 27-35.

[9] Kayhan, V., and Bhattacherjee, A., "Contributing Knowledge to Organizational Repositories: The Role of Governance Mechanisms", Americas Conference on Information Systems, 2009, pp. 1-9.

[10] Wasko, M.M., and Faraj, S., "Why Should I Share? Examining Social Capital and Knowledge Contribution in Electronic Networks of Practice", MIS Quarterly, 29(1), 2005, pp. 35-57.

[11] Kankanhalli, A., Tan, B.C.Y., and Wei, K.-K., "Contributing Knowledge to Electronic Knowledge Repositories: An Empirical Investigation", MIS Quarterly, 29(1), 2005, pp. 113-143.

[12] Cheung, C.M.K., and Lee, M.K.O., "What Drives Members to Continue Sharing Knowledge in a Virtual Professional Community? The Role of Knowledge Self-Efficacy and Satisfaction", in (Zhang, Z., and Siekmann, J., 'eds.'): Knowledge Science, Engineering and Management, Springer, 2007, pp. 472-484.

[13] Zheng, Y., Zhao, K., and Stylianou, A., "Building Social Capital in Online Communities: A Perspective of Information and System Quality", Americas Conference on Information Systems, 2010, pp. 1-7.

[14] Hercheui, M.D., "A Literature Review of Virtual Communities", Information, Communication & Society, 14(1), 2010, pp. 1-23.

[15] Waterson, P., "Motivation in Online Communities", in (Dasgupta, S., 'ed.' Encyclopedia of Virtual Communities and Technologies, IGI Global, Hershey, PA, 2006, pp. 334-337.

[16] Arrasvuori, J., and Olsson, T., "A Model for Analyzing Online Communities", The International Journal of Business and Information, 4(2), 2009, pp. 115-136.

[17] Schwagereit, F., Scherp, A., and Staab, S., "Survey on Governance of User-Generated Content in Web Communities", ACM WebSci'11, 2011

[18] Jeon, J., Croft, W.B., Lee, J.H., and Park, S., "A Framework to Predict the Quality of Answers with Non-Textual Features", International ACM SIGIR Conference on Research and Development in Information Retrieval, 2006, pp. 228-235.

[19] Diakopoulos, N., and Naaman, M., "Towards Quality Discourse in Online News Comments", ACM Conference on Computer Supported Cooperative Work, 2011, pp. 133-142.

[20] Dwyer, C., Hiltz, S.R., and Widmeyer, G., "Understanding Development and Usage of Social Networking Sites: The Social Software Performance Model", Hawaii International Conference on System Sciences, 2008, pp. 292-292.

[21] Ryan, R.M., and Deci, E.L., "Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions", Contemporary Educational Psychology, 25(1), 2000, pp. 54-67.

[22] Mckenzie, P.J., Burkell, J., Wong, L., Whippey, C., Trosow, S.E., and Mcnally, M.B., "User-Generated Online Content 1: Overview, Current State and Context", First Monday, 17(6), 2012,

[23] Alonso, A.D., and O'shea, M., "Moderating Virtual Sport Consumer Forums: Exploring the Role of the Volunteer Moderator", International Journal of Networking and Virtual Organisations, 11(2), 2012, pp. 173-187.

[24] Lerman, K., "User Participation in Social Media: Digg Study", IEEE/WIC/ACM International Conferences on Web Intelligence and Intelligent Agent Technology Workshops, 2007, pp. 255-258.

[25] Hars, A., and Shaosong, O., "Working for Free? Motivations of Participating in Open Source Projects", Hawaii International Conference on System Sciences, 2001, pp. 1-9.

[26] Ryan, R.M., and Deci, E.L., "Self-Determination Research: Reflections and Future Directions", in (Deci, E.L.,

and Ryan, R.M., 'eds.'): Handbook of Self-Determination Research, University of Rochester Press, Rochester, NY, 2002, pp. 431-441.
[27] Palmisano, J., "A Motivational Model of Knowledge Sharing", in (Burstein, F., and Holsapple, C.W., 'eds.'): Handbook on Decision Support Systems, Springer, 2008, pp. 355-370.
[28] Blau, Exchange and Power in Social Life, Wiley, New York, 1964.
[29] Tsai, M.-T., Chang, H.-C., Cheng, N.-C., and Lien, C.-C., "Understanding It Professionals' Knowledge Sharing Intention through Kms: A Social Exchange Perspective", Quality & Quantity, 2012, pp. 1-15.
[30] Lin, M.-J.J., Hung, S.-W., and Chen, C.-J., "Fostering the Determinants of Knowledge Sharing in Professional Virtual Communities", Computers in Human Behavior, 25(4), 2009, pp. 929-939.
[31] Oreg, S., and Nov, O., "Exploring Motivations for Contributing to Open Source Initiatives: The Roles of Contribution Context and Personal Values", Computers in Human Behavior, 24(5), 2008, pp. 2055-2073.
[32] Fang, Y.H., and Chiu, C.M., "In Justice We Trust: Exploring Knowledge-Sharing Continuance Intentions in Virtual Communities of Practice", Computers in Human Behavior, 26(2), 2010, pp. 235-246.
[33] Hsu, M.-H., Chang, C.-M., and Yen, C.-H., "Exploring the Antecedents of Trust in Virtual Communities", Behaviour & Information Technology, 30(5), 2011, pp. 587-601.
[34] Cheung, C.M.K., and Lee, M.K.O., "What Drives Consumers to Spread Electronic Word of Mouth in Online Consumer-Opinion Platforms", Decision Support Systems, 53(1), 2012, pp. 218-225.
[35] Chai, S., and Kim, M., "A Socio-Technical Approach to Knowledge Contribution Behavior: An Empirical Investigation of Social Networking Sites Users", International Journal of Information Management, 32(2), 2012, pp. 118-126.
[36] Jin, B., Park, J.Y., and Kim, H.-S., "What Makes Online Community Members Commit? A Social Exchange Perspective", Behaviour & Information Technology, 29(6), 2010, pp. 587-599.
[37] Meyer, J.P., and Allen, N.J., "A Three-Component Conceptualization of Organizational Commitment", Human Resource Management Review, 1(1), 1991, pp. 61-89.
[38] Bateman, P.J., Gray, P.H., and Butler, B.S., "The Impact of Community Commitment on Participation in Online Communities", Information Systems Research, 22(4), 2011, pp. 841-854.
[39] Meyer, J.P., Becker, T.E., and Vandenberghe, C., "Employee Commitment and Motivation: A Conceptual Analysis and Integrative Model", Journal of applied psychology, 89(6), 2004, pp. 991-1007.
[40] Bateman, P., Gray, P.H., and Butler, B., "Community Commitment: How Affect, Obligation, and Necessity Drive Online Behaviors", International Conference on Information Systems, 2006, pp. 983-1000.
[41] Deci, E.L., and Ryan, R.M., "The" What" and" Why" of Goal Pursuits: Human Needs and the Self-Determination of Behavior", Psychological inquiry, 11(4), 2000, pp. 227-268.
[42] Sheldon, K.M., and Elliot, A.J., "Goal Striving, Need Satisfaction, and Longitudinal Well-Being: The Self-Concordance Mode", Journal of personality and social psychology, 76(3), 1996, pp. 482-497.
[43] Malhotra, Y., Galletta, D.F., and Kirsch, L.J., "How Endogenous Motivations Influence User Intentions: Beyond the Dichotomy of Extrinsic and Intrinsic User Motivations", Journal of Management Information Systems, 25(1), 2008, pp. 267-300.
[44] Jin, X., Zhou, Z., Lee, M.K.O., and Cheung, C.M.K., "Why Users Keep Answering Questions in Online Question Answering Communities: A Theoretical and Empirical Investigation", International Journal of Information Management, 33(1), 2013, pp. 93-104.
[45] Tseng, F.-C., and Kuo, F.-Y., "The Way We Share and Learn: An Exploratory Study of the Self-Regulatory Mechanisms in the Professional Online Learning Community", Computers in Human Behavior, 26(5), 2010, pp. 1043-1053.
[46] Hsiao, K.-L., Lin, J.C.-C., Wang, X.-Y., Lu, H.-P., and Yu, H., "Antecedents and Consequences of Trust in Online Product Recommendations: An Empirical Study in Social Shopping", Online Information Review, 34(6), 2010, pp. 935-953.
[47] Kim, A.J., Community Building on the Web: Secret Strategies for Successful Online Communities, Peachpit Press, Berkeley, CA, 2006.
[48] Venkatesh, V., Morris, M.G., Davis, G.B., and Davis, F.D., "User Acceptance of Information Technology: Toward a Unified View", MIS Quarterly, 27(3), 2003, pp. 425-478.
[49] Ryan, R.M., and Connell, J.P., "Perceived Locus of Causality and Internalization: Examining Reasons for Acting in Two Domains", Journal of personality and social psychology, 57(5), 1989, pp. 749-761.
[50] Tong, Y., Wang, X., and Teo, H.-H., "Understanding the Intention of Information Contribution to Online Feedback Systems from Social Exchange and Motivation Crowding Perspectives", Hawaii International Conference on System Sciences, 2007
[51] Andrews, D., Nonnecke, B., and Preece, J., "Conducting Research on the Internet: Online Survey Design, Development and Implementation Guidelines", International Journal of Human-Computer Interaction, 16(2), 2007, pp. 185-210.
[52] Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E., and Tatham, R.L., Multivariate Data Analysis, Pearson Prentice Hall, 6th edn, Upper Saddle River, N.J., 2006.
[53] Ziewitz, M., and Pentzold, C., "Modes of Governance in Digitally Networked Environments: A Workshop Report", OII Forum Discussion Paper, 2010
[54] Markus, M.L., "The Governance of Free/Open Source Software Projects: Monolithic, Multidimensional, or Configurational?", Journal of Management and Governance, 11(2), 2007, pp. 151-163.
[55] Lampe, C.a.C., Johnston, E., and Resnick, P., "Follow the Reader: Filtering Comments on Slashdot", SIGCHI Conference on Human Factors in Computing Systems, 2007, pp. 1253-1262.