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Research paper



Factors Affecting Participants' Knowledge-Sharing Behaviors in Online Communities: a Systematic Review

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Abstract

In the current competitive economy, knowledge considered as a valuable source of competitive advantage. Online Communities (OCs) became accepted online popular platforms for exchanging and sharing knowledge between groups or individuals with common needs and interest. How to motivate users to contribute their knowledge is one of the most challenges in OCs. The factors that influence members to exchange their knowledge in OCs have not fully explored in the context of knowledge sharing. This systematic literature review aimed to examine the previous quantitative/qualitative studies from 2006 to 2017 to identify the most frequently cited factors that influence participants' knowledge sharing behavior in OCs. The current study classified those factors into three main categories: individual, community, and technological factors. The study also examined different theories, constructs, and models that used in the selected articles. The findings from this study could be applied in future empirical research to construct a conceptual framework for members' knowledge sharing behavior in OCs.

Keywords: *Online Communities, knowledge sharing, Systematic literature review.*

1. Introduction

The concept of online community (OC) was first introduced by Rheingold [1], who defined OCs as "social aggregations that emerge when enough people carry on public discussions long enough, with sufficient human feeling." Based on this definition, OCs considered as a group of people with shared needs and interests, who exchange their knowledge and experience through an online platform for a time duration in a controlled manner. With the emergence of new technologies, a broad range of software supports OCs. The sizes of the communities vary from globally favorite sites with billions of users, such as Wikipedia, to small slot communities with only 10–20 members [2]. Online Communities (OCs) (also known as virtual communities or Internet communities) are known as a critical power mechanism of enabling and empowering knowledge sharing [3]–[7]. Knowledge sharing in OCs has been discussed in many types, such as e-commerce [8], [9] ; education [10]–[12] ; travel [13] and health [14]

Unlike traditional communities, OCs do not require members to be located in the same place, and having physical communication, or belonging to the same cultural groups. All communication in OCs occurs virtually[12].

The term knowledge sharing (KS) defined in the literature as "activities involved in disseminating or transferring knowledge among individuals, groups or organizations"[15], [16], where people "exchange their explicit and tacit knowledge and generate new knowledge" [16]. Online Users view the online community as a place to acquire knowledge, solve problems, absorb and exchange information and experience, or create innovation. From the perspective of organizations, customer communication could help the firms to increase the competitiveness, improve customer loyalty and reduce the cost of customer technical services [17]–[19].

The success of OCs depends on the willingness of the participants to share and exchange their knowledge experience with others [19]. One of the challenges in OCs is how to retain and motivate members to participate in knowledge contribution [20]. Many OCs fail because the member's reluctance to join in the knowledge sharing process [7].

While considerable research has been devoted to knowledge sharing behavior, less attention paid to online sharing platforms, particularly, online communities.

Therefore, the current study aimed to collect, summarize, and analyze the previous related studies to identify the most cited factors of participants' knowledge sharing behavior in online communities between 2006 and 2017. The study also examines, and summaries all used theories and models in the field. Moreover, the study aimed to identify some issues that might need further investigation and recommend future studies in the context of OCs. To achieve that, the following research questions (RQs) have been placed frontward:

RQ1: What are different theoretical, and models adopted by research in knowledge sharing behavior in online communities?

RQ2: What are the most cited factors influencing participants to share and exchange knowledge in OCs?

RQ3: What are the issues that might need further investigation in future research?

This paper divided into fifth sections. The following sections illustrates the methodology of the systematic review study, which presents the SLR results, followed by inclusion and exclusion criteria, and the flowchart of the article section strategy. The third section displays the result of the analysis of the reviewed articles; the fourth section discusses the result of the study. Finally, the conclusion of the research presented.

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2. Research Methods

2.1. Search Strategy

An in-depth investigation was carried out to identify the relevant studies on the topic of the participants' knowledge sharing behavior in OCs. The selected studies retrieved from the reliable online databases: Science Direct, IEEE Explore, Springer Link, and Web of Science using queries including all the relevant keywords. The keywords consist of four combination groups: (1) "online community", "virtual community"; (2) "participant, and "member". "Consumer" and related synonyms; (3) "knowledge sharing, "knowledge contribution, "participation," and similar search terms; (4) "factors", "determinants", and motivation". The conducted review spanned from 2006 to 2017. This review period is suitable for the topic because it covers a large scale of factors of knowledge sharing in the age of the Internet and web services. 408 relevant studies are selected after an in-depth search.

2.2. Inclusion and Exclusion Criteria

The article selection based on the following inclusion criteria. (1) The article is written in English; (2) The research employs qualitative, quantitative, or mixed methods; (3) The study aimed to investigate factors that influence OCs members

2.3. Article Selection Strategy

The article selection strategy involved three main stages:
Stage 1: Collecting all articles from online databases as defined in the search strategy.
Stage 2: Filtering duplicated, non-English, non-quantitative, and non-qualitative studies
Stage 3: Selecting articles based on their relevance to the main purpose of this work, with a particular focus on studies that explore knowledge sharing determinants in OCs.

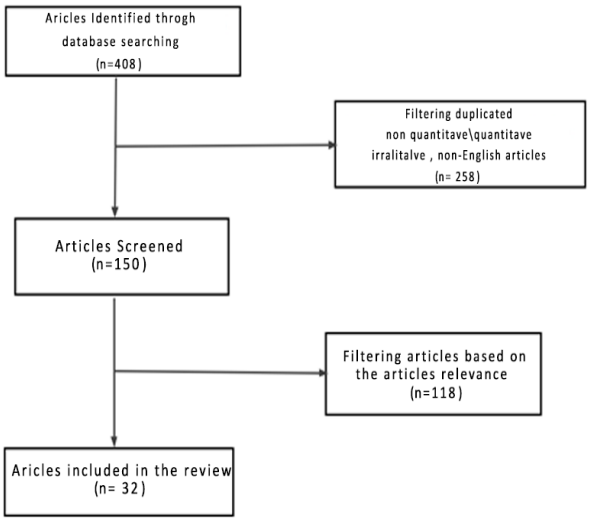


Fig. 1: Flowchart of study selection including
Refer to Figure (1).

In Stage 1, the aforementioned electronic databases are used along with Google Scholar to search for all the combinations of keywords and ultimately retrieve related articles. 408 articles obtained. In Stage 2, the articles are filtered according to the inclusion criteria. The total number of articles is reduced to 150. In Stage 3, the obtained articles are screened further by identifying the content and selecting those related to the target topic. Only the studies on the factors that influence members to share their knowledge in OCs are chosen. Exactly 118 articles are excluded at this stage. Thus, 32 articles are considered for analysis

3. Results

3.1 Theories and Models in Previous Studies:

The majority of the selected articles investigated the knowledge sharing behavior in OCs based on personal, psychological, and technological theories and models and could be classified into three main categories: individual, social, and technological. Personal theories include personal motivation theories, expectation confirmation, the theory of reasoned action (TRA), and the theory of planned behavior (TPB). Social theories include social context-related theories, such as social capital theory, social cognitive theory, and social exchange theory. Technology Acceptance Model (TAM) is the most used model in analyzed the technological perspective in the reviewed articles. Table (1) illustrates the different types of theories and models in the reviewed articles.

3.2 Factors Affecting Participants' Knowledge Sharing Behavior in OCs

The articles were analyzed and screened to identify the different factors that influence users to share and exchange their knowledge in OCs. We classified the factors into three main themes: individual, community, and technological themes.

3.3. Individual factors

Based on our analysis, the most cited individual-related factors for knowledge sharing in OCs are Knowledge Self-Efficacy, Expected mutual benefit, image enhancement (or reputation), and the less mentioned factors are empathy and altruism. These two factors influence the members' intention to share their knowledge on online health community where the participants share their knowledge, not for material rewards. Instead, they motivated by sympathy and emotion to help other members of the community.

3.4. Community Factors

Aside from achieving personal benefits, participants might motivate by social or community-related factors. The community factors are those factors that related to the community or customer group. Based on the analyses of the selected articles, the most cited community-related factors are social trust, sense of belongingness (or sense of community), group norms (shared goals), and social tie

3.5. Technological Factors

The third category related to the mechanism of knowledge sharing which in most cases, an online platform system: web-discussion board, or specific web portal or website dedicated by organizations, or customer. The technological factors that affect users to participate in OCs are the perceived ease of use and perceived usefulness of the online sharing software. Additionally, Perceived privacy have impact on user's decision to participate in OCs sharing process.
Table (2) illustrates the factors that influence users' knowledge sharing behavior in OCs.

4. Discussion

Based on the study conducted by by [21] on on 2006 , An online community could be viewed as "socio-technical" system which involving interactions among the characteristics of three main components: the users (the members of OCs), the group (the

community), and the system (online sharing platform). Therefore, this study attempted to analyses the reviewed articles based on the perspectives of the following three components: 1- the users' characteristics, 2-the community-related characteristics, 3- online sharing platform's characteristics. In the context of knowledge management research, several theories were applied to examine individual knowledge sharing behavior, but they mostly focused on the main drivers influencing sharing behavior from a personal perspective. Majority of the selected studies analyzed the participants' characteristics based on personal motivation theories and expectation confirmation. For the social (or community-related features) the selected articles based on social theories such as social capital theory, social cognitive theory, and social exchange theory.

The majority of the reviewed articles have focused on participants' characteristics and community-related characteristics. Among the participants' characteristics are the intrinsic motivation: such as knowledge self-efficacy, enjoyment of helping others. Besides that, the user's decision might allow for extrinsic factors: such as expected benefits from knowledge sharing like rewards, payment, or for reputation enhancement. In a specific type of online community (such as online health community), the participation motivated based on another personal factor like empathy, and altruism. That is because the members of that community are not looking for an extrinsic return. [22] Claimed that participants might join an online health community with the aim of achieving both individual and community benefits. The authors argued that, in the knowledge sharing process, the individual usually tend to maximize their benefits and minimize their costs.

Another viewpoint proposed that motivation comprises two factors : extrinsic and intrinsic motivation factors [23]. studies (e.g. [24], [25], [8], [11], [26], [22], [14]) reported that, Knowledge self-efficacy has a significant influence on knowledge sharing behavior in OCs. Other studies : [9], [27], [28], [4], [29] reported that extrinsic benefits such as expected mutual benefit is an essential determinant for knowledge sharing in OCs. Some other studies examined the general enablers for members knowledge sharing in online health communities and found that empathy and altruism plays an important role when member decide to share their health-related knowledge and experience with other members in the community.

Several studies examined the effect of the community features (groups' characteristics) on the users' intention to share their knowledge in OCs. For instance [30], [26] [31], [5], [5] claimed that the interpersonal trust among the community members could have a noticeable impact on knowledge sharing motivation in OCs. Shared characteristics like goal, language, and culture encourage the member to exchange their knowledge with each other [27], [29], [32], [33], [26]. Some other studies reported that the expected relationship [12], [29], and the subjective norm [34], [35] influence members' knowledge sharing in OCs.

Some research investigated how the user interface affects the user intention to participate or leave the community. With easy-to-use interface designing, the users tend to actively participate in knowledge contribution [13], [36], [34]. The perceived usefulness [21], [13], [34] also effect users' motivation to share their knowledgein OCs. According to the reviewed article, the privacy is not a considerable concern of the users when they decide to participate in the knowledge sharing process in OCs [21].

5. Limitations

The literature aimed to outline the factors affecting participants to share their knowledge in all the possible forms of online communities, which consider a difficult task because there are many different types of OCs covering a variety of contexts and domains and the factors vary from each perspective and each context. Therefore, it is recommended to examine the participants' knowledge sharing factors based on the context and the type of OCs.

Table 1: Theories used in the selected studies

The theme of the Theory	Theory	Number of references	Literature
Personal	TRA	4	[37] , [38] , [32], [34] , [12]
	TPB	4	[37] , [38], ,[34] , [32]
	expectation confirmation theory	1	[25]
	Personal Motivational theory	1	[21]
Social	Social Capital theory	12	[3] , [5] , [28] , [9], [33],[38] , [14] , [26] , [11] , [6] , [19] , [32]
	Social Exchange theory	6	[21], [25] , [29] , [27] , [8] , [28] , [22]
	Social Cognitive Theory	7	[3] , [37] , [29] , [27] , [8] , [28] , [11]
	Social influence theory	2	[10], [12]
	social identity theory	1	[8]
	Dynamic theory	1	[39]
Technology	TAM	4	[21] , [34] , [34] , [36]
	Media richness theory	1	[38]

Table 2: Factors that affect participant' knowledge sharing in OCs in the selected studies

Theme	Determinant	Citation (s)	Reference
Personal	Knowledge Self-Efficacy.(Intrinsic motivation)	14	[21] , [13] , [27] , [28] , [37] , [4] , [29] , [24] , [25] , [8] , [11] , [26] , [22] , [14]
	Expected reciprocal benefit (Extrinsic Benefits)	11	[21] , [40] ,[9] , [27] , [28] , [4] , [29] , [41] , [25] , [8] , [42] , [6] , [32]
	Reputation / image enhancement(Extrinsic Benefits /motivation)	8	[40] ,[9] ,[12] ,[28] , [24], [8] , [32] , [22]
	Enjoyment of helping. (Intrinsic Benefits)	7	[21] , [40] ,[12] , [28] , [4] , [43] , [25] , [8]
	Personal outcome expectation / Expected rewards (Extrinsic benefits)	5	[37] , [4] , [24] , [32] , [11]
	Empathy	2	[22] , [44]
	Altruism	2	[22] , [44]
Social	Social Trust	12	[27] , [30] , [29] , [38] , [23] , [12], [12] , [3] , [32] , [35] , [39] , [41]
	Sense of belonging / sense of community / belongingness Social Identity	11	[21] ,[35] , [8] , [5] , [6] , [45] , [30] [12] ,[35] , [10] , [38], [45]
	Group norm Shared goal/ shared language /shared culture	10	[12] , [10] , [21] , [30] [39] ,[27] , [29] , [32] , [33] , [26]
	Subjective norm	7	[39], [39],[12] ,[34] , [35] , [37] , [10]
	Social network , social tie (interaction) , community tie	5	[9] , [6] , [32] , [33] , [26]
	Expected relationship	4	[40] ,[12] , [29] , [24]
Technological	Perceived ease of use	5	[21] , [13] , [36],[34] , [41]
	Perceived usefulness	4	[21], [13] ,[34] , [36]
	Privacy	1	[21]

6. Conclusion

This study examined the existing research stream on OCs to understand the antecedents, which influence the participants to exchange their knowledge with others in online community platform. Our analysis of existing studies revealed that the most cited factors affecting customers to share and exchange their knowledge in OCs are individual factors (enjoyment in helping others, knowledge self-efficacy), community factors (sense of belonging, subjective norm, social trust, group norm, and social network), and technological factors (perceived usefulness, perceived ease of use, and privacy). The less cited elements are empathy, altruism, and privacy. The factors: empathy and altruism used in online health communities, and this reflects the case where members share their health experience and advice with others based on their internal factors and not for kind of rewards or any other benefits. Therefore, this type of factors should be considered in the future studies, especially for online health communities. Additionally, the field online health communities and the motivation factors of knowledge sharing should be investigated in the future research. Existing studies have mostly focused on psychological theories, such as social exchange, social cognitive, social capital, and behavioral theories (TRA and TPB). Consequently, extensive research should be carried out to ana

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