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# An empirical study of the motivations for content contribution and community participation in Wikipedia



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#### ABSTRACT

Internet users' participation and contributions are critical to the growth of Wikipedia. Based on self-determination theory, this study investigates the impacts of several motivational factors on two different types of user behaviors: content contribution and community participation. The research findings show that content contribution is more often driven by extrinsically oriented motivations, including reciprocity and the need for self-development, while community participation is more often driven by intrinsically oriented motivations, including altruism and a sense of belonging to the community. This paper contributes empirically to the research on Wikipedia, and it has practical implications for open content system development and management.

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#### 1. Introduction

The prevalence of open content on the Internet, which is usergenerated digital information produced in an open and collaborative manner, has dramatically increased over time [15]. Open content is defined as "content possible for others to improve and redistribute and/or content that is produced without any consideration of immediate financial reward - often collectively within a virtual community" [14]. Currently, Wikipedia, the largest online open content system, has become a means of knowledge acquisition and knowledge diffusion over the Internet. Over 500 million global users access Wikipedia without needing to pay to access and use the content. Numerous people consider Wikipedia to be an authoritative source of knowledge [52]. Wikipedia is different from traditional encyclopedias, such as the Encyclopedia Britannica, which are organized, written, and edited by established scholars. Instead, Internet users develop and maintain the content on Wikipedia on a voluntary basis. Wikipedia users participate in writing encyclopedia articles in a spontaneous manner without the expectation of monetary reward [19,52].

Encouraging user participation is critical to the sustainability and success of the Wikipedia system. The Wikipedia website provides basic functions for users to write and edit articles. It also

includes features of an online community, such as forums, bulletin board systems, and mailing lists, with which users are able to communicate and interact with each other. Users write original articles, edit and improve existing articles, provide quality assurance, participate in policy setting, and engage in community-building and maintenance activities [35]. Thus, there are different types of participative behaviors conducted by Wikipedia users. The first is writing and editing articles, which contributes to the creation and growth of encyclopedia content [19]. The second is community activities, such as answering questions, discussing community issues, taking part in voting and community administration issues, and offering ideas for community development [30,69]. The second type of behavior is important because voluntary participants develop Wikipedia in a collaborative manner. It is necessary for these participants to be involved in the management and coordination of the development process.

Prior studies of Wikipedia examine how Wikipedia users' motivations affect their participation and contributions. For example, people may contribute to Wikipedia for both tangible and intangible benefits, such as career development, knowledge learning, personal enhancement, enjoyment, and self-achievement [52,59,61]. Some research also reveals the important role of altruism, which is a dominant driver for "Wikipedians" [61]. Social and relational factors, including a sense of belonging and reciprocity, also have a significant impact on Wikipedia [19].

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However, these prior studies do not differentiate between the two types of contribution behaviors mentioned above. They mostly focus on participants' contributions in terms of writing and editing articles. Previous research indicates that members in a virtual community of practice (VCoP) may contribute to the community in multiple ways, such as offering personal knowledge, helping the owner or manager build the community, and/or investing effort in maintaining the health of the community. Participants with different motivations are likely to contribute in different ways [12]. A complicated knowledge base such as Wikipedia requires different Web 2.0 features and functions. Shang et al. [65] find that users of different Web 2.0 features exhibit different motivations for participation. Research on an organization's Wikipedia system also suggests that users contribute in different ways and that their contributing behaviors are driven by different motivations [79].

Users who contribute to Wikipedia consider adding or editing content to be a way to gain knowledge and develop skills [52]. When a user contributes by adding or editing an article, the contribution is immediately visible in the form of digital content on Wikipedia. Constantly adding content to Wikipedia may help a user achieve prestige and recognition in the system because Wikipedia displays the ranking of top contributors for a certain period of time [19]. Thus, the user may be confident that offering content on Wikipedia will result in some tangible form of recognition. However, these contributors may not obtain any direct rewards through community participation, such as responding to posted questions, voting for community issues, or offering ideas for system development. In addition, individuals have more freedom in community activities than in content editing, which is subject to standardized procedures and constraints by the Wikipedia system [65]. We posit that the same motivational factors may exhibit differential effects on content contribution and community participation in Wikipedia. We believe that a systematic investigation of the respective effects of motivational factors is an important step toward a more complete understanding of user motivations and behaviors in Wikipedia.

We draw upon self-determination theory as the theoretical lens to analyze user motivations and their effects on content contribution and community participation behaviors. Based on the basic tenet of the innate human need for competence, autonomy, and relatedness, self-determination theory explains human behavior by specifying different categories of motivations: external regulation, introjected regulation, identified regulation, integrated regulation, and intrinsic motivation. Although the theory has been adopted to identify various motivational factors and examine their effects on knowledge contribution and participation in online environments [47,63], no study has revealed the motivational factors and their differential effects on the two different types of contribution behaviors in Wikipedia. We aim to conduct a systematic investigation to address the following research question: How do motivational factors affect content contribution and community participation differentially in the context of Wikipedia? The findings may deepen the understanding of the links between motivations and participative behaviors in Wikipedia and offer practical implications for the development and management of an open content

The remainder of the paper is organized as follows: first, we review self-determination theory and the literature on Wikipedia. Second, we develop a research model and research hypotheses, followed by a research method. We then present the results of our data analyses. Finally, we conclude with a discussion of the findings and their theoretical and practical implications.

#### 2. Literature review and theoretical background

#### 2.1. Wikipedia research

Online encyclopedias have experienced rapid growth in the last ten years. Currently, Wikipedia, the largest online encyclopedia, contains millions of articles in over forty different languages, and it has become an important online knowledge repository for Internet users worldwide. In addition, other online encyclopedia systems are also available in different languages and countries. For example, Baidupedia, the largest Chinese online encyclopedia, has over one million articles and is accessed by tens of millions of Internet users in China.

Recently, some research has examined the organization and process of open content collaboration, most of which studies Wikipedia. Wikipedia demonstrates the feasibility and effectiveness of bazaar-style knowledge creation and development [71] in which human knowledge is recorded and organized through an open, collaborative process [67]. In Wikipedia, high-quality information is assured because there are established procedures for evaluating quality, detecting errors, and making corrections [69]. The accuracy and reliability of Wikipedia compares favorably with that of traditional encyclopedias [28,49]. Wikipedia currently plays an important role as an online knowledge repository and information source. It is popular not only for lighter topics such as entertainment but also for more serious topics such as health and legal information. Scholars, librarians, and students are common users of Wikipedia [55]. The existing research reports that a majority of college students use Wikipedia for quickly checking facts and learning background information and that most students have a positive experience with Wikipedia [45]. In addition, Wikipedia has an impact on the social economy, such as the financial market [77]. Research also indicates the limitations of Wikipedia. For example, Wikipedia editors rely a great deal on sources that are easy to find and read; thus, the contents are not inclusive enough [48]. In addition, Wikipedia has limitations to their references and citations and thus may not be suitable for serious reference work [50].

Research has been conducted on the success and performance of the Wikipedia system. Social networks have a significant impact on participants' performance in Wikipedia [56,80]. Group size, the shared experience, heterogeneity or diversity among members, member activeness, and the balance of roles played by members (e.g., administrative vs. content-oriented) are found to have significant impacts on performance, which is measured as the number of high-quality articles on Wikipedia [6,14]. In addition, the mixture of new and experienced participants increases the likelihood of system success [62]. Cultural differences also exist in the Wikipedia community, and they have an influence on the quality of articles and performance of the Wikipedia system [13,35]. Meanwhile, both formal and informal governance mechanisms, such as refined policies, norms, consensus building, and discussions among members, are important to the Wikipedia community [30,64,75]. Conflicts among members should be managed because they negatively affect the output of participation [6,7].

The viability and success of the Wikipedia system highly depends on users' motivations for participation [82]. Previous research has identified various motivational factors for users to contribute to Wikipedia, which include extrinsic factors such as favorable reputation building, knowledge learning, and self-development [52,57] and intrinsic factors such as altruism, enjoyment, and the ideology of free knowledge [19,52,59,61]. In addition, social factors, such as reciprocity, membership/sense of belonging in the Wikipedia community are also important motivators for participating in the Wikipedia system

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