# A value-justice model of knowledge integration in wikis: The moderating role of knowledge equivocality

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## ARTICLE INFO

## ABSTRACT

The sustainability of Wikis heavily relies on the quality of knowledge that is collaboratively integrated by volunteers. Although the factors influencing one specific knowledge contribution or knowledge-sharing behavior (e.g., adding) have been widely examined, the research on the factors that affect another type of knowledge contribution, i.e., knowledge integration, is still rare. Considering the collaborative nature of knowledge integration, beyond the value-centric logic of knowledge contribution, we propose a value-justice model of knowledge integration. We further identify the boundary conditions under which the proposed value-justice model works by investigating the moderating role of knowledge equivocality. A survey was conducted in a well-known Wiki-based website in China, namely, Baidu Baike, to test the research model and hypotheses. Our results show that both perceived justice and perceived value influence knowledge integration, which in turn affects knowledge quality, and knowledge equivocality strengthens the relationship between perceived justice / perceived value and knowledge integration and the relationship between knowledge integration and knowledge quality. Implications for research and practice are also discussed.

## 1. Introduction

The rapid development of the Internet has changed the way in which people create, share, and use information (Matschke et al., 2013; Yang & Lai, 2010), especially with regard to the emergence of Wikis (Santana & Wood, 2009). Wikis as a "collaboratively created and iteratively improved set of web pages" (Wagner, 2004, p. 265) enable users not only to add the content of their domain expertise but also modify the knowledge already contributed to the Wiki to advance the knowledge quality (Majchrzak et al., 2013). Majchrzak et al. (2013) classified knowledge contribution into two types: knowledge adding and knowledge integration. Knowledge adding refers to the extent to which users add new content to knowledge sharing platforms (e.g., Wikis), while knowledge integration is defined as "the recombination of knowledge by merging, categorizing, reclassifying, and synthesizing existing knowledge" (Majchrzak et al., 2013, p. 456).

Unlike knowledge integration that is controlled by privileged individuals through centralized and formal organizational structures in organizations, knowledge integration in the Wiki context is operated in a decentralized way such that anyone is allowed to modify others' contributions as well as one's own (Majchrzak et al., 2013). As Wiki

users may hold different viewpoints, it is very possible that there will be conflicts about how to edit Wiki content (Arazy et al., 2011, 2013). In this case, the facilitation of effective collaboration or knowledge integration among Wiki users becomes a critical issue for Wiki sustainability.

Although the prior knowledge contribution or knowledge sharing studies have shed light on the underlying mechanisms that explain adding-type knowledge contribution behavior, the theoretical understanding of knowledge integration is still underexplored (Arazy et al., 2011; Majchrzak et al., 2013). Specifically, the prior knowledge contribution (knowledge adding in particular) research, following a *value-centric logic*, examines the impacts of a variety of value perceptions including extrinsic rewards, reputation or images, reciprocity, sense of self-worth, and enjoyment in helping others on knowledge contribution intention or behavior (e.g., Bock et al., 2005; Chiu et al., 2006; Kankanhalli et al., 2005b; Sun et al., 2015). In this study, which considers knowledge integration to be a special type of knowledge contribution (Majchrzak et al., 2013), the value perceptions relevant to knowledge contribution may also be applicable to knowledge integration because when Wiki users make decisions about whether to engage in knowledge integration behavior, they will also evaluate the values or

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benefits derived from the behavior (Cheung et al., 2015). However, there are still some differences between the adding-type knowledge contribution and knowledge integration, which calls for clarification by considering the unique features of knowledge integration.

Specifically, different from simply adding one's specialized domain knowledge to a knowledge repository, which will not lead to the modification of the knowledge contributed by others, knowledge integration involves the reorganization, modification, and deletion of others' contributions (Yates et al., 2010). It suggests that knowledge adding behavior can be regarded as an *independent* behavior that is only associated with an individual's cognitive evaluations about his or her *own* behavioral consequences (i.e., self-interest), while knowledge integration is an *interdependent* behavior that is related to the interests of both knowledge integrator and those Wiki users whose contributed knowledge is modified (Majchrzak et al., 2013; Yang & Lai, 2010; Zhao et al., 2013). The interdependent nature of knowledge integration suggests that one knowledge integration action may cause the re-allocation of resources or benefits of stakeholders, and conflicts may occur during the benefit allocation process (Arazy et al., 2011, 2013). As one Wiki integrator's own benefits and the benefits of others whose contributed knowledge is modified are connected, Wiki users will consider the benefits of both sides to evaluate whether they are fairly treated (Lai & Yang, 2014). In this case, Wiki users may not only consider their own benefits (e.g., value-centric logic), but they may also consider the fairness of benefit allocation through a social comparison mechanism. Therefore, justice theory, which is developed to explain disputes or conflict resolution (Kerwin et al., 2015; Kidwell et al., 2012; Richard et al., 2002) and captures the social comparison mechanism (Adams, 1963), should be considered to complement the value-centric logic. Thus, the first research question is as follows:

**RQ1.** Will perceived justice and perceived value jointly affect knowledge integration in Wikis?

To address the first research question, we will propose a value-justice model of knowledge integration that posits perceived value and perceived justice as two antecedents of knowledge integration that further affect knowledge quality. A follow-up question relevant to the generalizability of the proposed model is about the boundary conditions under which the value-justice model works. A key assumption about the important role of knowledge integration and perceived justice is that there may be conflicts during the collaborative editing process (Arazy et al., 2011, 2013). However, for different types of knowledge, the potential conflicts during the knowledge integration process may vary (Neill & Rose, 2007), suggesting that the impacts of perceived justice and knowledge integration may be determined by knowledge features. Specifically, knowledge equivocality, which captures the extent to which the knowledge is unclear, uncertain, and/or ambiguous (Daft & Lengel, 1986; Lim & Benbasat, 2000), is selected as the construct given the positive relationship between equivocality/uncertainty and conflict (Weber & Mayer, 2014; Weingart et al., 2015). Thus, we put forward the second research question as follows:

**RQ2.** Will knowledge equivocality moderate the relationships proposed in the value-justice model?

This study makes two major theoretical contributions. First, it distinguishes knowledge integration from prior knowledge contribution behavior (e.g., adding) by highlighting the interdependent nature of knowledge integration and proposes a value-justice model of knowledge integration beyond the value-centric logic to address this contextual feature. Second, it identifies the boundary conditions under which the value-justice model works by investigating the moderating role of an important knowledge feature, e.g., knowledge equivocality.

The rest of the article is structured as follows. First, the prior literature on knowledge contribution is reviewed, and theoretical foundations such as cognitive evaluation theory and justice theory are introduced. Second, the research model is developed, and the underlying

mechanisms of the hypotheses are explained. Third, the data collection process is described, and the data analysis results are reported. Finally, the key findings, limitations, theoretical and practical implications are discussed.

## 2. Theoretical background

### 2.1. Knowledge integration

Knowledge contribution or knowledge sharing, in general, captures a variety of behaviors through which knowledge is exchanged among individuals in organizations or virtual communities (Chiu et al., 2006; Kankanhalli et al., 2005b; Majchrzak et al., 2013). Although some scholars may treat knowledge sharing behavior as the combination of knowledge contribution from the knowledge contributor side and knowledge seeking from the knowledge seeker side (e.g., He & Wei, 2009), most prior studies use knowledge contribution and knowledge sharing as interchangeable concepts (e.g., Bock et al., 2005; Kankanhalli et al., 2005b; Shen et al., 2018a; Wasko & Faraj, 2005). Similarly, in this study, we focus on the knowledge contributor's behavior and use knowledge contribution and knowledge sharing interchangeably.

In the prior studies, knowledge contribution has been examined in the research context of electronic knowledge repositories (EKR) in organizations (e.g., Kankanhalli et al., 2005b), online communities of practice (CoP) or virtual communities (VC) (e.g., Chen & Shen, 2015; Chiu et al., 2006), and social question and answer (Q&A) websites (e.g., Lou et al., 2013). With regard to technological constraints, knowledge contribution in these research contexts is mainly based on a *knowledge adding* mode, such that knowledge contributors can contribute their own domain expertise to the EKR or VC either actively or reactively to respond to knowledge seekers' requests. Every knowledge contributor independently contributes his or her knowledge and does not change the knowledge contributed by others. In contrast, Wikis differ from earlier knowledge management technologies in that they enable *collaborative* knowledge contribution such that knowledge contributors can not only add their own knowledge but they can also integrate knowledge already contributed to the Wiki to further improve the knowledge quality (Majchrzak et al., 2013). The emergency of Wiki enlarges the scope of knowledge contribution by including knowledge integration as another important knowledge contribution type beyond knowledge adding.

Knowledge integration differs from knowledge adding in several ways. First, knowledge adding is an *independent* knowledge contribution behavior, while knowledge integration is an *interdependent* knowledge contribution behavior. Knowledge adding is helpful for increasing the total amount of knowledge; however, it does not modify the extant contributed knowledge, while knowledge integration leads to the reorganization, modification, and deletion of the knowledge contributed by other Wiki users (Majchrzak et al., 2013), linking the knowledge contribution behaviors of different knowledge contributors (Beck et al., 2015; Tiwana & McLean, 2005).

Second, the key determinants of knowledge quality are different. Knowledge quality is defined as the extent to which an individual believes that a knowledge sharing platform provides precise and accurate content that meets knowledge needs (Durcikova & Gray, 2009). At different knowledge sharing platforms, knowledge quality may be ensured by different knowledge contribution activities. For EKR or VC platforms, as knowledge is independently contributed by different knowledge contributors without explicit knowledge integration, knowledge quality relies on whether every knowledge contributor tries his or her best to codify his or her domain expertise. The prior studies on knowledge quality focus on the different impacts of value perceptions (e.g., rewards, reputation, sense of self-worth, consistency) on knowledge quality and knowledge quantity (e.g., Chiu et al., 2006; Lou et al., 2013; Shen et al., 2018b). However, they pay less attention to the