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Using interactive systems for knowledge sharing: The impact of individual contextual preferences in China

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ABSTRACT

Based on the communicative ecology framework and theories related to guanxi and communication context in China, we investigate the moderating effects of individual preference for communication context (IPCC) on knowledge sharing via interactive systems (KSIS) behavior. Drawing on survey data from a hotel chain's employees, we explore how guanxi elements drive knowledge sharing (KS) behavior and enhance KS outcomes. Our data demonstrate that IPCC significantly moderates the effect that KSIS has on KS outcomes, but the IPCC has a direct and negative impact on KS outcomes. We explain these seemingly contradictory findings and their implications for research and practice.

1. Introduction

Knowledge management (KM) is widely accepted as crucial for organizations that wish to promote best practices and reduce redundant reinvention efforts [45]. Effective competition in a knowledge intensive industry depends on employees not guarding or hoarding knowledge as personal secrets [40]. Furthermore, the dynamic nature of competition demands that the right knowledge be held in the right place at the right time. We argue that knowledge sharing is not an isolated behavior because it requires a method for realizing the behavior, which can be through face-to-face or via technology. In our study, we are interested in technology-facilitated knowledge sharing, specifically when mediated by interactive systems. Facilitated by IT, the right knowledge can equally be communicated via formal systems such as knowledge repositories or informal interactive systems such as instant messengers, blogs, or wikis. To date, KM research has largely focused on organizational-level or community-level contexts characterized by an emphasis on the IT-supported codification of explicit knowledge; only a few studies have investigated non-codified knowledge sharing and knowledge exchanges via interactive systems. This trend is perhaps not surprising because codifiable knowledge has long been recognized as a source of strategic and competitive advantage [34], with IT enabling "collaboration among different units and individuals unconstrained by the boundaries of geography and time" [40]. More importantly, we argue that regardless of the existence of an organizational-level knowledge repository or a company-wide knowledge community, informal knowledge sharing using interactive systems prevails in companies and facilitates business operations and innovations, largely due to its highly dynamic and individualized conversations. Nevertheless, the use of interactive systems for informal knowledge sharing is significantly increasing in organizations and beneficially complements formal KM practices, even though this domain is theoretically under-explored (cf., [8]).

In addition to a reliance on company norms to drive KM behavior, individual employees may also choose to engage in knowledge exchange for their own reasons even though it may not lead to higher remuneration. In fact, both individual preferences and cultural aspects influence KS practices, which is notably the case in China. The prevailing Chinese culture has an embedded preference for informal and tacit forms of information [8,43]. Furthermore, the focus on KM in China parallels China's increasing importance in the global economy. Unfortunately, most prior knowledge-focused research in China has not examined indigenous cultural practices but instead has focused on comparisons with other countries [7] and/or on the inward transfer of

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knowledge [39]. Such studies are commonly informed by Western theories, assumptions and priorities and thus look into China through an etic (externally informed) lens, rather than studying China emically (from the inside). Important exceptions are Young et al. [64] and Davison et al. [8]. Examining KS from the emic perspective by including indigenous, culturally related constructs can provide richer contextual information and also more insightful theoretical implications, as explained below.

Comparative research is valuable for cross-cultural purposes, but it typically does not allow for the identification of the full richness of knowledge exchange behavior in the Chinese context. Key components of the Chinese context that have received less attention in the research literature, yet are central to the way Chinese employees share knowledge, are guanxi and context. These two constructs have received much less attention from prior KM studies, the majority of which have been conducted in Western companies. Nevertheless, Davison et al. [8] explored the role of indigenous Chinese variables, including guanxi, in a qualitative study of knowledge exchange behavior in two public relations firms in China. However, we have not found evidence of a larger-scale survey of employee attitudes toward knowledge sharing in China that explicitly considers indigenous Chinese variables (cf. [57]). As we explain in greater detail later, guanxi refers to the reciprocally obligatory relationships that Chinese employees maintain with selected others; they leverage these relationships as they communicate, solve problems and help others. Accordingly, we suggest that the guanxi elements exert an important influence in the Chinese context of knowledge sharing.

Context, on the other hand, refers to an individual's preference for communications to be implicit or explicit [20]. In a high-context culture, much of the meaning in communications can be inferred from the context itself. It is unnecessary to communicate in precise detail because interlocutors share sufficient common knowledge to ensure that a few words, or even a nod or a wink, can convey precise information. In a low-context culture, on the other hand, little common knowledge can be assumed between interlocutors, and thus it is necessary to write or speak meanings explicitly in words. In this study, we explore the technology-based knowledge sharing (KS) behavior of Chinese employees at a major international hotel chain (code-named Ravine). We focus on the influence of guanxi elements on employees' knowledge sharing practices with their network members mediated by interactive systems and the moderating effects of context (high or low) on both guanxi elements and the ultimate outcomes of KS: individual work performance and collective network efficacy. Collective network efficacy is included as one of the outcome variables because the focus of this study is on relationship networks. Furthermore, this choice is consistent with the perspective of communicative ecology, as explained below.

In terms of research foundation, we employ the communicative ecology framework (CEF) [1,13] as the overarching theoretical lens for conceptualizing the interweaving of technology, discourse and communication context. The concept of an "ecology of communication" was first put forward by Altheide [1] and later developed into the CEF and applied in sociology and communication/media studies [13,23]. The CEF has received only minimal attention in the information systems (IS) discipline [9]. However, the CEF provides us with a legitimate and logical basis for identifying theoretical constructs and linking them to a homological model regarding communication context and IT-enabled knowledge sharing in companies where both individual and network performance are at stake.

Specifically, this theoretical lens enables us to answer the following question: What are the impacts of indigenous cultural traits, including guanxi and the individual preference for communication context, on the technology-based knowledge sharing behavior of professional employees and their work-related outcomes? Following this introduction, we review the relevant literature before proceeding to the theoretical development and hypotheses. We then describe the research context and introduce our data collection and analytical techniques. The results of the study follow, together with a discussion of the findings. Finally, we conclude the paper with contributions, limitations and suggestions for future research.

2. Literature review

There are several areas of literature that are relevant to this research, including the communicative ecology framework (CEF), guanxi, context and knowledge sharing via interactive systems (KSIS). We briefly review each of them in turn, providing sufficient detail to allow for the development of hypotheses in the following section.

2.1. Communicative ecology framework (CEF)

The concept of communication ecology [1,2] was developed in the field of communications and media research to analyze and interpret the interweaving of social interactions, discourse and communication media and technology among individuals, collectives and networks in physical and digital environments. Accordingly, a communication ecology that refers to the communication process in a context involves three dimensions: "(1) an information technology (IT); (2) a communication format; (3) a social activity" ([1], p. 667). These three dimensions are also often referred to as the technological, discursive and social layers [13] in a communicative ecology.

Specifically, *IT* in Altheide's study simply refers to "those external devices, procedures that are used in helping create, organize, transmit, store, and retrieve information" ([1], p. 668). Technology here covers all communication, not only that involving a form of technology (any mechanical devices external to the people engaged in a conversation), but also including the traditional oral format of conversations. Therefore, the technological layer comprises communication media and technologies [13]. On the other hand, *format* refers to "the selection, organization, and presentation of experience and information" ([1], p. 668). This discursive layer [13] suggests that communication is organized through certain patterns, shapes, and looks, which Altheide refers to as formats. The social layer refers to people and the various social structures with which they identify themselves. Such structures can range from informal personal networks to formal institutions or organizations, for example, groups of friends, formal communities, organizations and companies [1,13].

The fundamental premise of the CEF is that changes in communication media have mediated and also transformed social relationships, activities and processes (see also [22]). Because new media and communication technology have the ability to change the flow of information, the social interaction between individuals, social actors, organizations and governments has been affected, with consequent changes in the way in which power is constructed, maintained and challenged [49]. Although the CEF is derived from the concept of communication ecology, there is no single agreed upon definition of a CEF, and various approaches/methodologies have been used to understand and apply this framework in various contexts, as explained below.

Making use of the three dimensions (in some studies also referred to as the three layers) of communicative ecology [1,2], researchers have investigated and interpreted communicative ecologies at different levels, including individuals, organizations, communities, the urban context, the domestic sphere, governments and social activities of protest as show-cases in a special