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The Influence of Knowledge Sharing Behavior and Transactive Memory Systems on Innovative Work Behavior: A Conceptual Model

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Abstract—Although knowledge sharing (KS), the key to creativity and innovation, are increasingly common in organisations, research on the relationship between knowledge sharing behaviour (KSB) and transactive memory system (TMS) and its effect on innovative work behaviour (IWB) is relatively rare. Prior studies have reported that KS influences IWB in organisations. However, the effect of KSB on IWB and the joint influence between TMS on KS and IWB have not been adequately investigated in past research. Therefore, the goal of this research-in-progress is to propose a conceptual model comprising three construct domains including KSB, TMS quality and IWB to examine the impact of the KS practices of employees on their IWB in organisations. We advance to conduct a survey to examine our discussion of the proposed conceptual model. It is expected that this research will contribute to the deeper understanding of the effects of KSB and TMS on IWB within organisation. Implications and future research are also proposed.

Keywords—knowledge sharing behaviour; innovative work behaviour; transactive memory systems

I. INTRODUCTION

Knowledge sharing (KS) provides chances to make the best use of organization ability to meet market demands and creates solutions that yield competitive advantages for businesses [24, 30]. KS is a difficult concept to define, because it has been examined from multiple perspectives. According to Schwartz [32] KS can be defined as “the exchange of knowledge between and among individuals, and within and among teams, organizational units, and organizations”. It consists of a set of shared understandings associated with facilitating workers acquire applicable information and forming and utilizing knowledge networks within teams, groups or organizations [15, 24]. In addition, KS take places at both organizational and individual levels. At the organizational level, KS is to capture, restore, reuse, and transfer experience-based knowledge within a team, a group or the organization. That knowledge, then, can be made available to other businesses in the future. In contrast, at the individual level, KS is to talk to co-workers to support them get something done better or more efficiently. Several studies have shown that KS is vital to organizations because it facilitates them to improve innovation performance [24, 31] and thus, focuses on innovation in organizations has become more necessary in order to be successful in complex organizations [17]. There have been many ways to define innovation to restrict to new methods, ideas, products, processes and organizational applications [9]. Nevertheless, in general, innovation can be examined positively since it is related to the formation of value for both individuals and organizations [26]. Janssen [16] stated that innovation occurs when a person generates, promotes, and implements new ideas or methods which are essential parts of individuals’ innovative work behaviour (IWB). IWB in the workplace consists of three different behavioral tasks: idea generation, idea promotion, and idea realization. This is because innovation processes are generally specified by discontinuous activities [19, 16]. Besides, when individuals sharing their knowledge in a team or group they often face with the major challenges that is the awareness of “who knows what” and “who does what” [5]. To overcome these challenges, transactive memory system (TMS) has been proposed as one of the solutions by past study. The sharing of team knowledge has been concentrated mainly by the literature of TMS regarding “who knows what” and findings suggest that team performance is positively influenced by the existence of TMS [5, 36]. TMS is explained as a team’s shared understanding of and “who does what” [5, 6] and “who knows what” [5, 36] in the team. Members actively share with and acquire their knowledge, information and resources from others in teams with high TMS quality [4]. In contrast, tasks can be easily divided and members can complete their tasks independently which impede individuals share their knowledge with each other in teams with low TMS quality.

An organization can successfully foster the KS environment by both the integration of knowledge into the business plan and adapting the individual perspectives and behaviors in order to encourage willing to KS with each other [23, 24]. Furthermore, several authors examined the relationship between KSB and IWB [2, 28, 37], while some others investigate the relationship between KS and TMS [7, 18]. However, academics and practitioners have not endeavored to advance an integrated model which helps to explore joint effects of KSB, TSM and IWB. Also, many previous studies on IWB have investigated factors which lead to individual IWBs in Western countries, far less attention has been given to the effects of KSB, TMS on IWB in developing countries with many differences of economy, culture and politics [1, 17].
To sum up, then, it is an imperative need to take into account the influences of KSB and TMS on IWB in order to promote individual IWB in any organisations. This paper aims to examine the relationship between KS and TMS can support or limit the individual IWB. By investigating the relationship between KSB, TMS and IWB, this study examines how organisations can foster a KS culture to support their employees’ IWB which help to validate a research model that presents a join correlation between TMS on KS and IWB. It contributes to the literature of KS by investigating and answering the two main research questions as follows: (1) How does the KSB impact individuals’ IWB in organisations? (2) What are the joint effects of TMS and KSB on innovative work behaviour in organisations?

The organisation of this paper is as follows. The next section present the literature review, followed by describing the research model development. Then, the sample and data collection methods, questionnaire design and data analysis are described in the proposed research method section. Finally, the conclusion and future work is presented.

II. LITERATURE REVIEW

A. Knowledge Sharing Behaviour

Knowledge is a significant organizational resource. KS contributes to developing competitive advantages for organizations in complex environments, such as the improvement of intellectual capital, by encouraging the exchange and creation of knowledge within an organization. This is because knowledge is the key factor for achieving continuous innovation at both individual and organizational levels. It is also examined a closely related factor for the progress of any individual or organization, hence it is an essential indicator to be studied in the KS on individual IWB in HEIs. KSB can be defined as the process involving the exchange of knowledge between individuals and groups of people [10]. The authors develop the measurement of KSB by the frequency of knowledge dissemination (giving or presenting knowledge to potential receivers) that can also be beneficial for organisations in general, a higher education institution in particular. In turn, KS is relied upon knowledge management, which is a necessary activity in all businesses. Any KS practice occurring within organizations between its employees will always be based on both knowledge-giving and knowledge-receiving. Knowledge management is a broader term that caters to a wide range of topics, while KS is a specific focus area of knowledge management [14]. KS, when performed in conjunction with other aspects of the step-by-step process of knowledge management (creation, storage, sharing, and application) can fulfill a strategic necessity for organizations that wish to improve their capabilities and performance [21].

B. Transactive Memory Systems

A TMS mentions a collective memory system that consists of the location and distribution of the expertise/knowledge among team members [4, 41]. The concept of TMS developed through observing that members in a team may not memorise all information about each other [4]. Alternatively, team members may memorise who are experts in their team or, in other words, “who knows what” [42, 48]. Thus, team’s members can retrieve detailed information without actually owning this information in their own personal memory [4, 42]. TMS can be considered by three dimensions including specialisation, credibility and cooperation [43]. Specialisation explains “who knows what” within the organization. Credibility examines the reliability of other people’s knowledge. Cooperation indicates the ability to work efficiently and smoothly in a team [43]. Several studies have suggested that TMS can improve knowledge contributions and facilitate knowledge sharing in organisations [44].

TMS is deemed to be a practical integrated memory in a person’s minds that produces mental maps of “who knows what” and “who does what” [44, 45]. This memory can be richer, more accurate and deeply rooted in the social interactions and dialogue between individuals [6]. Brandon and Hollingshead [6] found that the present of interpersonal relationships and interactions lead to the development of a TMS identified as a collective process in which transactions between team members generate a link to other people’s expertise [46]. Consequently, team members build a link to others’ knowledge without knowing it themselves. Finally, a team member’s expertise is only valuable to the team when other members are aware of its existence [4]. It is highlighted that individuals should know “who knows what” and “who does what” to get help when performing a certain task that helps organisations to effectively utilise their intellectual asset [42, 6].

Previous studies on TMS has been limited and focused on the relationship between TMS and team performance [44, 45]. The results also indicated that a developed TMS facilitate effectively KS [45, 47]. According to Choi et al. [45] and Davison et al. [47], there has been little research on the relationship between KS and TMS. In this study, we assume that a fully developed TMS is positive for KS because it supports a team member easy to fully utilize the diverse knowledge and promote KSB is the individual willingness to share knowledge with others.

C. Innovative Work Behavior

In this current study, we intend to empirically examine the relationship between KS, TMS and IWB, using a model derived from Janssen [16] in which IWB includes three components: idea creation, idea promotion, and idea application. He identifies IWB as the intentional creation, promotion and application of novel ideas within a team, group or within the organization that helps to improve the work performance, the group, or the organization. In the same manner, De Jong and Den Hartog [10] supported this view and stated that IWB is the identification of problems and intended establishment of new and beneficial ideas, as well as a number of behaviors required for developing, launching and implementing novel ideas with the purpose of improving personal and/or business performance [1]. Based on Scott and Bruce [33], Janssen [16] perceived IWB as a complex behavior
in the workplace which comprises three behavioral tasks: idea creation, idea promotion, and idea application. The first step of the individual innovation is to create an idea that is generation of new and valuable ideas in any field [3, 16, 19]. Second, potential colleagues or partners will be prompted the idea which occurs when an individual has created an idea and engages in social activities to get supporter surrounding an idea [16]. Finally, the innovation process involves idea application by developing a model or innovative prototype that is likely to be tried and utilized in teams, groups, or the whole organization [19]. Basic innovations are usually accomplished by individuals, whilst the completion of more complicated innovations often needs teamwork relies upon a diversity of knowledge, ability, and work roles [16, 19]. With the belief that individual IWB have positively effects on work outcomes, several researchers have dedicated increasing attention to factors that potentially foster IWB such as KS, organizational climate and IWB [37], KS and IWB [28], KS determinants, behaviors, and IWB [2], and organizational climate for innovation and organizational performance and IWB [34]. However, the relationship between KSB and IWB is still largely unexamined, especially in non-Western countries [34] in higher education institutions.

III. RESEARCH MODEL AND HYPOTHESES

This section briefly reviews relevant literature on different factors affecting KSB towards IWB to develop the research model and hypothesis. Firstly, related theories or theoretical models on the effect of KSB and TMS towards individual IWB are briefly reviewed. Finally, the paper will discuss about the relevant constructs/factors with the justification of their choices in the current study. The literature available on studies conducted in HEIs is limited. Studies, thus, examined in organizational settings that could provide a theoretical foundation for the research are also cited. Nevertheless, a comprehensive understanding leads to IWB can be prevented by existing research models in the context of Vietnamese HEIs.

IWB comprises three dimensions: idea creation, idea promotion, and idea application [16, 33]. It illustrates the process in which employees mutually create, promote and implement new ideas to improve personal and/or business performance. There have been several studies into factors affecting Innovative work behaviour in organizational context. First, Yu et al. [37] examined individual-level KS and innovative behavior of employees and collaborations between the innovation climate and the individual level of KS within the organization in the Taiwanese finance and insurance industries. The findings showed that KS and interactive behavior among workers enhanced innovative behavior and the ability to innovate and there is a positive association between KS and innovative behavior. Second, Radaelli et al. [28] conducted a study which investigated the new understandings into how workers’ KS impacts their IWB in four healthcare organizations in a European country. The results indicated that (1) workers who donate knowledge also engage more in generating, promoting and applying innovations and (2) the recombination and translation of knowledge integrated in KS has positively impact on IWB. Third, Akhavan et al. [2] examined the influence of socio-psychological factors from different theoretical perspectives, whether it leads to superior employees’ IWB in 22 high-tech companies in Iran. The study specified that individuals’ KS behaviors improve their IWB. Finally, Dong et al. [11] attempted to acquire a new insight into the factors influencing the KS intention in the organizational context in Vietnam. The finding showed that sense of self-worth, subjective norms, and social trust significantly influence attitude towards KS behaviors apart from extrinsic awards and expected associations. The authors suggested that Vietnam has been in a beginning of stage which prepares itself to lead to a knowledge-based development and there has been little research on emerging economy such as Vietnam.

Regarding to TMS, Ji et al. [18] conducted a research on communication and TMS influencing knowledge sharing within a team. The results showed that TMS was the full mediator between personal communication and knowledge sharing, and positively affected shared mental model. Ariff et al. [5] proposed a model in which TMS quality influence the performance of virtual teams based on the conceptual model of Brandon and Hollingshead. The findings indicated that TMS has a positive effect on virtual teams’ performance. Chen et al. [7] examined the effects of communication quality, TMS, knowledge sharing, and technical accomplishment of open source software teams. Table 1 presents the summary of the prior research models.

The proposed conceptual model consists of three constructs including KSB, TMS Quality and IWB. Each of these constructs will be described below (Fig. 1).

- Knowledge-sharing behavior: The extent to which a person performs knowledge sharing activities in the organisation [39, 40].
- Quality of TMS: The extent to which team members are able to recognize and utilize the knowledge and expertise of other team members [4, 6].
- Innovative work behavior: The extent to which employees behave to create, promote, and implement new ideas in a group or organization [16].

![Fig. 1. The proposed research model](image-url)
TABLE 1. DIMENSIONS OF KS, TMS AND IWB ACROSS STUDIES.

<table>
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<tr>
<th>Related Literature</th>
<th>KS</th>
<th>TMS</th>
<th>IWB</th>
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<td>Janssen [16]</td>
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<td>Van den Hooff &amp; Van Weenen [38]</td>
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<td>Dong et al. [11]</td>
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<td>Ji et al. [18]</td>
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<td>Chen et al. [7]</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Ariff [4, 5]</td>
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<td>Yu et al. [37]</td>
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<td>Radaelli et al. [28]</td>
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<td>Akhavan et al. [2]</td>
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Hypotheses Development

A. Knowledge-Sharing Behaviour and Innovative Work Behaviour

There is no doubt that the employee’s ability of knowledge transformation and utilization may encourage his or her level of individual innovation, for example rapid problem-solving ability and improved faster response to new challenges. Several academics highlighted the significance of KS to improve individual IWB [2, 28, 37]. Effective knowledge processes can create important organizational intellectual capital and intangible resources to improve performance [25]. For example, when an employee transfers tacit knowledge into explicit knowledge, it will bring advantages to the team, group and/or the entire organization [12]. This shows that when organizations manage their knowledge assets better, the organization will then have a greater chance of better performance in both organizational and individual levels [12, 29]. This research assumes that individual willingness to both giving and receiving knowledge with each other is probably to support IWB and consequently contribute to better competitive advantage of the organization with regard to long-term competitive advantage in complex environments. Therefore, we hypothesize that.

H1: Individual willingness to share knowledge positively impact IWB.

B. TMS, Knowledge-Sharing Behavior and Innovative Work Behaviour

The definition of TMS is that it is a team’s shared understanding of and “who does what” [5, 6] and “who knows what” [5, 36] in the team. TMS quality is the extent to which team members are able to recognize and utilize the expertise and knowledge of other team members [6]. In teams with high TMS quality, members actively share with and acquire their knowledge, information and resources from others [4]. However, in teams where TMS quality is low, tasks can be easily divided and members can complete their tasks independently which impede individuals share their knowledge with each other. Therefore, it is hypothesized that.

H2: The higher the TMS quality, the more impact individual willingness to share knowledge will have on IWB.

H3: Individual willingness to share knowledge mediates the relationship between TMS quality and IWB.

IV. METHODS

The sequential mixed-methods, including quantitative and qualitative methods, will be used to accomplish the research goal with the sample is academic staff in Vietnamese HEIs.

A. Sample and Data Collection

A total of 4 universities will be randomly selected from the list of 37 public universities in the north of Vietnam. The questionnaire with a cover letter will be delivered to and collected from the participants through the administrative staff of the respective departments before being returned in closed envelopes to ensure voluntary participation and the anonymity of the participants.

B. Measures

In this study, the questionnaire will adapt or adopt existing measures from several past studies. All items used to operationalise constructs will be mainly adapted for examination in the KS context in Vietnam. Items will be measured using a five-point Likert-type scale (ranging from 1 = strongly disagree to 5 = strongly agree or 1 = never to 5 = always). KSB will be measured using three items adapted from an examination by Lin et al. [40]. Quality of TMS will be measured using six items taken from Ariff [4]. IWB will be measured using nine items adapted from Janssen [16]. The measurement scales for the constructs of the proposed model are described as follows:

Knowledge sharing behaviour:
- I often engage in KS activities and share my knowledge with my colleagues in my organisation.
- I usually spend a lot of time conducting KS activities in my organisation.
- When discussing a complicated issue, I am usually involved in the subsequent interactions.

TMS quality:
- Who knows what:
  - I have a good understanding of the skills that my colleagues possess.
  - I know the specific expertise that my colleagues possess.
  - I have a good understanding of the knowledge that my colleagues possess.
- Who does what:
  - I know the task responsibilities of my colleagues.
C. Data Analysis

We intend to analyze our data in the two phases. For the phase 1 (Quantitative data analysis), a multivariate statistical approach will be implemented to quantitatively analyze data collected from the questionnaires including descriptive data analysis to find if the data is ready to continue to the multivariate data analyses step (participants’ profiles and data screening by studying normality, means, standard deviations and standard error of the mean), measurement scale analysis to capture the meaning of each model construct through an assessment of reliability and validity (Cronbach’s alpha) addition to this, item-total correlations will be used to assess the extent to which a particular item belonged to its scale, the validity of the measurement by using Explanatory Factor Analysis and Confirmatory Factor Analysis, and Structural Equation Modeling to investigate the causal relationships of the model [13]. We will use the Statistical Package for the Social Sciences (SPSS) (22.0) and Amos 22. For the Phase 2 (Qualitative data analysis), the interpreting data collected from interviews is indispensable to validate the quantitative results.

V. CONCLUSION AND FUTURE WORK

This paper has reviewed the literature and proposed a conceptual model for investigating the influence of knowledge sharing behaviour (KSB) and transactive memory systems (TMS) on innovative work behaviour (IWB) in the context of organisations in general, Vietnamese higher education institutions (HEIs) in particular. The significant contributions will yield to both theory and practice. The researchers are able to (1) better understand how KSB facilitate or impede individual IWB, and (2) explore and explain what are the joint effects of TMS and KSB on IWB. The practitioners are able to (1) understand how knowledge sharing (KS) practices can help to encourage or discourage IWB that occurs during the exchange of knowledge between individuals within groups or the organisation, and (2) guide managers and leaders in building applicable policies in promoting KS environment in their organisations in general, higher education institutions in particular.

Future work can test this proposed model empirically by using the questionnaire, followed by the validation of this model that described in section IV. Our model is expected to be tested in any organisations in which future researchers or practitioners wish to test this model.

REFERENCES


