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The impact of perceived organizational support on employees' knowledge transfer and innovative behavior: comparisons between Taiwan and mainland China

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This study investigates the correlations among perceived organizational support (POS), self-efficacy, knowledge transfer, and innovative behaviors of employees in the information service companies of Taiwan and mainland China using goal-oriented behavior and social identity theory. A structural model was built, and data were collected through a survey conducted in two rounds, two months apart, during the COVID-19 pandemic. The results indicate that POS significantly affects innovation behavior and self-efficacy in both regions, and self-efficacy plays a key mediating role in the research model. However, the relationship between POS and knowledge transfer was non-significant for mainland China. The study also reveals that the culture of knowledge sharing in the organization can promote employees' innovation, knowledge sharing behavior, communication, and knowledge transfer. The findings imply that managers should provide organizational support to improve employees' innovative minds and self-belief, particularly during the pandemic. This research fills a theoretical gap by applying Western theories in an Eastern context and broadening the generalization of the theory. It provides practical implications for improving the quality of human resources by suggesting that managers should provide organizational support to improve employees' innovative minds and self-belief, particularly during a pandemic. Additionally, it contributes to the literature by examining how cross-cultural differences affect the relationships among POS, self-efficacy, knowledge transfer, and innovative behavior. This study also enriches the literature about employees in particular regions and their service innovation behaviors.

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Introduction

In the field of organizational behavior and management, it has always been a significant issue that organizational support and psychological cognition of employees have a certain effect on knowledge sharing and innovative behavior (Akgunduz et al. 2018; Brown et al. 2011; Chang and Edwards 2015; Islam et al. 2015; Kurtessis et al. 2017). Many studies have consistently found a strong correlation between organizational support and employees' work attitudes and their ability to acquire necessary resources for problem-solving (Ahmed and Nawaz 2015; Ahmed et al. 2015; Islam and Ahmed, 2019; Lamm et al. 2015; Lent et al. 2011; Liguori et al. 2019). Higher levels of organizational support not only improve employees' attitudes towards their work but also empower them to acquire the resources they need to solve problems effectively. Nevertheless, in the context of the global COVID-19 pandemic, interpersonal communication and interaction have been suspended, greatly reducing the degree of knowledge sharing and distribution and thus reducing enterprises' overall capacity for innovation. In uncertain surroundings, employees feel anxious and stressed (Basyouni & El Keshky 2021; Eguchi et al. 2021), which may have an indirect impact on innovative behavior (Islam et al. 2022b). Especially in the service industries, there are various hostile behaviors. Employees tend to feel high levels of stress and anxiety in an uncertain work environment. In this situation, the lack of innovative behaviors among employees is not only detrimental to the organization's growth and development but also directly correlates with high turnover intentions, as evidenced by multiple studies (Ali et al. 2022; Ali et al. 2022; Anser et al. 2021; Usman et al. 2021; Usman et al. 2022). These studies collectively indicate that when employees do not engage in innovative behaviors, it often leads to a desire to leave the organization, resulting in high turnover intentions. There may be a gap to be filled if previous research findings on organizational support and innovative behavior are applicable to the current research situation. Therefore, this study aims to explore the impact of organizational support on employee innovative behavior in the service industries in the context of the COVID-19 pandemic.

Factors influencing the innovative behavior of employees have been widely discussed in the literature on organizational behavior (Ahmed and Nawaz 2015; Chang and Edwards 2015; Lent et al. 2011; Liguori et al. 2019). On the basis of social cognitive theory and organizational learning perspectives (Islam et al. 2015), perceptions of organizational support by employees will develop internal factors such as self-cognition, attitude, and intention, which will be reflected in later behavior (Brown et al. 2011; Islam and Ahmed, 2019; Lee et al. 2021; Lent et al. 2011; Liguori et al. 2019). Some works have explored the shape of employee self-efficacy from the perspective of organizational psychology (Chang and Edwards, 2015; Duffy et al. 2014; Kurtessis et al. 2017; Lent et al. 2011; Thompson et al. 2017) and knowledge transfer intention from the perspective of knowledge management (Chaudhary et al. 2021; Kurz et al. 2018; Lin et al. 2015; Wang et al. 2019) when it comes to variables of intrinsic cognition and intention. Many scholars advocate for emphasizing employee self-efficacy and state that high self-efficacy contributes to improving daily work performance and innovation mindset for employees (Caesens and Stinglhamber 2014). Scholars emphasize the importance of self-efficacy as a mediating factor in many different models (Islam et al. 2022b; Shao et al. 2015). For the reasons stated above, this study aims to better understand and investigate the impact of self-efficacy on innovative behavior of employees within the psychological enhancement process in service sector firms.

According to Islam et al. (2022a), a social exchange perspective could well explain knowledge sharing and innovative behaviors between employees. In Bearman (1997) view of social exchange, employees will increase knowledge transfer due to the codes and relations that have been developed, and the party who receives knowledge transferred by others will have emotional interactions with the sharer based on the principle of reciprocity, thus forming a positive cycle of interaction. Islam et al. (2021) also indicate that knowledge transfer is a social exchange of knowledge sharing and creation between individuals based on the principle of reciprocity. Knowledge transfer intention, other than self-efficacy, will improve employees' active storage and access to knowledge bases across the boundaries of individuals and organizations (Foss et al. 2010; Islam et al. 2022b; Islam and Asad 2021; Wehn and Montalvo, 2018; Wu et al. 2015), resulting in superior innovation rules and practices (Abbas and Sağsan 2019; Hassan et al. 2016). Knowledge transfer is also viewed as an indicator of the effectiveness of knowledge management practices (Bock et al. 2005; Fischer et al. 2021; Wehn and Montalvo 2018). Nevertheless, the exception appears to be extensive knowledge transfer within enterprises instead of an inevitable phenomenon (Wu 2013). According to goal-oriented behavior (MGB) (Perugini and Bagozzi 2001; Bagozzi 2006) and social exchange theory, the study has proposed an explanatory model of innovative behavior. Especially in an environment with high uncertainty (Lamm et al. 2015), employees may reduce knowledge transfer behavior or intention in avoidance of pandemic spread, thus inhibiting innovative behavior from employees (Ahmed and Nawaz 2015; De Vos et al. 2011; Islam et al. 2022a, 2022b). As a result, this study seeks to investigate the role of knowledge transfer among perceived organizational support, self-efficacy, and innovative behavior in service sector firms.

Besides being maintained by the differences generated by the pandemic, individual feelings and independence are upheld by a cross-cultural perspective as a key moderator (Lee et al. 2021; Rehg et al. 2012; Meyers et al. 2019; Zhao et al. 2021). Knowledge transfer proposed to guide such inventive behavior from employees is becoming more generally applicable when there are fewer obvious boundaries and distinctions between cultures in a global context. This study takes Taiwan and mainland China as the research samples for cross-cultural comparison (Hansen et al. 2012; Meyers et al. 2019; Rehg et al. 2012) to explore regions' differences in working activities caused by cross-cultural and health crises (Schultz et al. 2015). Employees in Taiwan and mainland China, while sharing a common Confucian heritage, exhibit distinct workplace behaviors due to their unique historical, political, and economic contexts. Chao and Yen (2018) emphasize the heterogeneity in microcultures between the two, despite a shared macroculture. Chung and Smith (2016) further highlight that these differences, rooted in varied historical experiences and political systems, can influence management practices and organizational behaviors, making it vital for organizations to recognize and adapt to these nuances. Therefore, this study aims to explore how cross-cultural differences determine employees' perceptions of perceived organizational support, self-efficacy, knowledge transfer, and innovative behavior (Ahmed and Nawaz 2015; Akgunduz et al. 2018). This study follows the following structure: The literature review and hypothesis development are presented in the section 'Literature review and hypotheses development'; the methodology is introduced in the section 'Methodology'; 'Results' explains the results of statistical analysis; furthermore, we have a comprehensive discussion and make a concluding remark in the section 'Discussions and conclusions'. The final part of this study presents the research limitations and future research directions.

Building upon existing literature, this study makes three pivotal contributions. Firstly, by conducting a nuanced cross-cultural

examination between Taiwan and mainland China, this study elucidates the intricate interplay of cultural nuances on knowledge transfer and innovation, thereby filling a critical gap in the current understanding of organizational dynamics across different cultural contexts. Secondly, the study innovatively integrates social identity theory with the perspective of goal-oriented behavior, offering a robust and comprehensive theoretical framework that sheds light on the underlying motivations propelling employees' innovative behaviors. Lastly, the study underscores the centrality of self-efficacy in the knowledge transfer process, positing it as a crucial mediating factor between perceived organizational support (POS) and knowledge transfer. This emphasizes the imperative for organizations to cultivate an environment that bolsters employees' confidence, thereby fostering enhanced knowledge sharing and innovation.

Literature review and hypotheses development

Innovative behavior. Based on social identity theory and the goal-oriented behavior model (Perugini and Bagozzi 2001), we create an explanatory model for service innovation performance. Several behavioral theories, including the theory of planned behavior (Ajzen 1991), posit that innovation attitude, subjective norms, and perceived behavior control are the primary antecedents influencing individual decisions. However, while TPB provides a foundational understanding of behavioral intentions, it sometimes falls short of capturing the full spectrum of individual decision-making, especially when emotions and other intricate psychological factors come into play. Recognizing these limitations, Perugini and Bagozzi (2001) introduced the goal-oriented behavior model, which incorporates anticipated emotions as influential determinants, thereby offering a more comprehensive perspective on individual behaviors beyond the initial variables proposed by TPB. Furthermore, Islam et al. (2022a) suggest that the scope of antecedents driving innovation behaviors can be broadened even further when viewed through the lens of the social exchange perspective. Based on the principle of reciprocity, employees improve their innovation and innovative ability through knowledge transfer and sharing (Islam and Asad 2021). Scholars recommend discussing this factor when examining the decision-making processes of individual behaviors (Bagozzi and Dholakia, 2006). This study attempts to further advance prior studies of innovation behaviors by introducing a variety of antecedents.

As asserted by Amabile and Pillemer (2012), previous studies of organizational creativity focused on discussing the personal characteristics of people with creativity or their ability to resolve issues using creativity from a trait or cognitive perspective (Islam and Asad 2021; Islam et al. 2022a). Afterwards, it was found from autobiographies and letters that creative people are more likely to develop new and valuable ideas in certain social contexts. From then on, scholars began to shift their focus on individual creativity from individual cognitive competence to the effect of social situational factors on innovative behaviors or individual creativity performance (Chen and Zhou 2017; Kurz et al. 2018; Orfila-Sintes and Mattsson, 2009). Creativity is a term used to explain behaviors, and it refers to the fact that employees bring forward new or valuable ideas, but innovative behaviors are the process by which employees present or introduce new ideas at work and implement them in diversified ways to achieve further objectives (Chen and Zhou 2017; Reade and Lee 2016). Creativity is about an individual's actions in presenting new or valuable ideas, approaches to problems, or procedures (Amabile 2011; Islam and Asad 2021). It can be seen from the above that creativity can be considered a core element of innovation behaviors, facilitating the transformation from diversified creative thinking to practical behaviors.

Innovative behavior, in the context of this study, refers to the proactive actions taken by employees to introduce and apply new ideas, solutions, processes, or procedures to their job roles, teams, or the organization as a whole (Islam et al. 2022a, 2022b; Le and Lei 2019; Reade and Lee 2016). It encompasses a range of activities, from idea generation, problem-solving, and creative thinking to the actual implementation of these new ideas. This behavior is not just limited to introducing novel ideas but also involves the adaptation and modification of existing practices to improve efficiency, effectiveness, and overall organizational performance. Unlike creativity, innovative behaviors highlight both the introduction and execution of new ideas. To put it differently, innovative behaviors include both creative thinking and its practice, so creativity can also be considered an integral part of innovative behaviors (Islam et al. 2022b; Kao et al. 2015; Newman et al. 2018). In terms of depth, creativity can be divided into significant creativity, minor creativity, and daily creativity. The former may change human life and civilization, and the latter is able to resolve daily issues and improve the quality of individual work or life (Conner and Silvia 2015). Although professionals in different fields behave differently in problem finding and solving due to diversified working conditions (Goncher et al. 2017), common ground can still be found. For example, employees think outside the box, reorganize existing ideas, execute new technologies, processes, and approaches at work, work out novel ideas, sell new ideas to others, and strive to obtain the required resources to implement new ideas and set up an agenda to accomplish them.

Knowledge transfer. Knowledge contains explicit knowledge and tacit knowledge (Shao et al. 2015), which can be mutually transformed. Explicit knowledge can usually be expressed via forms of words, computer programming and other symbols, which can be decoded, understood and experienced by people through formal and systematic communication ways and eventually internalized into tacit knowledge (Kim and Lee 2013). Tacit knowledge is usually acquired from people's experience, which is difficult to be explained by characters and other symbols. However, it can be transformed into explicit knowledge through encoding, explaining and accounting for individuation, which is an important element for enterprises in business operation and development (Abbas and Sağsan 2019). Thus, knowledge transfer is the reciprocal transformation of explicit knowledge and tacit knowledge (Birkinshaw et al. 2000; Johnson and Johnston 2004), which is a process of forming a knowledge spiral (Nonaka and Takeuchi 1998), namely, combination (explicit knowledge → explicit knowledge), internalization (explicit knowledge → tacit knowledge), socialization (tacit knowledge → tacit knowledge) and externalization (tacit knowledge → explicit knowledge) (Johnson and Johnston 2004). The process is also the essence of knowledge creation (Fischer et al. 2021; Nonaka and Takeuchi 1998; Wehn and Montalvo 2018), which contributes to establishing capacity (Hatcheu 2017) and enhancing the effectiveness of knowledge transfer (Waris 2015), and its medium is associated with "human". Therefore, knowledge transfer can be taken as a process to obtain knowledge, which indicates that knowledge transfer focuses on the knowledge flow between behavioral agents via organizational learning (Chaudhary et al. 2021; Fischer et al. 2021), such as forms of individual, group and organization (Sue 2005; Shao et al. 2015). It contains knowledge transmission, absorption and utilization, meaning a process in which knowledge receivers digest, understand, integrate and utilize (Kang and Kim 2013).

Relationship between Knowledge transfer and innovative behavior. The goal-oriented behavior model makes the proposition that "intention" is a key antecedent factor for predicting "individual

behavior" (Ajzen and Fishbein 1975; Bagozzi 2006). Many scholars in the field of behavioristics also agree with this view, and it has been found in many empirical studies that the relationship between the two constructs is quite stable (Kim and Lee 2013). The focus of knowledge transfer attitude lies in how much knowledge attributes conducive to innovation individuals expect to acquire in the process of knowledge transfer (Abbas and Sağsan 2019; Bysted 2013); thus, it can strengthen individual innovative behavior (Wehn and Montalvo, 2018). Scholars have argued that if individuals can expect whether behavioral goals are achieved or not (Bagozzi 2006; Chin and Rasdi 2014), their intention of knowledge transfer can be enhanced (Kurz et al. 2018). Furthermore, knowledge transfer can also be regarded as a process of learning, in which employees can learn ways to strengthen knowledge acquisition and knowledge integration during knowledge transfer (Kim and Lee 2013; Nguyen et al. 2020), and then the tendency toward innovative behavior takes shape (Abbas and Sağsan 2019; Islam et al. 2022a, 2022b).

Although previous studies verify that a higher intention of knowledge transfer in organizations contributes to the increase of innovation behaviors (Chaudhary et al. 2021; Lai et al. 2016), employees may face huge uncertainties in job safety (Montani and Stagliano 2022) and become "free-riders" in the context of the COVID-19 pandemic, restricting the attitude of knowledge transfer. In this process, the innovation behaviors of employees may also be reduced due to a lack of sufficient knowledge bases or sources (Bysted 2013; Kim and Lee 2013). This makes it extremely important to verify the relationship between knowledge transfer and innovation behaviors in the context of the COVID-19 pandemic. Moreover, the result indicated that knowledge transfer is positively and significantly associated with innovative behaviors for employees. This association is consistent with the findings of other studies. For instance, Putri and Etikariena (2022) emphasized the role of knowledge sharing behavior in influencing innovative work behavior, with innovation self-efficacy acting as a mediator. Similarly, Yuan and Ma (2022) found that interpersonal trust, which is closely related to knowledge transfer, has significant impacts on knowledge-sharing and innovation behavior. Their study also highlighted gender differences in these relationships, suggesting that interpersonal trust is more crucial for female knowledge-sharing and innovative behavior. Based on the above, the study considers that the higher knowledge transfer of employees means a higher likelihood of innovation performance occurring in the future (Bysted 2013; Nguyen et al. 2020). This paper proposes the following research hypothesis:

H1: knowledge transfer plays a positive and significant effect on employees' innovative behavior.

Self-efficacy. Social career cognitive theory (SCCT) researchers have researched that, in a certain context, individuals' behavioral outcomes are affected by both environmental and cognitive factors, particularly those beliefs contributing to success and behavior (Chang and Edwards 2015; Liguori et al. 2019; Chin and Rasdi 2014; Brown et al. 2011; Zhao et al. 2021). While taking into account interactions with the surroundings (Chang and Edwards 2015; Duffy et al. 2014; Jemini-Gashi et al. 2019; Lent et al. 2011) and individual behaviors (Caesens and Stinglhamber 2014), these beliefs are named "self-efficacy," which becomes an essential cognitive variable in individual factors (Islam et al. 2022b). The motivation of human behaviors (Cordova et al. 2014), individual accomplishment, and mental health (Lent et al. 2011; Liguori et al. 2019) are regarded as being based on self-efficacy (Islam and Asad 2021). As well as the impact on occupational development of employees and task completion, in dynamic circumstances, psychological factors of employees are also investigated in the field of human resources through extensive application of self-efficacy (Brown et al. 2011; Caesens and Stinglhamber 2014; Duffy et al. 2014; Jemini-Gashi et al. 2019; Lee et al. 2021).

Relationship between self-efficacy and innovative behavior. Psychological health, POS (Chin and Rasdi 2014), and lifestyles for employees are important concerns discussed in some studies (Lent et al. 2011). However, few studies, up to now, have examined general self-efficacy and innovative behavior in this group. As argued by Jemini-Gashi et al. (2019), individuals show a lower support level, have limited sources of support, and seldom perceive support from others (Brown et al. 2011; Caesens and Stinglhamber 2014). In other words, employees showing higher self-efficacy tend to obtain a variety of benefits at work, which is conducive to raising job satisfaction (Caesens and Stinglhamber 2014; Islam and Ahmed 2019). Research by Pan et al. (2021) found that self-efficacy played a chain-mediated role in the relationship between proactive personality and innovative behavior among preschool teachers. These findings underscore the intricate relationship between self-efficacy and innovative behavior. If employees facing job stress fail to receive timely and necessary psychological support, their general self-efficacy and innovative behaviors will be shattered (Hu and Zhao 2016; Islam and Asad 2021; Islam et al. 2022b; Newman et al. 2018; Thompson et al. 2017) and may tend to cause unique stressors. By contrast, employees with higher self-efficacy are more inclined to have innovative behaviors. Briefly, H4 is deduced as follows:

H2: Self-efficacy plays a positive and significant effect on employees' innovative behavior.

Relationship between self-efficacy and knowledge transfer. According to organizational behavior literature, when perceiving that other members in the group regard a specific task (e.g., innovation) as a vital objective, individuals are prone to follow the group members and urge themselves to complete the goal (Brown et al. 2011; Lamm et al. 2015; Kim and Lee 2013). During socialization, inner self-motivation, reference objects for learning, and proficiency in work can reduce uncertainties arising from new contexts and stimulate self-efficacy (Caesens and Stinglhamber 2014; Chin and Rasdi 2014; Islam and Asad 2021). According to academics, employees who are confident in their capability to finish specific tasks have a higher possibility of sharing their useful knowledge (Shao et al. 2015) because they believe that their knowledge will contribute to solving problems and improving work efficiency (Bysted 2013). This aligns with findings from a study by Mubarak et al. (2021), which revealed that passive leadership greatly influences knowledge hiding practices among individuals, but the presence of creative self-efficacy can reduce such practices. In the context of innovation, knowledge transfer is required to obtain the relating knowledge attributes throughout innovation at whatever level, regardless of the fact that service staff can choose what level of innovation to conduct based on personal considerations (Bysted 2013). When perceiving the innovative goal deviating from the innovation goal of the goal (Brown et al. 2011), the service staff with high self-efficacy will take an immediate action to synchronize the innovation goal with the knowledge from knowledge transfer (Islam and Asad 2021; Kim and Lee 2013). What's more, service staffs will transform knowledge transfer into a habit of adjusting innovative behaviors, as time passes and task experience accumulates. As a result, a service staff, whose self-efficacy in delivering services is higher, will consider knowledge transfer as a critical task while providing services (Brown et al. 2011; Caesens and Stinglhamber 2014; Islam and Asad 2021). In summary, a hypothesis is developed as following:

H3: Self-efficacy has a positive and significant impact on employees' knowledge transfer.

Perceived organizational support. The concept of perceived organizational support (POS) was first defined by Eisenberger et al. (1986) from the perspective of perception, which especially refers to organizational support. It is the extent to which employees perceive that the organization attaches importance to their value and contribution and cares about their benefits. Employees' perception of organizational support is the premise for employees to enhance organizational commitment and show and support organizational goal behavior (Akgunduz et al. 2018; Ahmed and Nawaz 2015; Ahmed et al. 2015; De Vos et al. 2011; Islam et al. 2017). Thus, most scholars discuss organizational support from the perspective of perception (Islam and Ahmed 2019; Maisel and Gable 2009). A supportive organizational atmosphere can create an organizational environment that relieves employees' mental stress (Asad and Khan, 2003; Islam and Ahmed 2019). If organizations provide more organizational support to employees, such as more innovative resources, means, and conditions (Akgunduz et al. 2018; Amabile et al. 2004; De Vos et al. 2011; Islam et al. 2015), employees also perform more commitment and exchange behavior (Ahmed and Nawaz 2015; Wang et al. 2014), which is conducive to facilitating enterprise innovation (Maisel and Gable, 2009; Ahmed et al. 2015; Islam et al. 2015; Wang et al. 2021). Even if he or she fails to feel organizational support, he or she will judge his or her support and relationship in the organization by the change in others' attitudes (Islam et al. 2017; Kurtessis et al. 2017) and know whether his or her status in the organization has improved (Islam et al. 2015; Lamm et al. 2015; Vardaman et al. 2016), thus stimulating employees' work enthusiasm in an indirect way (Amabile et al. 2004). Studies have proven that employees' perceived organizational support can affect their selection of emotional work strategies (Chang et al. 2012; Kumar Mishra 2014; Hur et al. 2013), which has a negative effect on their emotional exhaustion.

Relationship between perceived organizational support and innovative behavior. Employees' innovative behavior is an indispensable performance indicator for the survival and competitiveness of an organization. At present, in the rapidly changing environment, the need for organizational innovation capability is further enhanced (Bysted 2013; Kurz et al. 2018). Bledow et al. (2019) argued that innovation is not an unrestrained and vigorous speculation but requires a divergent mind and the ability to restrain and adopt new methods, as well as constantly proposing critical ideas in the two stages. Within the organization, employees' innovative behavior must require them to consider outside the existing framework (Bysted 2013; Chin and Rasdi 2014; De Vos et al. 2011), but it also implies that employees must have the courage to identify defects and problems and be willing to provide suggestions (Akgunduz et al. 2018; Kurz et al. 2018) in order to promote and improve employees' innovative behavior (George and Zhou 2007). Caniels et al. (2014) believed that in the initial stage of innovation, communication with others is necessary to stimulate thinking, while in the stage of conducting innovation, in addition to constant communication and excluding difficulties, support from a supervisor is also needed (Ahmed and Nawaz 2015; De Vos et al. 2011). Furthermore, research has shown that perceived organizational support plays a pivotal role in fostering innovative work behavior, with psychological empowerment acting as a mediating factor, and the presence of organizational procedural justice further enhancing this relationship (Park and Kim 2022). Perry-Smith and Mannucci (2017) believed that the organizational innovation process requires different stages and different resource support to be effective, including: in the stage of generating innovative ideas, employees' cognitive flexibility is needed; in the stage of improving innovative ideas, constructive ideas and suggestions are needed; and in the stage of proposing innovative ideas, support of power and influence from supervisors is needed (De Vos et al. 2011). Finally, in the stage of innovation achievement, organizations should understand and accept different opinions and work methods to succeed (Ahmed and Nawaz 2015). Based on the above arguments, researchers propose H4:

H4: POS has a positive and significant impact on employees' innovative behavior.

Relationship between perceived organizational support and self-efficacy. Self-efficacy refers to an individual's belief and cognition about himself or herself and also means the degree of confidence and determination that he or she can accomplish the work (Brown et al. 2011; Caesens and Stinglhamber, 2014). An important association between POS and self-efficacy has been shown in previous studies (Caesens and Stinglhamber 2014; Kose 2016). When employees perceive that the organization seems to care about their welfare, they also make contributions in exchange (Islam and Ahmed 2019). The sense of belonging owned by employees is also stimulated by POS (Akgunduz et al. 2018; Demir 2015; Lamm et al. 2015). According to Kose (2016), when it comes to the relationship between POS and self-efficacy, employees feeling organizational support usually consider their positions secure, and they can perceive that the organization shows concern about their occupational development (Kurtessis et al. 2017; Lent et al. 2011; Schultz et al. 2015). It makes sense that employees who deem the organization concerned about their individual and occupational lives would intend to search for more resources to accomplish tasks or to get more responsibilities (Akgunduz et al. 2018; Lamm et al. 2015), which are dimensions of self-efficacy (Caesens and Stinglhamber 2014; Islam and Ahmed 2019; Lent et al. 2011). There is a positive correlation between POS and organizational citizenship behavior (Demir 2015; Meyers et al. 2019), predicting more behaviors that are beneficial in an organization. Thus, this study develops H5:

H5: POS has a positive and significant impact on employees' self-efficacy.

Relationship between perceived organizational support and knowledge transfer. The most direct and effective source of support for employees is POS (Akgunduz et al. 2018; Ahmed and Nawaz 2015). Organizations would provide employees with assistance in meeting work demands and dispel doubts and anxiety while utilizing technological tools at work (Lamm et al. 2015; Lent et al. 2011). Moreover, organizational support for effective work will improve employee engagement in work and lead employees to successful task accomplishment (Jemini-Gashi et al. 2019; Kurtessis et al. 2017; Liguori et al. 2019). Moreover, the POS, with its relationship with knowledge transfer and sharing, is helpful in improving employees' innovative capability (Hammami et al. 2013; Lent et al. 2011; Liguori et al. 2019). When facing practical problems, the POS is available to offer employees resources that are needed for learning and absorbing the knowledge to deal with work problems (Abbas and Sağsan 2019; De Vos et al. 2011; Kurz et al. 2018; Lamm et al. 2015). Different knowledge attributes are required at each processing stage, and knowledge acquisition based on the view of social exchange (Chin and Rasdi 2014) will provide employees with more willingness to transfer and share knowledge, thus promoting organizational innovation (Kurz et al. 2018). Therefore, researchers postulate the following hypothesis:

H6: POS has a positive and significant impact on employees' knowledge transfer.

Based on the above hypotheses, this study proposes the following research framework Fig. 1:

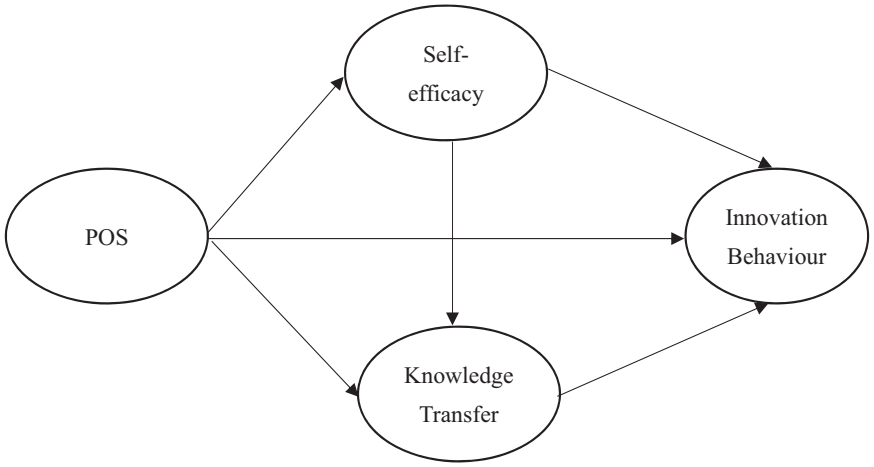

Fig. 1 Research framework. This diagram represents the interrelationships between four key constructs: POS (Perceived Organizational Support), Self-efficacy, Knowledge Transfer, and Innovation Behaviour. Arrows indicate the direction and flow of influence between these constructs.

Methodology

Sample and procedure. This study aims to investigate the employee innovative behavior, and analyze the effect of internal and external factors caused by the organizational and individual knowledge base. Front-line employees from the service industry are considered as the research object of this study. Due to the large population, a non-probability purposive sampling was adopted as there were certain restrictions on random sampling. A structural model was built in this study in order to examine the relations among self-efficacy, POS, innovative behavior, and knowledge transfer. Samples were collected from companies in Taiwan and mainland China. In face of COVID-19 pandemic, Taiwan and mainland China adopted different isolation policies. In Taiwan, employees can continue to work and provide services in the original workplaces, while in mainland China, some employees have to work at home or online. The discrepancy in policies may change job attitude and perceived support of employees. Thus, this study conducts a survey to collect research data from Taiwan and mainland China.

This study distributed copies of the questionnaire to front-line service personnel in the service industry in order to assure the sample representativeness and reduce the impact of bias arising from types of industry and job features on the research findings. The questionnaires were distributed both online, using secure survey platforms, and on-site for those who preferred a physical copy. The purposive sampling method was chosen based on specific criteria, ensuring that participants had firsthand experience in the service industry during the COVID-19 pandemic. The information service companies were selected due to their direct interaction with customers, making them more susceptible to the changes brought about by the pandemic. Furthermore, these companies were chosen based on their prominence in the industry and their diverse employee base, offering a comprehensive insight into the research topic. Besides, as for the scale of enterprises, medium - and large-scale information service companies are the ones we distribute questionnaire to. To make our samples representative, we surveyed the companies which provide face-to-face services to customers, and chose the information service companies located in eastern Mainland China and western Taiwan. Thirdly, questionnaire filling will be restricted to employees who have experience for at least one year of service since most variables in this study are individual self-reports from the sample that have been perceived. Before distributing the questionnaires, participants were informed about the purpose of the study, ensuring their understanding and voluntary participation. They were also assured of the confidentiality of their responses and were provided with an informed consent form to sign. Questionnaires were filled out anonymously by participants, and we also clearly specified the research purpose, research ethics, and low risks in the questionnaires.

In this study, more than 20 information service companies were selected from Taiwan and mainland China. We collected data from existing front-line service employees in two rounds (two months apart). We sent out 1000 copies of the questionnaire in total to each of them between May 2020 and July 2020, and in June 2020, the manager was reminded to send back the questionnaire again. Finally, a total of 636 questionnaires from Taiwan and 558 questionnaires from mainland China were collected, for an effective response rate of 63.6% and 55.8%, respectively. The majority of the respondents from Taiwan are male (62.0%). The details of their demographic information are as follows: 78.3% of them have a bachelor's degree or higher, 78.5% are between the ages of 30 and 40, and their average working years are 3.8 years. The breakdown of the mainland Chinese respondents is as follows: 62.3% of them are male, 66.7% of them have a bachelor's degree or above, 54.6% of them are between the ages of 30 and 35, and their average working years are 4.3 years.

To prevent common method variance (CMV), our study conducted a Harman one-factor analysis. The explained variance in one factor was 32.74%, which is smaller than the recommended threshold of 50%. Therefore, CMV was not problematic in this study (Ali et al. 2022).

Measures. The questionnaires use scales that have been modified from previous studies to adapt to this study. To divide perceived organizational support into supervisor and colleague support (4 items) and organizational support (8 items), we adopted the scale proposed by De Vos et al. (2011). This scale was chosen due to its comprehensive coverage of both supervisor and organizational support dimensions. In the original study, the scale demonstrated a high reliability with a Cronbach's alpha of 0.82 and has been widely used in studies focusing on organizational behavior.

For self-efficacy, the scale is revised and combined with six items established by Rigotti et al. (2008). The rationale behind selecting this scale is its specific focus on workplace self-efficacy, which captures nuances relevant to our study. The original scale exhibited a reliability coefficient of 0.85 and has been cited in various organizational studies examining the role of self-efficacy in job performance.

Table 1 Measurement properties.

		1	2	3	4	5	6
1. Supervisor and colleague support		***0.849/0.799***	0.550	0.061	0.054	0.027	0.424
2. Organizational support		0.822	***0.8360/0.747***	−0.010	−0.065	−0.105	0.266
3. Self-efficacy		0.619	0.592	***0.821/0.709***	0.344	0.480	0.157
4. Tacit knowledge		0.489	0.510	0.545	***0.894/0.718***	0.730	0.277
5. Explicit knowledge		0.509	0.496	0.536	0.802	***0.866/0.780***	0.270
6. Innovative behavior		0.549	0.511	0.623	0.507	0.492	***0.920/0.725***
Mean	Taiwan	3.604	3.533	3.785	3.718	3.633	3.699
	Mainland China	3.664	3.419	3.939	4.437	4.241	3.804
SD	Taiwan	0.670	0.681	0.611	0.736	0.699	0.652
	Mainland China	0.522	0.634	0.411	0.512	0.504	0.443
α	Taiwan	0.870	0.938	0.903	0.916	0.917	0.910
	Mainland China	0.810	0.884	0.776	0.723	0.837	0.751
AVE	Taiwan	0.720	0.699	0.674	0.800	0.750	0.847
	Mainland China	0.639	0.558	0.501	0.515	0.609	0.526
CR	Taiwan	0.911	0.949	0.925	0.941	0.938	0.943
	Mainland China	0.876	0.909	0.839	0.808	0.886	0.769

The figures on the diagonal are the square roots of the average variance extracted score for each construct. The figure on the left pertains to the Taiwanese sample, while the figure on the right corresponds to the mainland China sample.
Diagonal are the square roots of the average variance extracted score for each construct.

Measurement items of knowledge transfer were adopted from Zhou et al. (2010). Thus, it included tacit knowledge (4 items) and explicit knowledge (5 items). This scale was selected due to its clear distinction between tacit and explicit knowledge. In Zhou et al.'s study, the tacit knowledge scale demonstrated a reliability of 0.92, while the explicit knowledge scale had a reliability of 0.93. The scale has been referenced in research exploring knowledge management practices in organizations.

Innovative behavior was measured using Kao et al. (2015) instrument, which comprehensively assesses innovative behavior in 3 items. The study opted for this instrument because of its concise yet effective measurement of innovative behaviors in the workplace. The instrument had a composite reliability score of 0.84 in the original study and has been employed in research contexts investigating innovation behavior. A five-point Likert scale (1 = totally disagree; 5 = totally agree) was used to measure all items.

Results

Evaluation of the measurement model. In conducting measurement model analysis, construct validity is generally judged by Confirmatory factor analysis (CFA). In the CFA analysis, Hair et al. (2010) pointed out that factor loadings greater than 0.50 and Cronbach's Alpha greater than 0.70 indicate that the variables have high reliability and validity, and CR greater than 0.70 and AVE greater than 0.50 further indicate that the measurement model has better internal consistency. In this study, factor loadings greater than 0.5, Cronbach's alpha greater than 0.723, CR greater than 0.769, and AVE greater than 0.501 (as shown in Table 1). It is clear that the results of the CFA analysis confirm the high reliability of the measurement scales used and the high convergent validity of the measurement model in this research. In the study, the correlation coefficient of each dimension was less than the square root of the Average Variance Extracted, and all cross-loadings were all less than the factor loadings of the dimension as suggest by Hair et al. (2010), demonstrating a good discriminate validity.

Inner model analysis. Partial Least Squares-SEM was adopted as the main method for data analysis in this study, and Bootstrap was used to estimate the T-value of the path coefficient so as to estimate the results of the hypothesis test proposed in this study. Stone-Geisser-Criterion (Q^2), coefficient of determination (R^2), and standardized root mean square residuals (SRMR) are used to assess the overall model fit. R^2 values were more significant than 0.30, Q^2 values were above 0, and SRMR was less than 0.05.

Figures 2 & 3 and Table 2 show the results of the hypothesized relationships and standardized coefficients in the two groups in Taiwan and mainland China. The results showed that knowledge transfer was positively and significantly related to innovative behavior ($\beta_{Taiwan} = 0.196$, $f^2 = 0.141$, $p < 0.001$; $\beta_{China} = 0.412$, $f^2 = 0.228$, $p < 0.001$), supporting H1. Research results showed that self-efficacy was positively and significantly related to innovative behavior in Taiwan rather in mainland China ($\beta_{Taiwan} = 0.382$, $f^2 = 0.141$, $p < 0.001$; $\beta_{China} = 0.018$, $f^2 = 1.185$, $p < 0.001$), partially supporting H2. Moreover, Self-efficacy ($\beta_{Taiwan} = 0.368$, $f^2 = 0.132$, $p < 0.001$; $\beta_{China} = 0.141$, $f^2 = 0.011$, $p < 0.05$) was also positively and significantly related to knowledge transfer, supporting H3.

In addition, POS ($\beta_{Taiwan} = 0.204$, $f^2 = 0.041$, $p < 0.001$; $\beta_{China} = 0.292$, $f^2 = 0.089$, $p < 0.1$) was positively and significantly related to innovative behavior, supporting H4. Similarly, the paths of POS → self-efficacy ($\beta_{Taiwan} = 0.636$, $f^2 = 0.678$, $p < 0.001$; $\beta_{China} = 0.470$, $f^2 = 0.283$, $p < 0.001$, showed that the relations were positive and significant in Taiwanese and mainland China sample, therefore supporting H5. Finally, POS ($\beta_{Taiwan} = 0.319$, $f^2 = 0.099$, $p < 0.001$; $\beta_{China} = 0.031$, $f^2 = 0.003$, $p > 0.1$) was positively and significantly related to knowledge transfer in Taiwan rather in mainland China, partially supporting H6.

Multiple group analysis (MGA): Taiwan and mainland China. The measurement pattern proved to be stable. Whereas, with the suggestion of Hair et al. (2010), the sample data was divided into

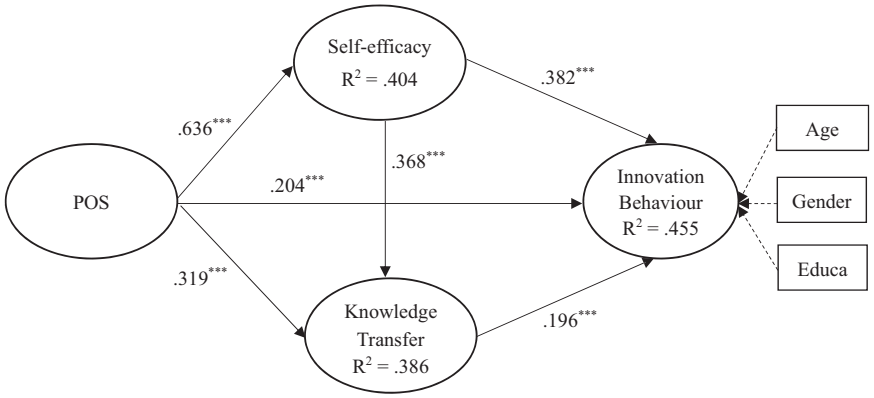

Fig. 2 Structural model on employees of Taiwan. This model showcases the interrelationships between POS (Perceived Organizational Support), Self-efficacy, Knowledge Transfer, and Innovation Behaviour. Control variables such as age, gender, and education (Educa) are also represented. Coefficients beside the arrows indicate the strength and significance of relationships.

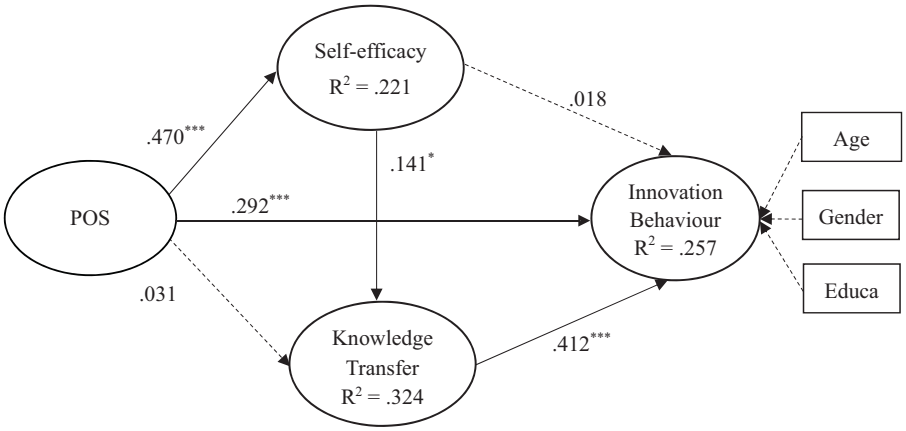

Fig. 3 Structural model on employees of mainland China. The model delineates the relationships between POS (Perceived Organizational Support), Self-efficacy, Knowledge Transfer, and Innovation Behaviour with control variables such as age, gender, and education (Educa). The dotted line indicates paths that are statistically non-significant. The values beside the arrows represent the strength and significance of these relationships.

Table 2 Results of the hypotheses testing.

Paths	Taiwan		Mainland China		Decision
	β	*p*-value	β	*p*-value	
H1: Knowledge Transfer→ Innovative Behavior	0.196	0.000	0.412	0.000	Support
H2: Self-efficacy→ Innovative Behavior	0.382	0.000	0.018	0.727	Partially Support
H3: Self-efficacy→ Knowledge Transfer	0.368	0.000	0.141	0.041	Support
H4: POS→ Innovative Behavior	0.204	0.000	0.292	0.000	Support
H5: POS→ Self-efficacy	0.636	0.000	0.470	0.000	Support
H6: POS→ Knowledge Transfer	0.319	0.000	0.031	0.497	Partially Support

two groups by regions (636 employees from Taiwan and 558 employees from mainland China, respectively) to avoid reaching too generalized data-driven theories and patterns. Recommended by Henseler et al. (2009), this study conducted nonparametric methods, including Henseler's MGA, showing the results of the structural models' results and MGA in Table 3. This study also indicates that there are five obvious differences between the two groups on all paths, regardless of the fact that several differences can be found in significant path estimates between the groups. The results signify that the relationship among POS, self-efficacy, knowledge transfer, and innovative behavior is moderated by region (Hair et al. 2017). The differences reveal that five paths were proven to be significant sequentially through the differences in path comparisons between Taiwan and mainland China. These results imply that the research framework did differ between the two regions.

Examination of mediating effects. Self-efficacy and knowledge transfer to establish the structural model can be regarded as mediating variables. A bootstrapping procedure is further performed on the structural model for each region in order to determine whether the two have mediating effects. Results displayed in Table 4 indicated that indirect effects of self-efficacy and knowledge transfer were supported in the sample of Taiwan. It shows that the setting of important mediating variables plays important roles in conceptual model.

Table 3 Multi-group analysis result.

Paths	β_{Taiwan} -β_{China}	*p*-value Henseler's MGA	f^2	Results
H1: Knowledge Transfer→ Innovative Behavior	−0.216	0.000	−0.185	$\beta_{Taiwan} < \beta_{China}$
H2: Self-efficacy→ Innovative Behavior	0.365	0.000	0.141	$\beta_{Taiwan} > \beta_{China}$
H3: Self-efficacy→ Knowledge Transfer	0.327	0.000	0.130	$\beta_{Taiwan} > \beta_{China}$
H4: POS→ Innovative Behavior	−0.087	0.212	−0.048	-
H5: POS→ Self-efficacy	0.166	0.000	0.395	$\beta_{Taiwan} > \beta_{China}$
H6: POS→ Knowledge Transfer	0.350	0.000	0.098	$\beta_{Taiwan} > \beta_{China}$

Table 4 Indirect effect of structural model.

Paths	Regions	Std. β	*p*-value	Decision
POS→ Self-efficacy→ Innovative Behavior	Taiwan	0.243	0.000	Support
	Mainland China	0.008	0.716	Not support
POS→ Knowledge Transfer→ Innovative Behavior	Taiwan	0.062	0.000	Support
	Mainland China	−0.013	0.506	Not support
POS→ Self-efficacy→ Knowledge Transfer	Taiwan	0.234	0.000	Support
	Mainland China	0.019	0.447	Not support
Self-efficacy→ Knowledge Transfer→ Innovative Behavior	Taiwan	0.072	0.000	Support
	Mainland China	0.017	0.460	Not support

Discussions and conclusions

Conclusions. With employees in Taiwan and mainland China in information service companies as research samples, this study aims to test the correlations among POS, self-efficacy, knowledge transfer, and innovative behaviors using goal-oriented behavior and social identity theory. This research will fill the theoretical gap in the application of Western theories in the Eastern context (Brown et al. 2011; Chang and Edwards 2015; Lee et al. 2021; Zhao et al. 2021) and broaden the generalization of the theory. Moreover, this study aims to provide the following contributions, according to our research findings: First, there are few studies to verify employees' innovative behavior at great environmental risk (Thompson et al. 2016). This study discusses employees' perceptions of the degree of organizational support among those who are from the information service industry in the global pandemic of COVID-19 and figures out its impact on employees in terms of knowledge transfer and innovation. Second, the process of socialization conducted by employees within the organization has been widely explored in previous studies on social identity theory, but employees' innovative behavior with global environmental factors has received a mere improvement in a few studies. This study seeks to bridge the theoretical gap and enrich the theoretical basis of social identity theory. Third, as well as verifying the research framework in an Asian context, a cross-cultural perspective to compare differences between Taiwan and mainland China is also included in this study.

The research also contributed to theory by examining how cross-cultural differences affect the relationships among POS, self-efficacy, knowledge transfer, and innovative behavior. Through the PLS_SEM multi-group used in this study, it can be seen that employees in Taiwan and mainland China show considerably different relationship paths between variables. The path of knowledge transfer and innovative behavior among employees on mainland China is significantly larger than that of employees in Taiwan. In addition to this, employees in Taiwan have a strong positive impact on the remaining paths. The study holds the same view as claims from Zhao et al. (2021) and Lee et al. (2021) that, due to cultural factors, there are significant disparities in research findings even within the same geographical location, especially in the testing of mediating effects. Verification of indirect effects shows that self-efficacy and knowledge transfer play a vital mediating role in the model of employees in Taiwan but fail to have a mediating role in the model of mainland China. According to a second verification, the geographic distribution of social identity research demonstrates that more empirical evidence is still needed in European and Asian countries.

Theoretical implications. The results show that employees' self-efficacy is positively related to their POS in Taiwan and mainland China. These results are consistent with those of Kurtessis et al. (2017), Demir (2015), and Meyers et al. (2019), who believe that organizational support factors for employees play an important role in motivating employees to spend more time in their work and improve their ability to achieve goals based on social cognitive theory. Like Islam and Ahmed (2019) indicated, employees should have a reciprocal effect on POS and improve their self-efficacy through a supportive work environment (Ahmed et al. 2015; Islam et al. 2015, 2017). Our findings are largely consistent with previous studies, indicating that self-efficacy is available in a variety of settings (Hansen et al. 2012; Lee et al. 2021; Rehg et al. 2012). Also, in both regions, research shows that POS has a significant and positive effect on innovative behavior. According to the findings of Le and Lei (2019), employees' sense of emotional and cognitive commitment would help reduce absenteeism and increase innovative behavior in social exchange theory. Even in diverse regions, organizations or leaders were also able to allow employees to perceive the availability and stability of resources in risky situations, so that employees could feel more reciprocal and engage in innovative activity.

Furthermore, the findings reveal that POS has a positive and significant impact on knowledge transfer for employees in Taiwan rather than those in mainland China. It is also important to note that employees with POS from the organization or supervisors are actively participating in team tasks and problem solving. The results are similar to those of Islam et al. (2022a) and Islam and Asad (2021). Based on social exchange theory, when employees obtain trust and support in the organization, they are more likely to learn, communicate, and transfer valuable knowledge and information. During the process of teamwork, employees gain resources from organizational support to solve problems, which contributes to knowledge exchange and knowledge transfer. As the research results from Pereira and Mohiya (2021) show, employees are more willing to share knowledge rather than hide it under the influence of different types of organizational support activities, which promotes the knowledge flow between knowledge sharers and recipients. This is in accordance with the findings of a number of previous studies (Hammami et al. 2013; Kurz et al. 2018; Lamm et al. 2015; Pereira and Mohiya 2021) supporting the relationship between POS and knowledge transfer. To the best of our knowledge, limited previous research has looked into the impact of organizational factors on knowledge transfer willingness. However, the relationship between POS and knowledge transfer was non-significant for mainland China, and

the possible reason lies in the fact that in mainland China, employees' need for POS not only requires short-term support; Pereira and Mohiya (2021) mentioned the work environment full of negative emotions and competition and the lack of organizational support perceived by employees, including the lack of incentives or rewards, the lack of involvement and recognition, the lack of adequate training, the lack of succession planning, the lack of planning and strategy, etc., which may cause employees to hide knowledge and then reduce willingness and behavior of knowledge transfer.

Additionally, the findings reveal that self-efficacy plays a significant role in knowledge transfer for employees in Taiwan and mainland China. Furthermore, self-efficacy plays a key mediating role in the research model. These findings are quite consistent with those of Brown et al. (2011), Caesens and Stinglhamber (2014), Lee et al. (2021), and Islam et al. (2022b), who verified self-efficacy as something important that bridges the relationship between different variables in different contexts. In addition, unlike the findings of Meyers et al. (2019), both regions are compared in the same model in this study, finding that self-efficacy generated in the social identity model has a direct effect on knowledge transfer. Islam et al. (2022a) also find that self-efficacy is not only a vital mediator but could also inspire employees to invest efforts to increase their innovative behavior. However, research results show that self-efficacy has a positive and significant effect on innovation behavior for employees in Taiwan rather than for mainland Chinese employees. This is consistent with recent work by Hu and Zhao (2016) and Slatten (2014) showing that employees high in self-efficacy are likely to choose to engage in innovative behavior, as they will feel confident in their knowledge and skills to generate new ideas and implement those ideas at work.

Moreover, the result indicated that knowledge transfer is positively and significantly associated with innovative behaviors for employees in Taiwan and mainland China and implies that employees in the organization conduct effective implicit and explicit knowledge exchange or sharing. Similarly, Islam et al. (2022a, 2022b) and Islam and Asad (2021) point out that the culture of knowledge sharing in the organization can promote employees' innovation, knowledge sharing behavior, communication, and knowledge transfer, and reduce knowledge hiding behavior. This can promote the dissemination of innovation information, ideas, opinions, and solutions. More innovative knowledge can be gained by employees, who can also improve innovative behavior in various working situations via knowledge diffusion and spread (Hu and Zhao 2016), specifically in tough situations. Knowledge transfer has a positive impact on innovative behavior, which agrees with the results of prior studies and may enhance the explanatory ability of social identity theory and the cultural relevance of employees with different cultural backgrounds (Abbas and Sağsan 2019; Kim and Lee 2013; Kurz et al. 2018).

Practical implications. To sum up, our findings imply that this study is of great practical significance for improving the quality of human resources. Firstly, in this study, it is found that POS significantly affects innovation behavior and self-efficacy in both regions. It indicates that the support and interaction from superiors, peers, and within the organization can facilitate employees' having more autonomy and confidence to complete tasks through the collaboration of psychological and tangible resources when performing tasks and objectives and provide stronger innovative behavior. In this regard, this study suggests that managers should provide organizational support that is available to improve employees' innovative minds and self-belief, particularly during the pandemic, when employees may experience anxiety and stress beyond work. Thus, more empowerment and autonomy should be endowed in terms of work arrangements. In addition to providing more relevant training in customer service and interaction, rewards for service innovation and quality improvement should also be enhanced to stimulate employees' innovative motivation.

Besides, the study found that employees' self-efficacy has a positive effect on knowledge transfer. As discussed in previous studies, employees with high self-efficacy can discern the tacit and explicit knowledge needed to achieve tasks in the work environment. To acquire such knowledge, these employees will carry out a series of learning processes through knowledge transfer and share their own knowledge within the organization. Thereby, it is suggested in this study that managers should first improve the learning mechanisms and atmosphere within the organization, create a harmonious and value-creating work environment, and reduce the atmosphere of competition and negative emotions. Employees can perceive their own competence and knowledge value so as to improve their willingness to share and transfer knowledge, such as through the establishment of a network service team and mentoring system, as well as the emphasis on team reciprocal performance.

Finally, the research findings indicate that knowledge transfer has a significant effect on the innovative behavior of employees. Intentions and behaviors of knowledge transfer and sharing will be affected by knowledge readiness. If there is a lack of a sufficient knowledge base, it will be difficult to improve innovative behavior even if knowledge transfer is conducted. To make employees smoothly conduct knowledge transfer, the study suggests that managers should have a detailed classification and description of knowledge and know-how within the organization, which can promote knowledge integration, produce new ideas, and improve employees' performance in innovative behavior.

Research limitations and suggestions for future researchers. Based on views of goal-oriented behavior and social identity, this study aims to verify whether there are differences between employees in different cultures in terms of trust and cognition generated from the attitude toward organizational support and how these differences are reflected on subsequent innovation behaviors. The PLS-SEM is used in this study to make multi-group analyses and compare path coefficients of models of employees in Taiwan and mainland China. Results show that samples from Taiwan demonstrate a more significant path and a more intensified relationship among variables compared to samples from mainland China. However, it is important to note that POS plays a vital role in preventing and controlling COVID-19, which brings a greater sense of safety for employees and drives them to devote more time to innovation behaviors.

The findings of this study will enrich the literature about employees in particular regions and the service innovation behaviors of employees. However, this study still has certain limitations that need to be addressed in subsequent research. First of all, as purposive sampling was adopted in this study and there were restrictions on time and cost, a more representative sampling method could not be adopted. Despite the fact that sampling conditions were established during the process of sampling, they might still affect the generalization of the results. Therefore, future researchers are suggested to utilize a more detailed sampling process to obtain more representative samples so as to improve the generalization degree of the model and theory. What's more, although social identity theory plays a critical role in the field of psychology, very few studies have examined the relationship between the building of

mechanisms and employees' service innovation behaviors. Despite the fact that this study refers to the social identity theory and establishes the building mechanism, and the fact that significant organizational theories are available to be drawn from the findings, other motivation theories of hierarchy needs, self-efficacy, organizational learning, etc. can also be used to explain how to motivate employees in a specific region to perform innovative behaviors. Therefore, future research is suggested to identify associated psychological dimensions that influence the innovative service behaviors of employees using diversified theoretical models.

One of the primary limitations of our study is the inability to comprehensively explore all mediation effects due to space constraints. While our primary focus was on cross-cultural differences in innovative behavior, the potential mediating roles of various factors remain an area that warrants further exploration. Future research could delve deeper into these mediation effects, providing a more nuanced understanding of the intricate relationships between the variables in our model.

Third, employees need to report details about mental building mechanisms by themselves as the indicator in the study due to the confidentiality and inaccessibility of the actual data. However, errors may occur when employees state their own mental conditions. Considering research ethics, the connection between building mechanisms and inventive behavior can be better understood if the actual psychological states of employees are assessed. Additionally, researchers are recommended to incorporate the interview contents and employees' observations of work state into their research in order to provide a basis for the research findings and draw a comprehensive conclusion.

Data availability

The datasets generated during the current study are not publicly available due to the privacy protection of respondents but are available from the corresponding author upon reasonable request.

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Author contributions

MY-PP, CX, RZ, and YH composed the conception and design and drafted the article. CX, RZ, and YH interpreted data and revised it critically for important intellectual content. RZ and YH collaborated with the writing of the study. MY-PP provided data methodology and analysis help. MY-PP, CX, RZ, and YH made critical comments and amendments. Correspondence to YH.

Competing interests

The authors declare no competing interests.

Ethical approval

This study was conducted in accordance with the highest ethical standards, adhering to the principles of the 1964 Helsinki Declaration and its subsequent amendments, or to comparable ethical standards. Ethical approval for the research was granted by the School of Economics and Trade, Fujian Jiangxia University, under the ethics approval number IRB-2020-013. The School of Economics and Trade, Fujian Jiangxia University, thoroughly reviewed and endorsed the study's objectives, methodology, and ethical considerations, ensuring the protection and well-being of the participants involved. We have maintained comprehensive documentation of the ethical approval process for verification and review purposes.

Informed consent

Informed consent was obtained from all participants and/or their legal guardians for participation in the study. Eligible employees with at least a year of service received an Informed Consent Form before the study began. This form explained the study's purpose, procedures, risks, and benefits to ensure participants understood and agreed to join voluntarily. Starting in May 2020, we distributed questionnaires. Participants were approached individually and informed about the voluntary and anonymous nature of their participation. They had enough time to read and understand the consent form before signing it, and they could ask questions if anything was unclear. The questionnaire also had a section emphasizing the study's purpose, ethics, and low risks, reassuring participants about the confidentiality of their responses. Data collection, done anonymously, occurred from May to July 2020.

Additional information

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