



Paradoxical behavior toward innovation: Knowledge sharing, knowledge hiding, and career sustainability interactions

Tachia Chin^a, Yi Shi^a, Elisa Arrigo^{b,*}, Rosa Palladino^c

^a School of Management, Zhejiang University of Technology, Hangzhou, China

^b Department of Economics, Management and Statistics (DEMS), University of Milano-Bicocca, Milan, Italy

^c IUL Digital University, Florence, Italy

ARTICLE INFO

Keywords:

Knowledge sharing
Knowledge hiding
Innovative work behavior
Paradox
Career sustainability

ABSTRACT

The COVID-19 pandemic has accelerated advance of digital technologies, resulting in unconventional innovation challenges for companies and novel, digital-based types of gig workers. Considering this phenomenon and its huge impact on employees' career development patterns and innovative work behavior (IWB), this research investigates how gig workers' perceived career sustainability affects their post-pandemic IWB. A critical feature of gig work is breaking traditional boundaries of working time and space, which often causes paradoxes disrupting traditional modes of knowledge exchange at work. Accordingly, this study is anchored theoretically in an exploration of how interacting mechanisms caused by two primary knowledge exchange behaviors, knowledge sharing and knowledge hiding, affect employee IWB from a paradoxical perspective of yin–yang harmonizing. Data from quantitative and qualitative studies were collected from China's cross-border e-commerce enterprises, which mainly target North American and European markets. The results indicate a nonlinear relationship between career sustainability and IWB. The interaction of knowledge sharing and knowledge hiding relates significantly to IWB, with the interaction moderating the U-shaped career sustainability–IWB relationship that was detected. Our study also carries valuable theoretical and practical implications that indicate that job flexibility and information and communications technology (ICT) can favor knowledge exchange, through knowledge sharing and knowledge hiding interaction, in proportion to the degree of career sustainability. The study also suggests a need to adopt organizational sharing strategies capable of spreading a work culture based on results, in which global companies can confront perplexing employment situations more effectively, thus promoting innovation.

1. Introduction

Due to the competitive and dynamic environments in which companies operate and the essential changes they are undertaking after the COVID-19 pandemic, the need to improve innovation performance is currently felt strongly (Pereira, Bamel, Temouri, Budhwar, & Del Giudice, 2023; Mele et al., 2024; Nguyen, Pontes, Malik, Gupta, & Gugnani, 2024). In recent years, the rapid advancement of information and communications technology (ICT) has supported significant growth in online work and flexible employment (Kuhn & Galloway, 2019). Unlike older forms of gig work (e.g., direct selling, security personnel, deliveryman), novel digital-based job arrangement gigs (e.g., copywriter, social media manager, web developer, customer service personnel) – characterized by project-based compensation, temporary employment,

and flexibility in when/how/where the work is performed – have become a growing component of the nonstandard workforce globally (Watson, Kistler, Graham, & Sinclair, 2021). The pandemic has further accelerated the rise of digital-based gig work (Kuhn & Galloway, 2019), offering an appropriate and beneficial option for both workers who have lost their jobs or sought more flexible work arrangements to care for their families and employers who have experienced post-pandemic downsizing and performance declines. Most previous literature has focused on gig work's characteristics related to the intensifying competition in recent years, recognizing how innovation performance has become more important than ever, particularly amid the challenging conditions of the pandemic (Kuhn & Galloway, 2019; Watson et al., 2021). Furthermore, digital platforms favor growth in wider networks, in which it is possible to recover talent and adapt the workforce to

* Corresponding author.

E-mail addresses: tachiachin@zjut.edu.cn (T. Chin), shiyi_41@163.com (Y. Shi), elisa.arrigo@unimib.it (E. Arrigo), r.palladino@iuline.it (R. Palladino).

<https://doi.org/10.1016/j.emj.2024.06.005>

Received 29 November 2022; Received in revised form 24 June 2024; Accepted 25 June 2024

Available online 26 June 2024

0263-2373/© 2025 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

market contingencies and demand trends. However, in seeking to provide a better understanding of innovation's behavioral aspects in businesses post-pandemic, it remains questionable whether such orthodox, technology-driven gig work can be instrumental or detrimental to firm innovation. For example, gig workers may not be aligned with their top management's goals, and companies cannot risk creating unstable customer relationships due to high employee turnover. Finally, gig workers could often fail to demonstrate career advancement or skill enhancement (Gandhi, Hidayanto, Sucahyo, & Ruldeviyani, 2018, pp. 266–271; Kuhn & Galloway, 2019; Watson et al., 2021). Thus, to fill this literature gap, we aimed to investigate gig workers' complex behavioral responses to innovation after the pandemic.

From the knowledge-based view (KBV) perspective, firm innovation can be described as an organization's ability to absorb, manage, and create knowledge (Capolupo, Messeni Petruzzelli, & Ardito, 2023; Del-Corte-Lora, Molina-Morales, & Vallet-Bellmunt, 2016; Pérez-Luño, Alegre, & Valle-Cabrera, 2019). Thus, the core of firm innovation lies in a variety of knowledge exchange activities that employees undertake. Accordingly, we focus on addressing the interacting effects of two underlying behaviors from knowledge exchange activities on innovation, namely knowledge sharing, in which individuals make knowledge available to colleagues (Coun, Peters, & Blomme, 2019; Mueller, 2014; Hoff & Ridder, 2004), and knowledge hiding, in which individuals conceal knowledge that colleagues ask for (Connelly, Zweig, Webster, & Trougakos, 2012). Moreover, as noted at the outset, various digitally supported work practices have fundamentally altered the global career landscape, which has evolved into an unconventional, dynamic career ecosystem comprising far more complex employment relationships between firms and employees, such as independent contractors, work-at-home jobs, and virtual jobs. This represents a critical career concern, and thus we also consider career sustainability among gig workers.

Given that a critical feature of gig work is breaking traditional boundaries of working time and space, which may disrupt original knowledge flow modes at work (Adisa, Gbadamosi, & Osabutey, 2017; Daneshfar, Asokan-Ajitha, Sharma, & Malik, 2023; Kuhn & Galloway, 2019), we further contend that gig workers' knowledge exchange in the digital age may create a paradox (Fairhurst et al., 2016). On one hand, continuous development of ICT can promote gig worker knowledge sharing with employers and colleagues, and gig workers' multitasking also can facilitate parallel knowledge sharing (Rodeghero, Zimmermann, Houck, & Ford, 2021). On the other hand, gig jobs' temporary nature, coupled with such jobs' project-based pay structures, may elicit psychological issues (e.g., distrust and career insecurity), thereby hindering knowledge flows, and replacing face-to-face interactions with emails, online meetings, and other media may elicit knowledge hiding among gig workers (Anand, Offergelt, & Anand, 2021; Duan et al., 2022). However, it seems plausible to assume that gig workers may engage in knowledge sharing and knowledge hiding behavior concurrently. Considering these premises, given that knowledge sharing and knowledge hiding's characteristics partly contradict each other, to the best of our knowledge, this study is an early adopter of a paradoxical approach to yin–yang cognition (Chin et al., 2018, 2021a). In fact, it advocates a persistent symbiosis of contradictory, though interrelated, components (Chin, Shi, Del Giudice, Meng, & Xing, 2023; Fairhurst et al., 2016) to frame interacting mechanisms among knowledge sharing, knowledge hiding, and career sustainability, as well as their effect on innovation.

Specifically, the manuscript intends to answer the following research questions:

What is the relationship between gig workers' career sustainability and innovative work behavior?

How do knowledge sharing and hiding impact the relationship between career sustainability and innovative work behavior?

Applying the lens of perceived career sustainability among gig workers based on their post-pandemic innovative work behavior (IWB), this study analyzed organizational aspects that enable mechanisms affecting companies' innovation (Wang & Rafiq, 2014) in terms of how they contribute to the understanding of gig workers' paradoxical knowledge sharing and knowledge hiding behavior with respect to business innovation.

To accomplish these research goals, gig workers in China's cross-border e-commerce enterprises (CEEs) were selected as our research sample for both questionnaire surveys and interviews. This research setting was chosen because cross-border e-commerce fuses many modes of operation, transaction, and logistics across multiple territories (Chen, Yeh, & Madsen, 2019; Chen, Chen, Xu, Arrigo, & Nespoli, 2024). For instance, we find online platform operation, live commerce, advertising copywriting, online customer service, and other positions covering many flexible work arrangements, which have grown into the most important and representative employers for hiring digital-based gig workers during the post-pandemic (Churchill & Craig, 2019; Mele, Capaldo, Secundo, & Corvello, 2024). Meanwhile, this cross-border and cross-cultural background can help better anchor our study in the knowledge domain of international management.

Our main contributions can be summarized in three points. First, using a knowledge-based approach to firm innovation, we offer a better identification of gig workers' paradoxical knowledge-sharing and knowledge-hiding behavior regarding firm innovation during the unprecedentedly turbulent post-pandemic climate. Second, related to the previous point, we identify a novel, digital-based form of gig work during the post-pandemic period. Given that this work phenomenon's temporary and ever-changing nature may raise career development concerns, we also investigate the intervening effects of gig workers' perceptions of career sustainability on knowledge sharing–knowledge hiding innovation relationships. This response to the call to investigate the relationship between career sustainability and innovation in the digital age (Chin, Jiao, & Jawahar, 2019) also enriches the interdisciplinary literature at the nexus of organizational behavior (OB) and innovation domains (Maqbool, Černe, & Bortoluzzi, 2019; Pereira et al., 2023; Wang, Chin, & Lin, 2020a). In fact, we collected data from a sample with cross-cultural characteristics (i.e., CEEs), and therefore our findings offer new insights into how global managers can better cope with perplexing employment relationships, thereby promoting innovative behavior in a digitalized and volatile global work environment.

2. Theoretical foundation

2.1. Yin–yang harmonizing cognition methodology as a paradoxical framework

The yin–yang harmonizing concept embodies the core thought of Yijing, the most influential and classical philosophy in China and Confucian Asia, created 3000 years ago (Chin et al., 2018; Lai, 2008). From a philosophical perspective, the yin–yang harmonizing notion is compatible ontologically and epistemologically with the paradox theory, which is used widely in the West. Both approaches characterize an enduring, dynamic, and symbiotic form of two or more opposing, yet interdependent, elements, and both have been adopted to interpret contradictory correlations of events in an history (Chin, Shi, Rowley, & Meng, 2021; Schad, Lewis, Raisch, & Smith, 2016). However, Western paradox theory and Eastern yin–yang harmonizing still differ methodologically in terms of method preferences. The former is anchored in the Western scientific-method tradition and is inclined toward more nomothetic explanations and objective accounts for paradoxes, while the latter generally leans toward creating metaphors with yin and yang's dual polarized elements as an open system to map paradoxes cognitively (Chin, Shi, et al., 2021).

In recent years, scholars have employed yin–yang harmonizing cognition as a meta-theorizing tool not only to build theoretical logic

explaining paradoxical phenomena in the management and organizational research fields (Chin et al., 2023; Redding, 2017), but also to conduct sense-making in more general social science domains (Arrigo, Matthyssens, & Struyf, 2022; Miron-Spektor, Ingram, Keller, Smith, & Lewis, 2018; Smith & Lewis, 2011). For instance, while considering the framing of yin–yang harmonizing as an indigenous Chinese cognitive methodology for explaining paradoxes' dynamics, Chin, Shi, Rowley, and Meng (2021) identified three laws of yin–yang harmonizing cognition: (1) It refers to a persistent mental process for harmonizing contradictions within a physical or virtual context; 2) it prefers to use a nonlinear thinking style and irenic approaches; and 3) it seeks temporally balanced and morally correct solutions.

As indicated earlier, gig work's primary characteristics are project-based compensation, temporary employment, and flexibility in when/how/where the work is performed (Watson et al., 2021). Thus, gig workers work in a context full of paradoxes and uncertainties, as indicated by the work's often invisible, dynamic, and short-lived nature. Given that the cognitive frame of yin–yang harmonizing is particularly appropriate for encoding micro-level paradoxical mechanisms (Redding, 2017), we adopted it as our theoretical foundation for developing our hypotheses.

2.2. The impact of gig workers' career sustainability on innovative work behavior

Career sustainability refers to the meaning, self-realization, and well-being provided to workers by sequences of career experiences across various time periods and myriad social spaces (Bal, Matthews, Dóci, & McCarthy, 2020; Chin, Jawahar, & Li, 2022). As mentioned above, various digitally supported work practices have altered the global career landscape (Watson et al., 2021), confounding work arrangements and thus sharply disrupting the traditional understanding of career development. On one hand, such dynamic gig work arrangements may provide workers with more flexibility and convenience, allowing them to reach a better work–life balance (Duggan, Carbery, McDonnell, & Sherman, 2023) and cultivate a strong sense of autonomy and self-determination. This also can motivate employees to perform better overall. On the other hand, the loose and informal connections between companies and gig employees also may generate negative occupational concerns and insecurities that can hamper organizational innovation (Wood, Graham, Lehdonvirta, & Hjorth, 2019). Thus, it becomes essential to explore how gig workers' perceived career sustainability affects their IWB.

Studies of the impact of gig workers' career concerns on innovation are limited, and their findings often remain ambiguous. For instance, some scholars have suggested that gig workers' informal relationships with organizations and longtime remote work will increase these workers' career concerns and reduce their motivation, eliciting slow progress in their work engagement and performance (Behl, Jayawardena, Ishizaka, Gupta, & Shankar, 2022; Wardhana, Herlina, Bangsawan, & Tuori, 2020). Nevertheless, another study indicates that time and space flexibility increase gig workers' perception of career control, facilitating their ability to achieve the best innovative performance (Gandhi et al., 2018, pp. 266–271).

The increasing popularity of digital-based gig work has changed the traditional understanding of career sustainability fundamentally. Due to their digital nature, some gig workers may feel very unconfident about these unstable work arrangements and isolated work relationships, as reflected in their poor perceptions of career sustainability (Chin et al., 2023; Daneshfar et al., 2023). Too often, such a perceived career crisis pushes them to engage in proactive vocational behavior (Zhang et al., 2020), that is, to put more effort into more than one project simultaneously to maintain a relatively stable partnership with multiple platforms or organizations. In a nutshell, a sense of career crisis will motivate gig workers to engage in IWB (Rahimnia, Eslami, & Nosrati, 2019). From another perspective, gig workers may perceive a high level

of career sustainability in terms of flexible work time or space and multi-platform job opportunities, which may cultivate a greater willingness to take risks and tackle challenges (Azeem & Kotey, 2023), thereby promoting IWB. However, if perceived career sustainability lies in the intermediate degree, gig workers may lose their enthusiasm to innovate because of status quo mentalities, leading to reduced IWB. Many studies have pointed out that, as a kind of proactive behavior, IWB needs certain external environmental factors or internal driving factors as catalysts (Maqbool et al., 2019). Following this logic, when employees are in a state of balanced career sustainability, the driving force of their IWB will be insufficient, as neither the pressure of unemployment to force gig workers to improve their work performance nor enough job security to make gig workers pursue greater work value through innovation and other behavior will be present (Chhabra & Pandey, 2023).

These arguments echo the yin–yang harmonizing cognition frame (Chin et al., 2018, 2021b). When career sustainability does not reach a moderate state, an increase in gig workers' perceived career sustainability will reduce their willingness to conduct IWB (i.e., yin and yang neutralize each other), but when career sustainability is in a balanced state, it will relate positively to gig workers' IWB (i.e., yin and yang complement each other). Thus, we assume that a nonlinear relationship exists between career sustainability and IWB, and formulate the first hypothesis:

H1. The relationship between gig workers' career sustainability and innovative work behavior is curvilinear (U-shaped), with the lowest IWB level at the intermediate degree of career sustainability.

2.3. Knowledge sharing and knowledge hiding's paradoxical impacts on innovative work behavior

Although much discourse has been generated about how to define knowledge and identify the boundaries between information and knowledge in existing studies (Zahra, Neubaum, & Hayton, 2020), many researchers have acknowledged that knowledge derives from information but needs to be processed through human reflection and enlightenment (Wang & Chin, 2020a; 2020b). Based on this view, we followed mainstream research that has extended connotations from Plato's *Theaetetus*, viewing knowledge as “justified true belief” (Chin, Wang, & Rowley, 2021; Nonaka, 1994).

This paper used CEEs' career landscape in the post-pandemic period as research context. During this period, digitally supported work arrangements have been prevalent, and a modern type of digitally based gig work characterizes a growing segment of a global workforce (Watson et al., 2021). Through this logic and the premise that knowledge exchange requires a specific social environment (Papa, Dezi, Gregori, Mueller, & Miglietta, 2020), the CEE context can be deemed an unconventional digital-driven career ecosystem involving a complex, yet smart, infrastructure underlying employees' knowledge exchange behavior.

Following these aspects, it is plausible to assume that the CEE context offers an unorthodox, digitally mediated knowledge network coupled with ever-changing arrangements. This may elicit myriad concerns or even tensions that often evoke counter-productive and competing behavior among employees, thereby hindering knowledge exchange (Tian et al., 2021). Thus, the CEE context may function as a double-edged sword in knowledge exchange. On the positive side, the application of ICTs and associated online platforms can facilitate gig workers' knowledge sharing with their employers and colleagues to reduce information duplication (Masood, Zhang, Ali, Cappiello, & Dhir, 2023). However, such work's temporary nature and the lack of face-to-face communication, coupled with project-based pay structures, may elicit some psychological issues such as distrust, insecurity, emotional exhaustion, opportunistic mindsets, psychological contract breach, and low psychological empowerment. This hinders knowledge

flows and causes knowledge hiding (Bari, Ghaffar, & Ahmad, 2020; Wang, Wang, & Chang, 2019; Yao, Zhang, Luo, & Huang, 2020).

According to the KBV, intellectual capital, as the totality of organizational knowledge assets, places humans as the most critical knowledge resource for promoting innovation and other performance measures, thereby providing the main competitive advantage for firms (Fait, Cillo, Papa, Meissner, & Scorrano, 2023). In fact, extant research has proved that intellectual capital can play the most pivotal role in a firm's success, with the help of a smooth exchange of knowledge (Wang, Wang, Cao, & Ye, 2016), while knowledge exchange can be characterized by knowledge sharing and knowledge hiding interactions (Garcia, Oliveira, & Brohman, 2022), as addressed earlier. Thus, we focus on demonstrating knowledge sharing and knowledge hiding's paradoxical impacts on IWB in the unconventional CEE context.

Knowledge sharing refers to the process of mutual exchange and knowledge co-creation among employees and is viewed as the most basic part of knowledge exchange (Hoff & Ridder, 2004; Fait et al., 2023; Perotti, Rozsa, Kuděj, & Ferraris, 2024). More specifically, knowledge sharing exerts a synergistic and cooperation-enhancing effect on positive performance and outcomes at the organizational or individual level, such as innovation (Majchrzak & Malhotra, 2016; Papa et al., 2020), knowledge transformation (Magni, Papa, Scuotto, & Del Giudice, 2023), and commitment (Cabrera & Cabrera, 2002).

In contrast, knowledge hiding relates to individuals' intentional attempts to conceal or withhold knowledge that colleagues request (Bhatti, Hussain, Santoro, & Culasso, 2023; Connelly et al., 2012; Hawamdeh, 2023) and often is considered a complementary knowledge sharing concept through the understanding of not sharing (Jin et al., 2024; Gagné et al., 2019; Caputo, Magni, Papa, & Corsi, 2021). Especially, two main characteristics of knowledge hiding separate it from "lack of knowledge sharing": (1) others must request the knowledge, and (2) knowledge hiding must be intentional behavior (Khan et al., 2023; Anand et al., 2021). Knowledge hiding is often seen as a hindrance to business development (Arain et al., 2022b; Chhabra & Pandey, 2023; Wu et al., 2023).

Referring to self-determination theory, knowledge sharing and knowledge hiding behavior are promoted through different intrinsic and extrinsic forms of motivation and are not necessarily contradictory (Hadjielias, Christofi, & Tarba, 2021; Connelly et al., 2012; Issac, Bednall, Baral, Magliocca, & Dhir, 2023). Employees will weigh the benefits and costs associated with each behavior, and thus proceed when the benefit is greater than the cost, or otherwise avoid actions (Devi, 2024). This suggests that employees may share some parts of knowledge with their colleagues while simultaneously hiding, strategically and intentionally, some other knowledge components (Duan et al., 2022). Thus, individuals tend to disclose knowledge with reservations to avoid jeopardizing their jobs, and consequently knowledge sharing and knowledge hiding often occur simultaneously and are undertaken by the same person (Chin et al., 2023; Vaast, 2023), for which the underlying logic is cooperation (i.e., cooperation and competition; Yao, Zhao, Hu, & Zheng, 2023).

Many studies have verified the relationship between knowledge exchange and individual work performance, while most have investigated only one side of knowledge exchange – either knowledge sharing or knowledge hiding (Singh, 2022; Long, Liu, & Shen, 2023). However, recent research has pointed out that knowledge sharing and knowledge hiding may occur simultaneously in the workplace (Chin et al., 2023; Devi, 2024). For example, in order to better establish trust and cooperation with others, workers will take the initiative to share some of their knowledge with their colleagues, which improves the overall level of knowledge sharing within a company. Meanwhile, when confronted with requests from colleagues, workers may deliberately withhold some key information that is beneficial to them and be selective about what they present, which also results in a certain level of knowledge hiding (Chen, Wei, & Rice, 2020). Considering that the two knowledge exchange phenomena may occur simultaneously, thus generating

paradoxical challenges for individuals (Garcia et al., 2022), we focus on demonstrating knowledge sharing and knowledge hiding's paradoxical impacts on IWB.

Considering the yin–yang harmonizing cognition frame, we argue further that knowledge sharing and knowledge hiding function as the primary yin and yang components in knowledge exchange situations, which are significantly interrelated and can be perceived synchronously. Moreover, we do not simply interpret knowledge hiding as the absence of knowledge sharing, but rather view it as an interdependent behavior or action that may promote or offset the effect of knowledge sharing on employee behavior. Notably, in competitive circumstances, knowledge is viewed as a high-value resource that should not be shared easily. Therefore, in such a situation, employees' behavior within an organization that shares knowledge while intentionally hiding some key knowledge not only can be tolerated by their colleagues, but also can stimulate others' creative activity (Yao et al., 2023). Consequently, it can be assumed that knowledge sharing and knowledge hiding's co-existence among gig workers will generate a mutually reinforcing effect (with yin and yang complementing each other) that may affect employees' IWB significantly. Thus, we formulate Hypothesis 2 as follows:

H2. The interaction term of knowledge sharing and knowledge hiding relates positively to innovative work behavior.

2.4. Career sustainability, knowledge sharing, and knowledge hiding's interaction effects on innovative work behavior

By using ICT, knowledge exchange transcends original spatiotemporal workplace boundaries so that knowledge sharing and knowledge hiding also extend beyond traditional work premises and time. Furthermore, ICT is instrumental in facilitating gig workers' knowledge sharing and confers advantages for their work (Masood et al., 2023). However, such a work arrangement also may have inherent shortcomings, such as (1) a lack of shared physical context and face-to-face communication, leading to social isolation (Bell, Brown, & Weiss, 2017), and (2) technology limitations that hinder the smooth flow of knowledge within digitally based platforms (Adisa et al., 2017).

Using yin–yang harmonizing cognition to justify the above paradoxes, we propose that while digitally supported work arrangements partly increase gig workers' flexibility in sharing their knowledge, they also may cast a twisted veil over knowledge sharing. In fact, online platforms also allow concealing and withholding knowledge more easily, owing to the reduced level of behavioral control by supervisors and organizations, as well as the lack of a shared physical environment or context. Viewed from this perspective, knowledge hiding can be positioned as an indispensable part of knowledge sharing in the process of knowledge exchange among gig workers. Moreover, whereas ICT has been found to promote employees' distrust of each other due to the low level of accountability in online interactions, particularly when face-to-face synchronous communication is largely replaced by emails (Adisa et al., 2017; Wood, Daniels, & Ogbonnaya, 2018), digitally based gig workers tend to withhold key knowledge requested by those whom they distrust and opt to protect themselves or the company's interests (Arias-Pérez & Vélez-Jaramillo, 2022). Given that knowledge hiding and knowledge sharing's co-existence is unavoidable, we believe that strategically, it is imperative to maintain a harmonious knowledge sharing–knowledge hiding balance to achieve better-quality knowledge exchange.

Based on the KBV, intellectual capital, particularly human capital, by being the most critical knowledge resource for facilitating organizational innovation, can play a crucial role when coordinated with appropriate knowledge management strategies (Serenko, 2024; Wang et al., 2016). As mentioned above, IWB, as a kind of proactive behavior, needs certain external environmental or internal driving factors as catalysts (Maqbool et al., 2019). Therefore, when gig workers are in a group

with a good knowledge-sharing atmosphere, such environmental factors will encourage them to conduct IWB spontaneously. As a result, the original nonlinear effect of career sustainability on IWB will be weakened. From this perspective, we assume that knowledge sharing, knowledge hiding, and career sustainability dynamic interactions among gig workers exert a synergistic effect on IWB (see Fig. 1). Thus, we hypothesize.

H3. The relationship between career sustainability and innovative work behavior is moderated by knowledge sharing and knowledge hiding interaction. When career sustainability is at a low level, a high level of knowledge sharing, accompanied by a low level of knowledge hiding, will alleviate the negative relationship between career sustainability and IWB. When career sustainability is at a high level, a high level of knowledge sharing, accompanied by a low level of knowledge hiding, will foster a positive relationship between career sustainability and IWB.

3. Method

3.1. Study 1: quantitative study

3.1.1. Data collection

We used a questionnaire survey to collect the data for this quantitative study (Creswell, 2014). As noted earlier, our sample comprised gig workers in China’s CEEs, whose work arrangements are digitally based, temporary, and flexible, such as online customer service, online shop operation, advertising copywriting, and live commerce. This cross-cultural context anchored our study in an investigation of career sustainability impacts on innovation, as well as knowledge sharing–knowledge hiding interaction’s intervention effect during the pandemic in the international business context.

Our questionnaires were distributed mainly online. We conducted the survey and collected data with the help of Sojump, a reliable online questionnaire survey company in China. Due to the weak connection between gig workers and their employers, as well as their flexible and uncertain workplaces, finding a large number of gig workers in CEEs through traditional means, such as going to an office to issue and collect questionnaires, was difficult. Thus, we adopted purposive and snowball sampling to collect data from such hard-to-reach populations (Goodman, 2011). We only needed to find a few gig workers at CEEs, as this sampling technique enabled us to secure access to their colleagues and gradually increase our sample size.

Before distributing the formal surveys, our research team conducted a round of phone interviews with several gig workers and professors in related fields to ensure our research models’ and measurements’ correctness. Their feedback confirmed that our hypotheses were logical.

Based on a time-lag research design (Shin, Hur, & Choi, 2018), we collected data at two time points to avoid the likelihood of common method variance (CMV). This research project was launched at the beginning of 2022, and the first data collection round was completed in mid-February. Six months later, we conducted a second data collection round with the same participants from the first round. As a result, data were obtained from a total of 331 employees (including data from Rounds 1 and 2), representing a response rate of 65.0%. We then

analyzed the data on gig workers’ knowledge sharing, knowledge hiding, and career sustainability collected during the first round and on their IWB collected during the second round. The participants’ demographic characteristics are provided in Table 1.

3.1.2. Measures

As Asian respondents prefer to choose the midpoint of a scale to disguise their true thoughts (Chin, 2015), we used six-point Likert-type scales, ranging from “strongly disagree” to “strongly agree”, to prevent response bias.

Knowledge sharing (KS): We adopted Hu, Horng, and Sun (2009)’s scale and deleted some items to better fit the Chinese context. We also adjusted the items to measure gig workers’ perceptions of colleagues’ willingness to share knowledge. Sample items included “My colleague is eager to exchange knowledge without asking for anything in return” (Cronbach’s $\alpha = 0.935$).

Knowledge hiding (KH): The same as the above, except that we adopted Connelly et al. (2012)’s scale and adjusted it to better measure gig workers’ perceptions of their colleagues’ tendency to hide knowledge. Sample items included “My colleague said that he offered him/her some other information instead of what he/she really wanted” (Cronbach’s $\alpha = 0.909$).

Career sustainability (CS): We adopted Chin et al. (2019)’s scale to measure gig workers’ CS. Sample items included “My career gives me a lot of flexibility” and “My career allows me to seek new opportunities” (Cronbach’s $\alpha = 0.932$).

Innovative work behavior (IWB): We referred to Van Den Hooff and De Ridder (2004)’s six-item scale to measure gig workers’ IWB, which comprised three sub-dimensions (idea generation, promotion, and realization). Sample items included “I am willing to create new ideas for improvements” and “I am willing to generate original solutions to problems” (Cronbach’s $\alpha = 0.941$).

Control variables: We controlled for age (number of years), gender (0 = male, 1 = female), marital (0 = single, 1 = married), and years working for CEEs (1 = less than three years, 2 = about three to five years, 3 = more than five years).

3.1.3. Reliability and validity

The Cronbach’s α values for all variables were above 0.70, indicating that all measurements had acceptable reliability. The construct reliability (CR) values were above 0.7, reflecting good construct validity in our measurements. Moreover, average variance extracted (AVE) was above 0.5, confirming good discriminant validity (see Table 1).

We then conducted confirmatory factor analyses (CFAs), and the full model displayed the best fit to our data that reflected the variables’

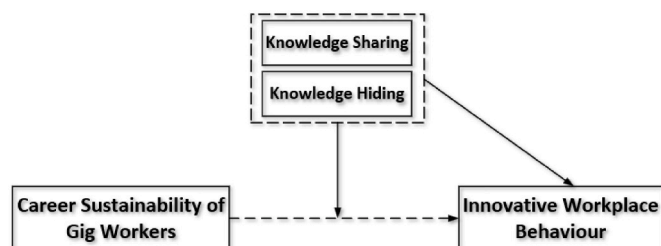


Fig. 1. Research framework.

Table 1
Participants’ demographic characteristics.

	Frequency	Percentage
Age		
18–29 years old	125	37.8%
30–39 years old	142	42.9%
40–49 years old	39	11.8%
Above 50 years old	25	7.5%
Gender		
Male	161	48.6%
Female	170	51.4%
Marital Status		
Single	114	34.4%
Married	217	65.6%
Education		
Junior college or below	112	33.8%
Bachelor’s degree	167	50.5%
Master’s degree or above	52	15.7%
Work Experience		
Less than 2 years	141	42.6%
About 2–5 years	97	29.3%
More than 5 years	93	28.1%

discriminant validity ($\chi^2_{n=331} = 992.109$, $df = 289$, $\chi^2/df = 3.190$, $p < 0.001$, CFI = 0.902, TLI = 0.890, RMSEA = 0.086, SRMR = 0.061), thereby confirming nomological validity (see Table 2). Also, the values from goodness-of-fit indices and inter-construct correlations were within acceptable limits (see Table 3). Thus, the scales' convergent and discriminant validity were verified further.

Table 2
Factor loadings of scales.

Constructs	Measurement items	Factor loadings	AVE	CR
CS	My career enables me to have a good standard of living	0.865	0.790	0.950
	My career makes me feel happy because I use my resources well	0.862		
	My career enables me to integrate information obtained from different sources	0.900		
	My career enables me to critically evaluate information obtained from different sources	0.898		
	My career builds my ability to absorb information and knowledge	0.919		
KS	My colleague respects others' impression that he is willing to assist people in a team setting	0.803	0.711	0.945
	My colleague is willing to share knowledge to pay back colleagues that have assisted him	0.811		
	My colleague enjoys learning and sharing knowledge through teamwork	0.876		
	My colleague will personally help other team members regardless of whether they are in need	0.885		
	My colleague is willing to help other team members	0.864		
KH	My colleague is willing to use his spare time to help other team members	0.882	0.787	0.936
	My colleague is eager to exchange knowledge without asking for anything in return	0.778		
	My colleague said that he agreed to help him/her but never really intended to	0.912		
	My colleague said that he agreed to help him/her but instead gave him/her information different from what he/she wanted	0.777		
	My colleague said that he told him/her that he would help him/her out later but stalled as much as possible	0.929		
IWB	My colleague said that he offered him/her some other information instead of what he/she really wanted	0.922	0.776	0.954
	I am willing to create new ideas for improvements	0.861		
	I am willing to search out new working methods, techniques, or instruments	0.898		
	I am willing to mobilize support for innovative ideas	0.902		
	I am willing to acquire approval for innovative ideas	0.896		
	I am willing to transform innovative ideas into useful practice	0.881		
	I am willing to introduce innovative ideas into the work environment in a systematic way	0.845		

Table 3
CFA results.

Models	χ^2	DF	χ^2/DF	RMSEA	CFI	TLI	SRMR
Full model	922.109	289	3.190	0.086	0.902	0.890	0.061
3-factor model	1897.135	293	6.47	0.129	0.777	0.753	0.090
2-factor model	2379.637	296	8.03	0.146	0.710	0.682	0.089
1-factor model	3430.333	298	11.511	0.178	0.565	0.525	0.126

Notes: Full model: IB&CS&KS&KH; 3-factor model: IB + CS&KS + KH; 2-factor model: IB + CS + KS&KH; 1-factor model: IB + CS + KS + KH.

3.1.4. Common method variance

We then adopted the CFA marker method (Podsakoff, MacKenzie, & Podsakoff, 2012) to test common method variance (CMV). Compared with the full model ($\chi^2_{n=331} = 992.109$, $df = 289$, $\chi^2/df = 3.190$, $p < 0.001$, CFI = 0.902, TLI = 0.890, RMSEA = 0.086, SRMR = 0.061), the new model with the latent CMV factor still fit the data well ($\chi^2_{n=331} = 1092.432$, $df = 335$, $\chi^2/df = 3.260$, $p < 0.001$, CFI = 0.896, TLI = 0.883, RMSEA = 0.083, SRMR = 0.061) and did not indicate any significant differences ($\Delta\chi^2 = 0.151$, $p > 0.050$), indicating that CMV was not a major threat here.

3.1.5. Results of quantitative study analysis

The data were analyzed using Mplus Version 8.3. To test the proposed model's hypotheses, we employed moderated hierarchical regression analyses, a method used relatively frequently to verify interaction effects' significance by estimating relationships among independent, dependent, and moderating variables (Jaccard, Wan, & Turrisi, 1990; Wang et al., 2020a).

We first mean-centered all variables and then added the independent variable, interaction terms, and three-way interaction terms into the regression sequentially, following the reasoning logic of moderated hierarchical regression analyses (Adomako, 2021; (see Table 4) (see Table 5).

As shown in Model 2, career sustainability registered a positive relationship with IWB ($\beta = 0.564$, $p < 0.001$). Model 3 added the square term of career sustainability. The results reflected that the square term of career sustainability had a significantly positive relationship with IWB ($\beta = 0.145$, $p < 0.001$), indicating that career sustainability had a U-shaped relationship with IWB, thereby supporting Hypothesis 1.

Model 4 indicated that knowledge sharing was related positively to IWB ($\beta = 0.567$, $p < 0.001$). Model 5 indicated that knowledge hiding was related negatively to IWB ($\beta = -0.007$, $p < 0.1$). Model 6 indicated that knowledge sharing–knowledge hiding interaction was related positively to IWB ($\beta = 0.066$, $p < 0.01$), thereby confirming Hypothesis 2.

According to Model 10, the knowledge sharing–knowledge hiding interaction effect moderated career sustainability and IWB's U-shaped relationship ($\beta = 9.908$, $p < 0.01$). Furthermore, we also plotted the three-way interactions in Fig. 2 to visualize the moderating effects of the knowledge sharing–knowledge hiding interaction terms ($CS^2 \times KS \times KH$), indicating that career sustainability has the strongest positive relationship with IWB when knowledge hiding is low and knowledge

Table 4
Descriptive statistics and correlations.

Variable	Mean	SD	CS	KS	KH	IWB
CS	4.451	0.979	0.889			
KS	4.571	0.832	0.728 ^a	0.843		
KH	3.313	1.900	0.159 ^a	0.092	0.887	
IWB	4.616	0.720	0.596 ^a	0.591 ^a	0.043	0.881

Notes: N = 331. The values of the square roots of AVE (average variance extracted) were shown on the diagonal in bold.

^a $p < 0.010$.

Table 5
Results from regression analyses.

Variables	Model1	Model2	Model3	Model4	Model5	Model6	Model7	Model8	Model9	Model10
Age	0.249 ^a	0.121 ^c	0.010 ^d	0.173 ^c	0.250 ^a	0.017 ^a	0.133 ^c	0.012 ^c	0.108 ^c	0.117 ^c
Gender	-0.136 ^b	-0.100 ^c	-0.174 ^c	-0.116 ^b	-0.136 ^b	-0.196 ^b	-0.103 ^b	-0.181 ^b	-0.122 ^a	-0.121 ^a
Marriage	0.006	-0.006	-0.017	-0.003	0.004	-0.016	-0.018	-0.033	-0.022	-0.018
Year	-0.015	0.015	0.005	-0.015	-0.014	-0.003	0.024	0.004	0.010	0.017
CS		0.564 ^a	-0.719 ^a				-1.124 ^a	-1.209 ^a	-3.192 ^a	-6.478 ^a
CS ²			0.145 ^a				2.075 ^a	0.216 ^a	3.887 ^a	7.898 ^a
KS				0.564 ^a		0.314 ^a	0.573 ^b	0.364	-0.865 ^c	-1.756 ^c
KH					-0.007 ^d	-0.347 ^b	-0.175	-0.379	-0.176	-2.144 ^c
KS × KH						0.066 ^b	0.461	0.115 ^d	2.446 ^c	4.956 ^a
CS × KS							-0.825 ^c	-0.046	5.222 ^a	10.910 ^a
CS × KH							0.461	0.039	-2.349 ^d	6.569 ^d
CS × KS × KH								-0.017	-3.138 [*]	-14.626 ^a
CS ² × KS									-4.594 ^a	-10.199 ^a
CS ² × KH									3.234 ^c	-4.633
CS ² × KS × KH										9.908 ^b
R ²	0.077 ^b	0.380 ^a	0.447 ^a	0.389 ^a	0.077 ^b	0.403 ^a	0.516 ^a	0.518 ^a	0.547 ^a	0.557 ^a

Note: N = 331.

- ^a p < 0.001.
- ^b p < 0.010.
- ^c p < 0.050.
- ^d p < 0.100.

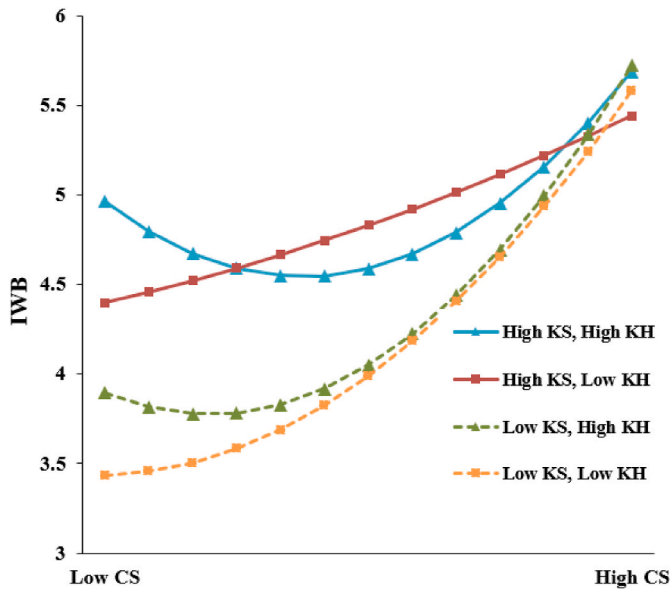


Fig. 2. Three-way interaction plot.

sharing is high, thereby confirming Hypothesis 3.

3.2. Study 2: qualitative study

3.2.1. Data collection

In Study 1, we conducted an empirical analysis to test the hypotheses proposed in the theoretical model. With Study 2, we added a qualitative investigation to support our quantitative findings and further reveal the intrinsic mechanism underlying the complex relationships (Zhang, Zhang, & Daim, 2023).

We selected two representative companies engaged in cross-border e-commerce as our research organizations: Company A and Company B. Detailed information about the two companies is presented in Table 6. We chose these companies for the following three reasons. First, they have demonstrated a steadfast commitment to cross-border e-commerce and have exhibited commendable performance in this domain. Second, they facilitate the buying and selling of products across international borders, allowing consumers to access a diverse range of products from

Table 6
Detailed information on each case.

		Company A	Company B
Business scope		In electronics retail	In construction material retail
Interview No.	Round 1	15	15
	Round 2	10	8
Interview time	Round 1	February–March 2022 (40 min–1 h per interview)	February–March 2022 (40 min–1 h per interview)
	Round 2	June–July 2022 (15–30 min per interview)	June–July 2022 (15–30 min per interview)
Roles of individuals interviewed		Marketing, advertising copywriting, customer service, data analysis	Purchasing, logistics, inventory, technical support, live commerce
Employee number		4900	3800
Founded in year		1994	2007

various countries and regions, and their commitment to customer satisfaction, efficient logistics and online shopping experiences has contributed to their prominence in the cross-border e-commerce landscape. Third, both CEEs employ a large number of gig workers domestically and abroad, thereby ensuring our research objects' consistency and providing comprehensive insights into CEEs.

To enhance our research findings' reliability and accuracy, we gathered information regarding how gig workers from the two CEEs conduct IWB from several sources, including interviews, observations, discussions, and records. At Time 1, we conducted interviews with 30 participants—15 from each company. However, due to business trips, vacations, contract expirations or other personal reasons, some participants previously interviewed at Time 1 were unavailable at Time 2. Consequently, at Time 2, we conducted interviews with 18 participants to assess their perspectives on the independent variable's impacts, as well as moderators on the dependent variable. Furthermore, the second round of interviews aimed to validate any discrepancies identified during the first round and to explore retrospectively any reasons and methodologies. Four researchers were present on site to facilitate and manage interview questions, take notes, and document the interviews.

3.2.2. Qualitative study analysis

After conducting a comprehensive analysis of these cases, we found relatively consistent results concerning gig workers in both CEEs. As presented in Table 7, the illustrative quotes mainly demonstrated the

Table 7
Illustrative quotes for hypothesis relationships.

	Illustrative quotations	Relationships
H1	<p>Company A: I have signed a temporary contract with my company, and may face the risk of unemployment in the near future. My colleagues and I always work on different projects through online platforms, so I often feel isolated and lack a sense of belonging. Therefore, to ensure my future survival and address the uncertainties caused by an unstable career, I always strive to learn new knowledge and skills to improve my competitiveness, and at the same time employ new technologies and methods to do my job well.</p> <p>Company B: The after-effects of the pandemic brought multiple challenges related to self-preservation, which made our upper management start downsizing and lay off gig workers. This decision triggered high career instability among our gig workers, catalyzing our intrinsic innovative potential to avert the risk of layoffs. I can feel that many employees around me, including myself, are putting more effort into their work and showing much better innovative performance.</p> <p>Company A: I have just been promoted to a mid-level manager, which is very difficult for gig workers. I don't have to worry too often about being fired like I used to, though my career prospect is still in a so-so state. Now, I just want to do my current job well and take a breather for a while. I prefer to adopt a more conservative attitude toward my work, focusing more on completing the tasks at hand rather than seeking new methods to tackle them.</p> <p>Company A: My company has provided me with flexible working hours and places to achieve a work-life balance, and it also provides me with sufficient career opportunities, both of which make my career sustainability remain in a high level. These have greatly expanded my knowledge scope and capability, unleashed my innovative potential, and inspired my willingness to propose new ideas, try new ways, accept changes and advocate for innovation.</p>	Low career sustainability promotes gig workers' innovative behavior
H2	<p>Company A: Our boss assigned a project to me and my colleague to assess our abilities. My colleague asked me for assistance with basic operation processes as he was unaware of them due to his absence from pre-job training. I did not reveal the complete information to maintain my competitive advantage, but shared a few as we may collaborate in the future. We all did our best to expand relevant knowledge and utilize our innovative capabilities to maximum.</p> <p>Company B: Our company's internal databases and knowledge manuals are open to gig workers and management, which allows knowledge diffusion among all hierarchical levels, providing equal opportunities for everyone. However, our company's internal division of roles and responsibilities makes gig workers independent in dealing with their respective business segments, resulting in concealing business knowledge and skills to gain a competitive edge. I fully understand my colleagues' reservations about sharing knowledge, which, in turn, motivates me to strive to gain my own competitive edge through innovation.</p> <p>Company B: Our company's gig workers have established extensive connections with employees from various platforms. The company actively encourages us to enhance our knowledge through active collaborations and be updated regarding market trends. We also use it to maintain competitive advantage by hiding some key knowledge and surpassing our colleagues. Overall, this strategy increases our innovative capacity.</p>	The interaction of knowledge sharing and hiding promotes gig workers' innovative behavior
H3	<p>Company A: If I am not in a state of competition, I prefer to share knowledge rather than hide it. By sharing knowledge, we can gain more experience and insights to solve problems effectively. And it elicits team collaboration, improves team's knowledge, and establishes an innovation atmosphere. On the contrary, hiding knowledge may lead to interpersonal tension, and disrupt the team's collaborative atmosphere. Therefore, sharing more knowledge instead of hiding it among team members can motivate me to actively associate with the team, broad my mindset and finally realize innovation.</p> <p>Company B: Our company maintains esteemed relationships with employees, particularly gig workers, where young and talented gig workers are encouraged to have obstacle-free communication, thereby favoring the voluntary sharing of experience and smooth knowledge flow, and alleviating the potential of knowledge hoarding. As a result, it increases their morale to vigorously indulge in their teams and contribute actively to the company's long-term development by devoting their maximum efforts and using their creative talents.</p>	The interaction of knowledge sharing and hiding moderates the relationship between career sustainability and innovative work behavior

hypothetical relationship verified above, further revealing gig workers' underlying behavioral and psychological motivations.

3.3. Results—Interpretation of career sustainability's direct effect on innovative work behavior

The interviews from workers at Company A and Company B indicated that the nature of gig works causes these workers to be extremely sensitive to their careers, and thus directly affects their behavior and performance at work. Company A has a larger scale than Company B, with better employee benefits and more opportunities; thus, with the same medium level of career sustainability, gig workers in Company A prefer staying, while in Company B, workers prefer looking for other jobs, with their only constant being their relatively low IWB.

Company A provides career development planning and training opportunities for gig workers to help them understand their career paths and achieve long-term success in their careers. The company has realized that only a clear career development path can enhance employees' sense of belonging and thus inspire their enthusiasm and innovative spirit. Furthermore, Company A has established a reward system to stimulate their enthusiasm for innovation, through bonuses and awards to increase gig workers' perception of career sustainability.

In contrast, with changes and risks in the external environment, Company B fired some gig workers for tax reasons, eliciting a sense of career crisis among the remaining gig workers. Obviously, this greatly stimulated gig workers' inherent innovative potential, as they exhibited more IWBs to avoid layoffs. However, for some gig workers whose careers had developed to an intermediate state, the outside world's appeal

gradually outweighed the idea of maintaining the status quo. In these circumstances, they may tend to leave their jobs and start their own businesses, resulting in a significant reduction in their innovative behavior.

3.4. Results—Interpretation of interacting effect on knowledge sharing and hiding in innovative work behavior

According to interviews, the coexistence of knowledge sharing and knowledge hiding within organizations is due mainly to the contradictory relationship between competition and cooperation among employees. Gig workers will share some of their knowledge for cooperation and partnership reasons, but also selectively hide some key knowledge to maintain their own unique competitive advantage. This atmosphere of competition and cooperation perceived from the knowledge exchange within organizations also promotes gig workers' innovation consciousness.

Company A encourages teamwork through team-building activities to reduce individualism and prevent knowledge retention and concealment. They also created an internal online platform, through which gig workers could share ideas and experiences across borders, which could facilitate cross-departmental and cross-team communication, help break down barriers, and promote knowledge flow within the company. However, remote work increases the risk of knowledge hiding: Gig workers still will choose to hide knowledge on some issues as the organization lacks strong supervision.

Within Company B, all internal databases and knowledge manuals are open, so everyone can access them equally. Simultaneously, due to the clear division of responsibilities within the enterprise, gig workers are independently responsible for their own business segments in actual work, resulting in less communication between different segments. Furthermore, gig workers need to fight actively for the business sector because a certain degree of competition exists among gig workers that leads them to hide their key knowledge to maintain their own competitive advantage.

It is worth noting that in both companies, the perception of coexistence of knowledge sharing and knowledge hiding within organizations creates a sense of competition and cooperation among gig workers, and thus stimulates their enthusiasm for innovation.

3.5. Results—Interpreting knowledge sharing and hiding's moderating effects in the relationship between career sustainability and innovative work behavior

The interviews also implied that the organizational knowledge exchange atmosphere will interfere with the IWB of gig workers with different levels of career sustainability perception.

Within Company A, gig workers regularly organize online salons to promote knowledge sharing and in-depth discussions among employees, providing them with an opportunity to share their work experiences and specific knowledge. Furthermore, Company A established a centralized knowledge base that contains company documents, manuals, tutorials, and the like, which provide gig workers worldwide with easy access to internal resources, as well as sufficient opportunities for them to learn and enrich personal knowledge.

Company B established a knowledge-sharing platform through which gig workers can learn from each other, which makes them more willing to contribute ideas and opinions, thereby improving knowledge-sharing levels within the enterprise. In addition, Company B created an incentive system to encourage gig workers to share key information, which reduced information asymmetry, thereby providing a more favorable climate for innovation.

Overall, both Company A and Company B have created a good atmosphere of knowledge exchange, in which the degree of knowledge sharing is high, while knowledge hiding still exists, but in a low degree. Such measures will provide a good working environment and a friendly

competitive atmosphere for gig workers, thus strengthening and reinforcing the innovation passion of gig workers with different degrees of career sustainability.

4. Discussion

The results from our empirical analysis indicated that the findings fully support the three hypotheses investigated, and the qualitative analysis further revealed the underlying behavioral and psychological motivations behind these results. First, a U-shaped relationship was found between career sustainability and IWB, in which the lowest IWB was at the intermediate degree of CS, partly indicating either a positive or negative relationship between them, according to previous researchers (Behl et al., 2022; Gandhi et al., 2018, pp. 266–271; Wardhana et al., 2020), and further identifying the optimal state of remote work. Second, knowledge sharing–knowledge hiding interaction was found to exert a strong positive/negative influence on IWB, and the interaction term of knowledge sharing and knowledge hiding had a significant relationship with IWB. Furthermore, the interaction term of knowledge sharing and knowledge hiding moderates the relationship between career sustainability and IWB; more specifically, when gig workers' career sustainability is at an intermediate stage, a high level of knowledge sharing and low level of knowledge hiding will impact IWB positively. In contrast, when career sustainability is at a low level, compared with high knowledge hiding, low knowledge hiding will better eliminate the negative effect of low career sustainability on IWB. Finally, when gig workers' career sustainability is at a high level, the organizational knowledge exchange atmosphere's intervention effect on their IWB is diminished.

As for the control variables, our findings indicated a negative association between employees' gender and their IWB, as well as a positive association between employees' age (older) and their IWB. The latter may be due to the older gig workers' accumulation of more work experience, which enables them to be innovative more easily. The former may indicate that females have more nonwork commitments, such as family constraints, so they cannot put more time and effort into innovation (Churchill & Craig, 2019).

Overall, our research enriches the understanding of digitally based gig work by linking it to the interaction between two knowledge exchange behaviors and career sustainability through a paradoxical lens. We examine the main theoretical contributions and managerial implications below.

4.1. Theoretical contributions

This study offers some interesting insights in terms of theoretical implications. First, we identified the unorthodox, digitally based gig workers who prevail in a new normal (Gandhi et al., 2018, pp. 266–271; Kuhn & Galloway, 2019; Watson et al., 2021), as well as examining the impact of their knowledge sharing and knowledge hiding on the IWB. Digitally mediated work provides gig workers with more autonomy in knowledge sharing, thanks to ICT facilitation, but can also generate a distorting effect linked to online platforms' ability to hide knowledge more easily due to the lack of physical control within organizations. Therefore, knowledge sharing and knowledge hiding become complementary aspects of the exchange of knowledge, in which the highest level of knowledge hiding indicates distrust among gig workers, who tend to protect their knowledge (Connelly et al., 2012; Duan et al., 2022; Singh, 2019; Wang & NOE, 2010). Our findings reveal that during knowledge exchange, knowledge sharing and knowledge hiding are related synchronously and paradoxically impact IWB, which is conditional on career sustainability (Bal et al., 2020; Chin et al., 2022). Thus, the findings make it possible to understand gig workers' paradoxical knowledge sharing and knowledge hiding concerning their innovation behavior during the turbulent post-pandemic period.

Moreover, based on the yin–yang harmonizing cognition frame, our

results highlight the emergence and existence of a variety of micro-level paradoxes in terms of undertaking innovation in a new normal (Chin et al., 2023; Redding, 2017; Miron-Spektor et al., 2018; Smith & Lewis, 2011). More specifically, the U-shaped relationship between career sustainability and IWB among gig workers reflects how gig work, with the aid of ICT, not only increases work availability, but also intensifies work intensification because of underlying social control mechanisms on being an ideal worker by putting more and more effort into work. Our research partly answers calls to promote the construction of paradox theory beyond Western ideology (Schad et al., 2016).

Moreover, the effect of the U-shaped non-linear career sustainability trend among gig workers on IWB reflects the characteristics of new dynamic post-COVID forms of work that have a high degree of contractual instability, countered by greater flexibility in the reconciliation of the work–life balance. This study contributes to the literature that has found informal and remote work increases gig workers' motivation and improves their degree of performance innovation. Furthermore, although career progression is more difficult in the absence of business organization, gig workers interact with different digital platforms thanks to the employment relationship's adaptability.

In particular, our findings provide new insights into the relationship between career sustainability (in terms of personal well-being and satisfaction) and innovative behavior in the workplace, revealing how gig workers are more willing to take risks and have partnerships with multiple platforms, resulting in an increase in IWB performance. In fact, our research answers the invitation to investigate the dynamic interplay existing between career sustainability and innovation in the digital era (Chin et al., 2019) and enriches the interdisciplinary literature at the nexus of organizational behavior, knowledge management, and innovation domains. Taking this idea a step further, our results also provide new insights into how career sustainability and the implications of using digital platforms can impact knowledge management positively inside and outside the organization by examining knowledge sharing and knowledge hiding interconnections and their interactive effects on IWB.

4.2. Managerial implications

The results from our analysis also carry important practical implications, supporting managers and workers' commitments to face new challenges related to the gig economy. The pandemic has forced many companies to re-engineer their work processes, strengthening their ICT systems to support new unstructured ways of working. The spread of the on-call work model has changed traditional forms of socioeconomic interaction and, simultaneously, how people work.

This study confirms that managerial autonomy and a work organization's flexibility positively impact workers' innovative performance, as they broaden their skills using multiple digital platforms. Moreover, due to physical restrictions during the pandemic, the gig economy experienced an enormous global proliferation in strategic sectors worldwide, changing life and work habits. Gig work is associated with the following business benefits: a wide selection of diversified professional profiles through the mechanism of enhanced skills via digital platforms; work's organizational flexibility; and a management orientation to projects and results. Therefore, job flexibility and ICT still can promote knowledge exchange through knowledge sharing–knowledge hiding interaction in proportion to the degree of career sustainability. In accordance with the paradoxical relationship between knowledge sharing and knowledge hiding (Bal et al., 2020; Chin et al., 2022), this study suggests that gig work characteristics—such as simple market accessibility, work–life balance, and flexibility of work forms and working hours—feed the degree of career sustainability, thereby improving workers' IWBs when knowledge sharing is at its highest level.

However, this study also revealed that the uncertainty perceived by gig workers may increase their knowledge hiding due to the lack of a

corporate structure capable of controlling knowledge exchange. Furthermore, gig work largely is not regulated yet, so workers feel a low level of protection in terms of job security and tax status, which could affect knowledge sharing negatively, increasing knowledge hiding levels. Therefore, the present study supports adoption of organizational sharing strategies that can spread a work culture based on results. Furthermore, organizations can create new forms of cooperation and dynamic exchange thanks to the elimination of entry barriers for gig workers, ICT utilization to improve dynamic performance, and cost reduction related to fixed personnel. The categorization of work based on results could prove to be a crucial growth point for organizations in the post-pandemic era, helping managers assign specific tasks to gig workers.

Finally, the study offers an opportunity to better regulate gig work to determine workers' status accurately, as well as to control the use of algorithms and artificial intelligence to monitor and evaluate workers via digital platforms. In fact, the use of algorithmic systems makes it possible to improve the organization and management of work performance, thus benefitting companies' decision-making systems and increasing transparency and trust among operators. In this way, gig workers will see the prospect of career sustainability to expand, limiting hidden behavior that lowers productivity for fear of losing their job security.

5. Conclusions and future research

This study examined the paradoxical impact of knowledge sharing and knowledge hiding on IWB by contributing to the understanding of paradoxical behavior toward innovation post-pandemic. The results indicated that the knowledge sharing–knowledge hiding interaction relates significantly to IWB and that the interaction term moderates the U-shaped relationship between career sustainability and IWB. Our study offers valuable theoretical and practical implications, indicating that job flexibility and ICTs can facilitate knowledge exchange among employees through knowledge sharing–knowledge hiding interaction in proportion to employees' perceptions of their career sustainability.

Despite the originality of the contributions offered to the innovation studies and management literature, the present study has some limitations that open the way for new avenues of research. First, the companies used for the sample, which had adopted hybrid jobs and remote job projects, are mainly located in eastern coastal China. Another limit is represented by the choice of the cross-border e-commerce industry sector for examination. Our sample firms' primary markets comprised US and European customers, leading to cross-cultural characteristics. However, the investigation could be extended to other countries to verify the results and conduct comparative context analyses. Due to limitations on questionnaire distribution during the epidemic, some firm-level and individual-level variables were not collected, which limited the choice of control variables. Moreover, further research could investigate AI's impact on management of digital platforms to monitor workers' behavior, measure performance, and ensure information flows' transparency between operators. Finally, this study conducted an analysis from a microfoundational perspective, offering interesting future insights into relational and sociological fields.

Funding

This paper is supported by the National Natural Science Foundation of China (No. 72272136); Organizational Capability and Leadership Improvement Project of the Changchun New Oriental Education Training School (SKY-HX-20201933); Organization Leadership Improvement Project of the Chinese Institute of Business Administration (SKY-HX-20210188).

CRediT authorship contribution statement

Tachia Chin: Writing – review & editing, Writing – original draft, Validation, Supervision, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Yi Shi:** Writing – review & editing, Writing – original draft, Visualization, Validation, Software, Methodology, Investigation, Formal analysis, Data curation. **Elisa Arrigo:** Writing – review & editing, Writing – original draft, Supervision, Methodology, Investigation, Formal analysis, Conceptualization. **Rosa Palladino:** Writing – review & editing, Writing – original draft, Visualization, Methodology, Investigation, Formal analysis.

Declaration of competing interest

No potential conflict of interest was reported by the authors.

References

- Adisa, T. A., Gbadamosi, G., & Osabutey, E. L. C. (2017). What happened to the border? The role of mobile information technology devices on employees' work-life balance. *Personnel Review*, 46(8), 1651–1671. <https://doi.org/10.1108/PR-08-2016-0222>
- Adomako, S. (2021). Resource-induced coping heuristics and entrepreneurial orientation in dynamic environments. *Journal of Business Research*, 122, 477–487. <https://doi.org/10.1016/j.jbusres.2020.09.026>
- Al Hawamdeh, N. (2023). Does humble leadership mitigate employees' knowledge-hiding behaviour? The mediating role of employees' self-efficacy and trust in their leader. *Journal of Knowledge Management*, 27(6), 1702–1719. <https://doi.org/10.1108/JKM-05-2022-0353>
- Anand, A., Offergelt, F., & Anand, P. (2021). Knowledge hiding – a systematic review and research agenda. *Journal of Knowledge Management*, 26(6), 1438–1457. <https://doi.org/10.1108/JKM-04-2021-0336>
- Arain, G. A., Hameed, I., Khan, A. K., Strolago, A. D., & Dhir, A. (2022). How and when do employees hide knowledge from co-workers? *Journal of Knowledge Management*, 26(7), 1789–1806. <https://doi.org/10.1108/JKM-03-2021-0185>
- Arias-Pérez, J., & Vélez-Jaramillo, J. (2022). Understanding knowledge hiding under technological turbulence caused by artificial intelligence and robotics. *Journal of Knowledge Management*, 26(6), 1476–1491. <https://doi.org/10.1108/JKM-01-2021-0058>
- Arrigo, E., Matthyssens, P., & Struyf, B. (2022). Fine-tuning the paradox lens for servitization research. In *9th international conference on business servitization book of abstracts* (pp. 88–96). OmniaScience (Omnia Publisher SL).
- Azeem, M. M., & Kotey, B. (2023). Innovation in SMEs: The role of flexible work arrangements and market competition. *International Journal of Human Resource Management*, 34(1), 92–127. <https://doi.org/10.1080/09585192.2021.1961162>
- Bal, P. M., Matthews, L., Dóci, E., & McCarthy, L. P. (2020). An ideological analysis of sustainable careers: Identifying the role of fantasy and a way forward. *Career Development International*, 26(1), 83–101. <https://doi.org/10.1108/CDI-05-2020-0114>
- Bari, M. W., Ghaffar, M., & Ahmad, B. (2020). Knowledge-hiding behaviors and employees' silence: Mediating role of psychological contract breach. *Journal of Knowledge Management*, 24(9), 2171–2194. <https://doi.org/10.1108/JKM-02-2020-0149>
- Behl, A., Jayawardena, N., Ishizaka, A., Gupta, M., & Shankar, A. (2022). Gamification and gigification: A multidimensional theoretical approach. *Journal of Business Research*, 139, 1378–1393. <https://doi.org/10.1016/j.jbusres.2021.09.023>
- Bell, S. T., Brown, S. G., & Weiss, J. A. (2017). A conceptual framework for leveraging team composition decisions to build human capital. *Human Resource Management Review*, 28(4), 450–463. <https://doi.org/10.1016/j.hrmr.2017.06.003>
- Bhatti, S. H., Hussain, M., Santoro, G., & Culasso, F. (2023). The impact of organizational ostracism on knowledge hiding: Analyzing the sequential mediating role of efficacy needs and psychological distress. *Journal of Knowledge Management*, 27(2), 485–505. <https://doi.org/10.1108/JKM-03-2021-0223>
- Cabrera, A., & Cabrera, E. F. (2002). Knowledge-sharing dilemmas. *Organization Studies*, 23(5), 687–710. <https://doi.org/10.1177/0170840602235001>
- Capolupo, P., Messeni Petruzzelli, A., & Ardito, L. (2023). A knowledge-based perspective on transgenerational entrepreneurship: Unveiling knowledge dynamics across generations in family firms. *Journal of Knowledge Management*. <https://doi.org/10.1108/JKM-05-2023-0451>. ahead-of-print No. ahead-of-print.
- Caputo, F., Magni, D., Papa, A., & Corsi, C. (2021). Knowledge hiding in socioeconomic settings: Matching organizational and environmental antecedents. *Journal of Business Research*, 135, 19–27. <https://doi.org/10.1016/j.jbusres.2021.06.012>
- Chen, Y., Chen, Q., Xu, Y., Arrigo, E., & Nespoli, P. (2024). Towards an urban ecosystem model through a cross-cultural Chinese and Greek knowledge analysis. *Journal of Knowledge Management*, 28(4), 1042–1053. <https://doi.org/10.1108/JKM-04-2023-0337>
- Chen, X., Wei, S., & Rice, R. E. (2020). Integrating the bright and dark sides of communication visibility for knowledge management and creativity: The moderating role of regulatory focus—ScienceDirect. *Computers in Human Behavior*, 111, Article 106421. <https://doi.org/10.1016/j.chb.2020.106421>
- Chen, C. H. V., Yeh, P. W., & Madsen, J. (2019). Contingent worker and innovation performance in electronics manufacturing service industry. *Chinese Management Studies*, 13, 1003–1018. <https://doi.org/10.1108/CMS-09-2018-0676>
- Chhabra, B., & Pandey, P. (2023). Job insecurity as a barrier to thriving during COVID-19 pandemic: A moderated mediation model of knowledge hiding and benevolent leadership. *Journal of Knowledge Management*, 27(3), 632–654. <https://doi.org/10.1108/JKM-05-2021-0403>
- Chin, T. (2015). Harmony and organizational citizenship behavior in Chinese organizations. *International Journal of Human Resource Management*, 26, 1110–1129. <https://doi.org/10.1080/09585192.2014.934882>
- Chin, T., Jawahar, I. M., & Li, G. (2022). Development and validation of a career sustainability scale. *Journal of Career Development*, 49(4), 769–787. <https://doi.org/10.1177/0894845321993234>
- Chin, T., Jiao, H., & Jawahar, I. M. (2019). Sustainable career and innovation during manufacturing transformation. *Career Development International*, 24(5), 397–403. <https://doi.org/10.1108/CDI-09-2019-331>
- Chin, T., Rowley, C., Redding, G., & Wang, S. (2018). Chinese strategic thinking on competitive conflict: Insights from yin-yang harmony cognition. *International Journal of Conflict Management*, 29(5), 683–704. <https://doi.org/10.1108/IJCM-09-2017-0101>
- Chin, T., Shi, Y., Del Giudice, M., Meng, J., & Xing, Z. (2023). Working from anywhere: Yin-yang cognition paradoxes of knowledge sharing and hiding for developing careers in China. *Humanities and Social Sciences Communications*, 10, 239. <https://doi.org/10.1057/s41599-023-01744-5>
- Chin, T., Shi, Y., Rowley, C., & Meng, J. (2021). Confucian business model canvas in the Asia pacific: A yin-yang harmony cognition to value creation and innovation. *Asia Pacific Business Review*, 27(30), 1–17. <https://doi.org/10.1080/13602381.2020.1795481>
- Chin, T., Wang, S., & Rowley, C. (2021). Polychronic knowledge creation in cross-border business models: A sea-like heuristic metaphor. *Journal of Knowledge Management*, 25(1), 1–22.
- Churchill, B., & Craig, L. (2019). Gender in the gig economy: Men and women using digital platforms to secure work in Australia. *Journal of Sociology*, 55(4), 741–761. <https://doi.org/10.1177/1440783319894060>
- Connelly, C. E., Zweig, D., Webster, J., & Trougakos, J. P. (2012). Knowledge hiding in organizations. *Journal of Organizational Behavior*, 33(1), 64–88. <https://doi.org/10.1002/job.737>
- Coun, M. J., Peters, P., & Blomme, R. J. (2019). 'Let's share!' The mediating role of employees' self-determination in the relationship between transformational and shared leadership and perceived knowledge sharing among peers. *European Management Journal*, 37(4), 481–491. <https://doi.org/10.1016/j.emj.2018.12.001>
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches*. London: Sage.
- Daneshfar, Z., Asokan-Ajitha, A., Sharma, P., & Malik, A. (2023). Work-from-home (WFH) during COVID-19 pandemic – a netnographic investigation using Twitter data. *Information Technology & People*, 36(5), 2161–2186. <https://doi.org/10.1108/ITP-01-2021-0020>
- Del-Corte-Lora, V., Molina-Morales, F. X., & Vallet-Bellmunt, T. M. (2016). Mediating effect of creativity between breadth of knowledge and innovation. *Technology Analysis & Strategic Management*, 28(7), 768–782. <https://doi.org/10.1080/09537325.2016.1142075>
- Devi, N. C. (2024). Paradoxical leadership and employee creativity: Knowledge sharing and hiding as mediators. *Journal of Knowledge Management*, 28(2), 312–340. <https://doi.org/10.1108/JKM-10-2022-0779>
- Duan, Y., Yang, M., Huang, L., Chin, T., Fiano, F., & De Nuccio, E. (2022). Unveiling the impacts of explicit vs. tacit knowledge hiding on innovation quality: The moderating role of knowledge flow within a firm. *Journal of Business Research*, 139, 1489–1500. <https://doi.org/10.1016/j.jbusres.2021.10.068>
- Duggan, J., Carbery, R., McDonnell, A., & Sherman, U. (2023). Algorithmic HRM control in the gig economy: The app-worker perspective. *Human Resource Management*, 62(6), 883–899. <https://doi.org/10.1002/hrm.22168>
- Fairhurst, G., Smith, W. K., Banghart, S., Lewis, M., Putnam, L. L., Raisch, S., et al. (2016). Diverging and converging: Integrative insights on a paradox meta-perspective. *The Academy of Management Annals*, 10(1), 173–182. <https://doi.org/10.5465/19416520.2016.1162423>
- Fait, M., Cillo, V., Papa, A., Meissner, D., & Scorrano, P. (2023). The roots of 'volunteer' employees' engagement: The silent role of intellectual capital in knowledge-sharing intentions. *Journal of Intellectual Capital*, 24(2), 399–429. <https://doi.org/10.1108/JIC-04-2020-0133>
- Gagné, M., Tian, A. W., Soo, C., Zhang, B., Ho, K. S. B., & Hosszu, K. (2019). Different motivations for knowledge sharing and hiding: The role of motivating work design. *Journal of Organizational Behavior*, 40(7), 783–799. <https://doi.org/10.1002/job.2364>
- Gandhi, A., Hidayanto, A. N., Suchahyo, Y. G., & Ruldeviyani, Y. (2018). Exploring people's intention to become platform-based gig workers: An empirical qualitative study. *2018 international conference on information technology systems and innovation (ICITSI)*. <https://doi.org/10.1109/ICITSI.2018.8696017>
- Garcia, P. S., Oliveira, M., & Brohman, K. (2022). Knowledge sharing, hiding and hoarding: How are they related? *Knowledge Management Research and Practice*, 20(3), 339–351. <https://doi.org/10.1080/14778238.2020.1774434>
- Goodman, A. L. (2011). Comment: On respondent-driven sampling and snowball sampling in hard-to-reach populations and snowball sampling not in hard-to-reach populations. *Sociological Methodology*, 41(1), 347–353. <https://doi.org/10.1111/j.1467-9531.2011.01242.x>

- Hadjielias, E., Christofi, M., & Tarba, S. (2021). Knowledge hiding and knowledge sharing in small family farms: A stewardship view. *Journal of Business Research*, 137, 279–292. <https://doi.org/10.1016/j.jbusres.2021.08.042>
- Hoff, B. V. D., & Ridder, J. D. (2004). Knowledge sharing in context: the influence of organizational commitment, communication climate and CMC use on knowledge sharing. *Journal of Knowledge Management*, 8(6), 117–130.
- Hu, M. L. M., Horng, J. S., & Sun, Y. H. C. (2009). Hospitality teams: Knowledge sharing and service innovation performance. *Tourism Management*, 30(1), 41–50. <https://doi.org/10.1016/j.tourman.2008.04.009>
- Issac, A. C., Bednall, T. C., Baral, R., Magliocca, P., & Dhir, A. (2023). The effects of expert power and referent power on knowledge sharing and knowledge hiding. *Journal of Knowledge Management*, 27(2), 383–403. <https://doi.org/10.1108/JKM-10-2021-0750>
- Jaccard, J., Wan, C. K., & Turrissi, R. (1990). The detection and interpretation of interaction effects between continuous variables in multiple regression. *Multivariate Behavioral Research*, 25(4), 467–478. https://doi.org/10.1207/s15327906mbr2504_4
- Jin, Y., Lu, N., Deng, Y., Lin, W., Zhan, X., Feng, B., et al. (2024). Becoming reluctant to share? Roles of career age and career plateau in the relationship between ethical leadership and knowledge sharing. *Current Psychology*, 43(2), 1483–1495. <https://doi.org/10.1007/s12144-023-04357-y>
- Khan, J., Saeed, I., Zada, M., Nisar, H. G., Ali, A., & Zada, S. (2023). The positive side of overqualification: Examining perceived overqualification linkage with knowledge sharing and career planning. *Journal of Knowledge Management*, 27(4), 993–1015. <https://doi.org/10.1108/JKM-02-2022-0111>
- Kuhn, K. M., & Galloway, T. L. (2019). Expanding perspectives on gig work and gig workers. *Journal of Managerial Psychology*, 34(4), 186–191. <https://doi.org/10.1108/JMP-05-2019-507>
- Lai, K. (2008). *An introduction to Chinese philosophy*. Cambridge: Cambridge University Press.
- Long, J., Liu, H., & Shen, Z. (2023). Narcissistic rivalry and admiration and knowledge hiding: Mediating roles of emotional exhaustion and interpersonal trust. *Journal of Knowledge Management*, 28(1), 1–26. <https://doi.org/10.1108/JKM-11-2022-0860>
- Magni, D., Papa, A., Scuotto, V., & Del Giudice, M. (2023). Internationalized knowledge-intensive business service (KIBS) for servitization: A microfoundation perspective. *International Marketing Review*, 40(4), 798–826. <https://doi.org/10.1108/IMR-12-2021-0366>
- Majchrzak, A., & Malhotra, A. (2016). Effect of knowledge-sharing trajectories on innovative outcomes in temporary online crowds. *Information Systems Research*, 27(4), 685–703. <https://doi.org/10.1287/isre.2016.0669>
- Magbool, S., Cerne, M., & Bortoluzzi, G. (2019). Micro-foundations of innovation: Employee silence, perceived time pressure, flow and innovative work behaviour. *European Journal of Innovation Management*, 22(1), 125–145. <https://doi.org/10.1108/EJIM-01-2018-0013>
- Masood, A., Zhang, Q., Ali, M., Cappiello, G., & Dhir, A. (2023). Linking enterprise social media use, trust and knowledge sharing: Paradoxical roles of communication transparency and personal blogging. *Journal of Knowledge Management*, 27(4), 1056–1085. <https://doi.org/10.1108/JKM-11-2021-0880>
- Mele, G., Capaldo, G., Secundo, G., & Corvello, V. (2024). Revisiting the idea of knowledge-based dynamic capabilities for digital transformation. *Journal of Knowledge Management*, 28(2), 532–563. <https://doi.org/10.1108/JKM-02-2023-0121>
- Miron-Spektor, E., Ingram, A., Keller, J., Smith, W. K., & Lewis, M. W. (2018). Microfoundations of organizational paradox: The problem is how we think about the problem. *Academy of Management Journal*, 61(1), 26–45. <https://doi.org/10.5465/amj.2016.0594>
- Mueller, J. (2014). A specific knowledge culture: Cultural antecedents for knowledge sharing between project teams. *European Management Journal*, 32(2), 190–202. <https://doi.org/10.1016/j.emj.2013.05.006>
- Nguyen, M., Pontes, N., Malik, A., Gupta, J., & Gugnani, R. (2024). Impact of high involvement work systems in shaping power, knowledge sharing, rewards and knowledge perception of employees. *Journal of Knowledge Management*. <https://doi.org/10.1108/JKM-04-2023-0345>. ahead-of-print No. ahead-of-print.
- Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization Science*, 5(1), 14–37. <https://doi.org/10.1287/orsc.5.1.14>
- Papa, A., Dezi, L., Gregori, G. L., Mueller, J., & Miglietta, N. (2020). Improving innovation performance through knowledge acquisition: The moderating role of employee retention and human resource management practices. *Journal of Knowledge Management*, 24(3), 589–605. <https://doi.org/10.1108/JKM-09-2017-0391>
- Pereira, V., Bamel, U., Temouri, Y., Budhwar, P., & Del Giudice, M. (2023). Mapping the evolution, current state of affairs and future research direction of managing cross-border knowledge for innovation. *International Business Review*, 32(2), Article 101834. <https://doi.org/10.1016/j.ibusrev.2021.101834>
- Pérez-Luño, A., Alegre, J., & Valle-Cabrera, R. (2019). The role of tacit knowledge in connecting knowledge exchange and combination with innovation. *Technology Analysis & Strategic Management*, 31(2), 186–198. <https://doi.org/10.1080/09537325.2018.1492712>
- Perotti, F. A., Rozsa, Z., Kuděj, M., & Ferraris, A. (2024). Building a knowledge sharing climate amid shadows of sabotage: A microfoundational perspective into job satisfaction and knowledge sabotage. *Journal of Knowledge Management*, 28(5), 1490–1516. <https://doi.org/10.1108/JKM-03-2023-0262>
- Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology*, 63, 539–569. <https://doi.org/10.1146/annurev-psych-120710-100452>
- Rahimnia, F., Eslami, G., & Nosrati, S. (2019). Investigating the mediating role of job embeddedness: Evidence of Iranian context. *Personnel Review*, 48(3), 614–630. <https://doi.org/10.1108/PR-11-2017-0348>
- Redding, G. (2017). Components and process in social science explanation: Is there a role for yin-yang balancing. *Cross Cultural & Strategic Management*, 24(1), 152–166. <https://doi.org/10.1108/CCSM-11-2016-0195>
- Rodeghero, P., Zimmermann, T., Houck, B., & Ford, D. (2021). Please turn your cameras on: Remote onboarding of software developers during a pandemic. May. In *2021 IEEE/ACM 43rd international Conference on software engineering: Software Engineering in practice (ICSE-SEIP)* (pp. 41–50). IEEE. <https://doi.org/10.1109/ICSE-SEIP52600.2021.00013>
- Schad, J., Lewis, M. W., Raisch, S., & Smith, W. K. (2016). Paradox research in management science: Looking back to move forward. *The Academy of Management Annals*, 10(1), 5–64. <https://doi.org/10.5465/19416520.2016.1162422>
- Serenko, A. (2024). The human capital management perspective on quiet quitting: Recommendations for employees, managers, and national policymakers. *Journal of Knowledge Management*, 28(1), 27–43. <https://doi.org/10.1108/JKM-10-2022-0792>
- Shin, Y., Hur, W. M., & Choi, W. H. (2018). Coworker support as a double-edged sword: A moderated mediation model of job crafting, work engagement, and job performance. *International Journal of Human Resource Management*, 31(11), 1–22. <https://doi.org/10.1080/09585192.2017.1407352>
- Singh, S. K. (2019). Territoriality, task performance, and workplace deviance: Empirical evidence on role of knowledge hiding. *Journal of Business Research*, 97, 10–19. <https://doi.org/10.1016/j.jbusres.2018.12.034>
- Singh, A. (2022). Work engagement, affective commitment, and career satisfaction: The mediating role of knowledge sharing in context of SIEs. *Benchmarking: An International Journal*, 29(10), 3302–3332. <https://doi.org/10.1108/BIJ-01-2021-0016>
- Smith, W. K., & Lewis, M. W. (2011). Toward a theory of paradox: A dynamic equilibrium model of organizing. *Academy of Management Review*, 36(2), 381–403. <https://doi.org/10.5465/amr.2009.0223>
- Tian, A. Y., Ahammad, M. F., Tarba, S. Y., Pereira, V., Arslan, A., & Khan, Z. (2021). Investigating employee and organizational performance in a cross-border acquisition—a case of withdrawal behavior. *Human Resource Management*, 60(5), 753–769. <https://doi.org/10.1002/hrm.22058>
- Vaast, E. (2023). Strangers in the dark: Navigating opacity and transparency in open online career-related knowledge sharing. *Organization Studies*, 44(1), 29–52. <https://doi.org/10.1177/01708406211058647>
- Van Den Hooff, B., & De Ridder, J. A. (2004). Knowledge sharing in context: The influence of organizational commitment, communication climate and CMC use on knowledge sharing. *Journal of Knowledge Management*, 8(6), 117–130. <https://doi.org/10.1108/13673270410567675>
- Wang, C. L., & Rafiq, M. (2014). Ambidextrous organizational culture, contextual ambidexterity and new product innovation: a comparative study of UK and Chinese high-tech firms. *British Journal of Management*, 25(1), 58–76.
- Wang, S., & Chin, T. (2020). A stratified system of knowledge and knowledge icebergs in cross-cultural business models: Synthesising ontological and epistemological views. *Journal of International Management*, 26(4), Article 100780. <https://doi.org/10.1016/j.intman.2020.100780>
- Wang, C., Chin, T., & Lin, J. H. (2020). Openness and firm innovation performance: The moderating effect of ambidextrous knowledge search strategy. *Journal of Knowledge Management*, 24(2), 301–323. <https://doi.org/10.1108/JKM-04-2019-0198>
- Wang, S., & Noe, R. A. (2010). Knowledge sharing: A review and directions for future research. *Human Resource Management Review*, 20(2), 115–131. <https://doi.org/10.1016/j.hrmr.2009.10.001>
- Wang, Z., Wang, N., Cao, J., & Ye, X. (2016). The impact of intellectual capital – knowledge management strategy fit on firm performance. *Management Decision*, 54(8), 1861–1885.
- Wang, W. T., Wang, Y. S., & Chang, W. T. (2019). Investigating the effects of psychological empowerment and interpersonal conflicts on employees' knowledge sharing intentions. *Journal of Knowledge Management*, 23(6), 1039–1076. <https://doi.org/10.1108/JKM-07-2018-0423>
- Wardhana, V. H. K., Herlina, M. G., Bangsawan, S., & Tuori, M. A. T. (2020). Regulatory developments in the gig economy: A literature review. *Winner*, 21(2), 141–153. <https://doi.org/10.21512/tw.v2i12.6758>
- Watson, G. P., Kistler, L. D., Graham, B. A., & Sinclair, R. R. (2021). Looking at the gig picture: Defining gig work and explaining profile differences in gig workers' job demands and resources. *Group & Organization Management*, 46(2), 327–361. <https://doi.org/10.1177/1059601121996548>
- Wood, S., Daniels, K., & Ogbonnaya, C. (2018). Use of work–nonwork supports and employee well-being: The mediating roles of job demands, job control, supportive management and work–nonwork conflict. *International Journal of Human Resource Management*, 31(14), 1793–1824. <https://doi.org/10.1080/09585192.2017.1423102>
- Wood, A. J., Graham, M., Lehdonvirta, V., & Hjorth, I. (2019). Good gig, bad gig: Autonomy and algorithmic control in the global gig economy. *Work, Employment & Society*, 33(1), 56–75. <https://doi.org/10.1177/0950017018785616>
- Wu, Z., Zhou, X., Wang, Q., & Liu, J. (2023). How perceived overqualification influences knowledge hiding from the relational perspective: The moderating role of perceived overqualification differentiation. *Journal of Knowledge Management*, 27(6), 1720–1739. <https://doi.org/10.1108/JKM-04-2022-0286>
- Yao, Z., Zhang, X., Luo, J., & Huang, H. (2020). Offense is the best defense: The impact of workplace bullying on knowledge hiding. *Journal of Knowledge Management*, 24(3), 675–695. <https://doi.org/10.1108/JKM-12-2019-0755>
- Yao, G., Zhao, H., Hu, Y. M., & Zheng, X. J. (2023). Exploring knowledge sharing and hiding on employees' creative behaviors: A competition perspective. *Journal of*

Innovation & Knowledge, 8(4), Article 100447. <https://doi.org/10.1016/j.jik.2023.100447>

- Zahra, S. A., Neubaum, D. O., & Hayton, J. (2020). What do we know about knowledge integration: Fusing micro- and macro-organizational perspectives. *The Academy of Management Annals*, 14(1), 160–194. <https://doi.org/10.5465/annals.2017.0093>
- Zhang, S. X., Liu, J., Jahanshahi, A. A., Nawaser, K., Yousefi, A., Li, J., & Sun, S. (2020). At the height of the storm: Healthcare staff's health conditions and job satisfaction and their associated predictors during the epidemic peak of COVID-19. *Brain, Behavior, and Immunity*, 87, 144–146.
- Zhang, W., Zhang, W., & Daim, T. U. (2023). The voluntary green behavior in green technology innovation: The dual effects of green human resource management system and leader green traits. *Journal of Business Research*, 165, Article 114049. <https://doi.org/10.1016/j.jbusres.2023.114049>

Tachia Chin, PhD, is a Professor in School of Management, Zhejiang University of Technology. She has published more than 100 articles in top English and Chinese journals such as *Journal of International Management*, *International of Human Resource Management*, *International Journal of Production Economics*, *Journal of Business Research*, *Career Development International* and *Journal of Knowledge Management*. She serves as the Real Impact Editor Asia for *Journal of Knowledge Management* and as a leading guest editor for several journals such as *Asia Pacific Business Review*, *Career Development International*, and *Chinese Management Studies*.

Yi Shi, is currently a Ph.D. student in School of Management, Zhejiang University of Technology. She has published papers in some English and Chinese journals, such as *Technological Forecasting & Social Change*, *Corporate Social Responsibility and Environmental Management*, *Humanities and Social Sciences Communications*, *Journal of Knowledge Management*. Her research fields include Knowledge Management and Cross-culture Management.

Elisa Arrigo*, Ph.D., is Associate Professor at University of Milano-Bicocca, Department of Economics, Management and Statistics (DEMS), Milan (Italy). She holds a Ph.D. in Marketing and Business Management, and during her Ph.D. studies she was a visiting scholar at the Stockholm School of Business (Sweden) and London Business School (UK). Her research fields include global marketing, digital transformation, and sustainability issues. These topics have been mainly investigated in the fashion and luxury sectors. Her research has been featured in peer-to-peer international journals such as *International Marketing Review*, *Journal of Cleaner Production*, *Business Process Management Journal*, *Journal of Retailing and Consumer Services*, *Journal of Retail and Distribution Management*, *Journal of Fashion Marketing and Management*, *Management Research Review*, and *Review of Managerial Science*. She also authored two books. (*Corresponding Author)

Rosa Palladino, Ph.D., is Associate Professor at IUL Digital University, Florence (Italy). She has been Assistant Professor at Link Campus University and research fellow at the Department of Economics, Management and Statistics of the University of Milano-Bicocca. She obtained her Ph.D. in Law and socio-economic institutions: normative, organizational and historical-evolutionary profiles at Parthenope University. Her research fields include Knowledge management, Innovation and Technology Management, Corporate Governance, Non-financial Information, Sustainable Accounting and Reporting. She regularly attends seminars and conferences on these issues. Her research has been published in international books and journals (e.g., *Journal of Business Research*, *Technological Forecasting and Social Change*, *International Marketing Review*, *Journal of Intellectual Capital*, *Journal of Cleaner Production*, *Meditari Accountancy Research and Sustainability*). She is a reviewer for *Journal of Business Research* (Elsevier), *Journal of Knowledge Management* (Emerald), *Journal of Intellectual Capital* (Emerald), *Sustainability* and "Environment, Development, and Sustainability (ENVI)" edited by Springer. Recently, she attended to IAME Conference on the digitalization issues in the ports and shipping industry in Hong Kong (Asia) and to IEEE International Conference on "Technology Management, Operations and Decisions. Disruptive Technologies and Social Impacts" in Marrakech, Morocco (Africa). She also authored a book.