

Motivation, Knowledge Sharing, and Innovative Work Behaviors of University Teachers

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Abstract. This research investigates the determinants of innovative work behaviors (IWBs) among university teachers by applying the theories of knowledge management and self-determination. A total of 437 teachers from 26 public universities in Guangxi, China, participated in this survey. According to Structural equation model (SEM) analyses, both intrinsic and extrinsic motivations have a positive influence on IWBs. Knowledge sharing, meanwhile, mediated in part the effect of intrinsic motivation but completely the relationship between extrinsic motivation and IWBs. Additionally, individuals' gender and age moderated the motivation-knowledge sharing relationship, while organizational context did not play a moderating role. This research sheds light on these boundaries and mediating mechanisms by providing theoretical insights and practical recommendations for promoting educational innovation through enhancing faculty internal motivation, collaborative environments, and targeted assistance.

Keywords: Innovative work behaviors, Motivation, Knowledge sharing, University teachers.

1. Introduction

The 4th Sustainable Development Goal of the 2030 United Nations Agenda is quality education, and development cannot be achieved without innovation. Hence, some researchers argue that innovative work in higher education is also very important (Ferreras-Garcia, Sales-Zaguirre, & Serradell-López, 2021). Innovative work behaviors refer to the intentional generation, diffusion, and implementation of new ideas in the workplace (Scott & Bruce, 1994). Innovative work in higher education has attracted increasing scholarly attention in recent years, especially among developing countries (Al-Mansoori & Koc, 2019). Scholars are known to have contributed significantly to the conceptualization and development of new knowledge, ideas, models, practices, technologies, etc. Knowledge sharing refers to the activity of transferring knowledge from one individual, group, or organization to another in different forms (McAdam, Moffett, & Peng, 2012), and is an individual act of helping others or collaborating with others to solve problems and conceive new ideas by sharing information and knowledge (Cummings, 2004). Scholars tend to share knowledge with others, generate new ideas through interactions and communications, and transform ideas into implementable solutions (Mura, Lettieri, Radaelli, & Spiller, 2013). Innovation can only be boosted if knowledge sharing within an organization is stimulated (Akram, Lei, Haider, & Hussain, 2020). Motivation is a key factor in knowledge sharing and the force that shapes an individual's desire to share knowledge (Osterloh & Frey, 2000). Individual motivation plays an important role in effective knowledge sharing and individuals' participation in knowledge sharing activities (Mazzucchelli, Chierici, Abbate, & Fontana, 2019). In addition, motivation involves the entire psychological process and personality traits of an individual and is inevitably influenced and shaped by the cultural environment in which the individual lives. Some researchers argue that differences in age, gender, ethnicity, culture, and environment lead to different behavioral manifestations. As important knowledge workers, the study of innovative work behaviors of teachers in higher education is vital to improve the quality of education.

However, there is very little research on the driving factors of innovative work behaviors at teacher's level, especially in developing countries. Given the uniqueness of Chinese cultural traits and the fact that culture influences individual behaviors, Chinese people have significant characteristics in terms of behavioral principles, thinking styles, and demand features, and they may also reveal different intrinsic driving styles in terms of innovative work behaviors and knowledge-sharing behaviors from those of Westerners', so it is necessary to pay attention to the individual differences as well. The main purpose of this research is to address the following questions: (1) What is the impact of individual motivation on their innovative work behavior? Does knowledge sharing have an impact on an individual's innovative work behavior? (2) What is the role of knowledge sharing between individual motivation and innovative work behavior? (3) What is the role of individual characteristics in the relationship between individual motivation and knowledge sharing? (4) What is the role of organizational environment in the relationship between individual motivation and knowledge sharing? Thus, we can gain a deeper understanding of the motivation-behavior relationship, and understand the influence of motivation on innovative work behaviors at the individual level of teachers in public undergraduate higher education institutions in Guangxi, along with testing the facilitating role of knowledge sharing between individual motivation and innovative work behaviors, as well as the moderating role of personal characteristics and organizational context between motivation and knowledge sharing. This is undoubtedly of great theoretical value and practical significance in motivating teachers' innovative work behaviors in public undergraduate universities in Guangxi, promoting the sustainable development of higher education, and improving the standard of high-quality education.

2. Theoretical foundation and Hypotheses

2.1. Theory of self-determination

Self-determination theory elucidates the relevance of an individual's psychology in guiding and

motivating their behavior, reveals the relationship between an individual's behavior and motivation, identifies the three intrinsic psychological needs that sustain an individual's behavior: the need for competence, social relationships, and autonomy (Coun, Peters, & Blomme, 2019), and enables individuals to reproduce positive behaviors in situations or conditions that satisfy the above psychological needs, such as collecting or sharing knowledge. It should be noted that the theory addresses the type of motivation (i.e., intrinsic or extrinsic) and not the amount of motivation (high or low). This paper examines the internal and external motivation of individual teachers based on self-determination theory. Intrinsic motivation is divided into high or low and right or wrong. Intrinsic motivation in this study is used with the concept of noble altruism. Altruistic behaviors aim to benefit others without expecting anything in return as they derive intrinsic pleasure from helping others. Another aspect of intrinsic motivation is the perceived pleasure of sharing; therefore, it helps individuals to see sharing knowledge as a good deed to help others, which results in sharing behavior. Similarly, previous studies have identified extrinsic motivational influences on knowledge sharing including organizational rewards, expectations of reciprocity, reputation, and loss of knowledge power. Studies shows that the self-determination theory of modern educational motivation theory is more helpful for the study of individual motivation in educational settings, so this research will use self-determination theory as a guide to analyze the influence of individual motivation on knowledge-sharing behaviors among teachers at higher education institutions in Guangxi and classify individual motivation into internal motivation (self-efficacy, self-enjoyment) and external motivation (tangible rewards, reciprocity).

2.2. Theory of knowledge management

Knowledge management can be described as a collection of practices used by individuals and organizations to identify, create, store, share and apply knowledge (Bello & Oyekunle, 2014). Knowledge management aims at transferring organizations and sharing knowledge because knowledge can only be effective if it is effectively disseminated and utilized. Knowledge management and the promotion of knowledge sharing within organizations are essential for the learning of individuals within organizations as they will help to transform tacit knowledge embedded within individuals into explicit knowledge (von Krogh, Nonaka, & Rechsteiner, 2012). According to Zheng (2005), knowledge management could describe as acquisition, sharing, and application, and they asserted that innovation and effectiveness is achieved when knowledge sharing is taken into consideration. In short, knowledge sharing was identified as focal to knowledge management (Hendriks, 2005), and it is considered to be an indicator of organizational effectiveness. Knowledge sharing is a multi-participant process and is a key stage in achieving knowledge management (Tuomi, 1999). Indeed, knowledge sharing can provide the basis for more radical innovation to occur in organizations (Zhou & Li, 2012).

2.3. Motivation and Innovative Work Behavior

Innovative work behavior refers to the process of activities in the workplace that intentionally generates, promotes, and implements new ideas (Scott & Bruce, 1994); employees can contribute more to the success of an organization by developing, promoting, and implementing useful ideas to improve products, services and work processes. The theory of planned behavior suggests that motivation is one of the important factors that can influence people's behavior and when the stronger one's intention is, the more likely they are to act on their beliefs (Ajzen, 2011). Therefore, motivation is an intrinsic force that drives individuals to carry out innovations, and it can stimulate their innovative intentions and behaviors (Fontana, 1986). It is evident that there is a strong link between motivation and innovative work behavior. Innovative work behaviors often require individuals to have a strong desire to explore, curiosity and creative thinking, and these attributes are often driven by intrinsic motivation. At the same time, they can also be significantly influenced by external motivation, such as rewards and recognition that can motivate individuals to be innovative (Rhodes & de Bruijn, 2013). In addition, scholars have empirically revealed that individual motivation (intrinsic and extrinsic motivation) can promote employees' innovative work behavior (Sun & Chen, 2008). Research shows that employees' innovative

work behaviors are crucial for companies to gain competitive advantages and long-term success, and identifying key factors that can promote and maintain employees' sustained innovative work behaviors is important for enhancing organizational competitiveness (Gupta & Singh, 2015). Thus, motivation plays a key role in the emergence and development of innovative work behaviors. Based on the above analyses, the following hypotheses are proposed:

H1: The intrinsic motivation of university teachers has a positive effect on their innovative work behavior.

H2: The extrinsic motivation of university teachers has a positive effect on their innovative work behavior.

2.4. Motivation and knowledge sharing

Knowledge sharing is the activity of transferring knowledge from one body, group or organization to another in different forms (McAdam et al., 2012). As the name suggests, knowledge sharing among teachers is an important way to help teachers quickly understand, appreciate, and master knowledge, which means that it is essentially a process of transferring, exchanging, and sharing knowledge among teachers, both as individual teachers and as a community of teachers (Q. Wang, Shu, & Zhu). Whereas each teacher's motivation to share may be influenced by either intrinsic or extrinsic factors, the intrinsic factors are often related to the individual's interest or intention, and the extrinsic motivation is influenced by the work environment, support system, and personal organization (Mansor & Jaharuddin, 2020). Thus, motivation is an important force in shaping an individual's desire to share knowledge (Tang, Zhao, & Liu, 2016). Based on the above analyses, the following hypotheses are proposed:

H3: The intrinsic motivation of university teachers has a positive effect on knowledge sharing.

H4: The extrinsic motivation of university teachers has a positive effect on knowledge sharing.

2.5. Knowledge sharing and innovative work behavior

Knowledge sharing and transfer enable individuals to learn from the successes and methods of others, resulting in innovative work behaviors (Tsai, 2001). Because individual knowledge and capabilities are key factors influencing innovative behavior, sharing creates opportunities for learning, applying, and generating new knowledge, and knowledge sharing predicts high organizational performance, innovation ability, and investment conversion (Mohammed, Zhao, Yang, You, & Zalat, 2022). Correspondingly, related studies have also pointed out that knowledge sharing promotes innovative work behaviors among employees because the process of sharing knowledge is more likely to elaborate, integrate and transform information rather than simply pass it on to recipients, and in this process employees may look for opportunities to transform and apply ideas to organizational practices (Srivastava, Bartol, & Locke, 2006; Zhang, Zhang, & Wang, 2022). As we know, higher education institutions are considered knowledge-intensive organizations not only because they can be heavily involved in knowledge creation and development, but also in knowledge dissemination through teaching, learning and research (Fullwood & Rowley, 2017). Therefore, members of an university should know how to manage and utilize knowledge and share it to achieve maximum use of knowledge for innovative outcomes. It can be seen that knowledge sharing promotes mutual learning as well as the exchange of knowledge and experience among members within an organization, creating conditions for the birth of new ideas or creativity, and relevant empirical studies have verified the impact of employee knowledge sharing on innovative work behaviors (Kang & Lee, 2017). Therefore, knowledge sharing is vital for individual knowledge acquisition and innovation, and it tends to stimulate innovative behavior in individuals (Liang, Chang, Rothwell, & Shu, 2016).

H5: University teachers' knowledge sharing has positive influence on their innovative work behavior.

2.6. The mediating role of knowledge sharing

It has been found that psychological incentives provided by organizations can effectively stimulate individual motivation and increase employees' willingness to exchange knowledge, which in turn

facilitate knowledge sharing among employees for the purpose of integrating knowledge and then transforming it into actual behaviors (W.-T. Wang, 2016). Several studies have demonstrated the impact of knowledge sharing on employees' innovative work behaviors, especially its bridging role as a mediator. The types of motivations that influence individual knowledge sharing are different in different research contexts (W.-T. Wang & Hou, 2015). Individual employees' subjective perceptions, behaviors and motivations are key factors influencing knowledge sharing (Damij, Li, Wu, & Xiong, 2021). Therefore, for universities, understanding teachers' motivation is crucial for knowledge sharing. It is feasible for this study to explore knowledge sharing from the perspective of individual motivation so as to examine the impact on individual innovative work behaviors, so we hypothesize that individual teachers' motivation influences knowledge sharing, and that inter-individual knowledge sharing promotes innovative work behaviors among teachers.

H6: Knowledge sharing plays a mediating role between individual intrinsic motivation and innovative work behavior.

H7: Knowledge sharing plays a mediating role between individual extrinsic motivation and innovative work behavior.

2.7. Individual characteristics moderate motivation and knowledge sharing

It is critical to understand what factors moderate motivation to share knowledge among university teachers. Existing literature suggests that younger people are more inclined to share knowledge with others because they see it as a way to better express themselves and gain recognition from others, whereas older individuals are concerned about diminishing their competitive advantage. Hence, there are differences in the behaviors that generate knowledge sharing among individuals of different ages. Besides, gender difference is also one of the important elements of individual characteristics, men and women respond differently to external stimuli, for example, women have stronger community-oriented attributes, they are more empathetic and more enthusiastic (C.-P. Lin, 2008). Therefore, in this study, two main variables of individual characteristics, gender and age, are selected, along with the proposal of the following hypotheses:

H8: The individual characteristics of university teachers regulate the relationship between intrinsic motivation and knowledge sharing

H9: The individual characteristics of university teachers regulate the relationship between extrinsic motivation and knowledge sharing

2.8. Organizational context moderates motivation and knowledge sharing

Within a particular cultural setting, the organizational context may moderate the relationship between motivation and knowledge sharing. In organizational contexts, the settings are distinguished between open and closed systems. Jin, Park, and Kim (2010) asserted that innovation and effectiveness can be achieved when knowledge sharing is taken into account. Information and communication technologies have enhanced collaboration and knowledge sharing in the form of knowledge management (Seba, Rowley, & Delbridge, 2013); for instance, on social media platforms (online forums, blogs, etc.) nowadays, individuals are able to share their knowledge faster without the constraints of time and place (Charband & Navimipour, 2019). Therefore, this study argues that organizational context may moderate the relationship between motivation and knowledge sharing by proposing the following hypothesis:

H10: Organizational context regulates the relationship between intrinsic motivation and knowledge sharing

H11: Organizational context regulates the relationship between extrinsic motivation and knowledge sharing

Based on the above prior research outcomes, this study designed a hypothetical model for influences on the innovative work behavior of university teachers, as shown in Figure.

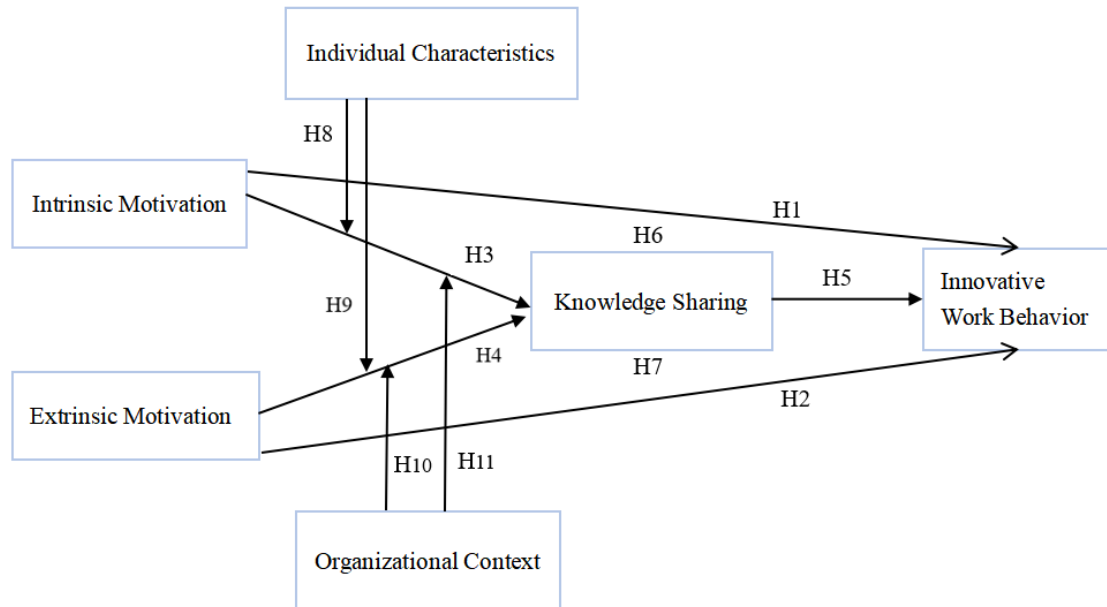


Fig. 1: Conceptual framework

3. Research Methodology

3.1. Data collection

This study used a questionnaire survey as the main tool to collect primary data. The sample population of the questionnaire survey encompassed teachers (specialized course teachers as teacher type) in 26 public undergraduate universities in Guangxi Province, China, and according to the official website of universities, the total number of specialized course teachers in public universities in the year 2022 is about 33,167. The sampling strategy adopted in this study was proportional stratified random sampling, which ensures that each subgroup of a given community can be appropriately represented in the overall sample population of the study, i.e., with a proportional stratification method, the sample size of each stratum is proportional to the population size of the stratum.

We followed Israel's (1992) et al. recommendation of a sample size of 397 for populations between 25,000 and 50,000. In order to be able to ensure that the number of valid questionnaires could reach 397, the strategy employed was to prepare 10% more for each group, so that the final number of questionnaires sent out was 437. The distribution of the questionnaires took place from September 23, 2023 to November 10, 23, prior to which the Teacher Development Centers of the surveyed universities were approached and assistants were to be dispatched to the colleges and universities on the day of the distribution. Completed questionnaires were collected on site by the assistants. The questionnaires were prepared in Chinese to guarantee the respondents' understanding of the questions up to certain extent and to enhance the validity of the survey.

A total of 420 valid questionnaires were retrieved in this study, with an effective response rate of 96.11%.

3.2. Measurement of variables

In this study, variables were measured using a 7-point Likert scale. The formulation of intrinsic motivation for individual teachers' knowledge sharing draws upon studies by Wasko and Faraj (2005) as well as C.-P. Lin (2007). Two primary dimensions of intrinsic motivation emerge from this formulation: self-efficacy and self-enjoyment, the latter referring to the enjoyment derived from assisting others. These dimensions encompass a total of six question items designed to gauge teachers' motivations in this context. Extrinsic motivation was measured with reference to the studies of C.-P. Lin (2007), including two dimensions of tangible rewards and reciprocity, with a total of six items.

When it comes to knowledge sharing, Hoff and Ridder's (2004) The measurement scale of Van Den Hooff and De Ridder (2004) was adopted, reflecting three dimensions of exchange of teaching-related knowledge, experience and skills among teachers through donation and collection of knowledge through nine items.

The Innovative Work Behavior Scale drew on the research by Scott and Bruce (1994) as well as Janssen (2000), which consists of three dimensions of idea generation, promotion and implementation using nine questions. These three factors are combined in such a way that a higher sum of scores indicates a higher level of innovative work behavior (Agarwal, Datta, Blake-Beard, & Bhargava, 2012). Individual characteristics incorporated the studies of C. P. Lin (2008) and El Badawy and Magdy (2015) with four question items for measurement. Organizational context resorted to the studies of Jin et al. (2010) and Davison, Ou, and Martinsons (2013) with four measurement questions. Questionnaires were used for data collection, with the first part containing basic information about the surveyed teachers (including gender, age, area of specialization, etc.) and the second part involving question items about variables. The questionnaire was developed based on English references.

3.3. Data analysis methods and procedures

This study mainly used quantitative research method to analyze the factors affecting the innovative work behavior of university teachers using statistical software Spss.26.0 and Amos.26.0. It was investigated as follows: firstly, descriptive analysis was carried out to portray the demographic status of the respondents such as gender, age, education, annual salary at work and job title. Secondly, reliability and validity tests were conducted. The reliability test was conducted using Cronbach's coefficient, which is a method of assessing internal consistency, with values ranging from 0 (no internal consistency) to 1 (perfect consistency); values between 0.8 and 0.95 are considered to stipulate a high level of reliability of the questionnaire, and values greater than 0.6 are considered an acceptable level of reliability. Meanwhile, validity analysis was conducted. The validity of the scale structure was examined by conducting a confirmatory factor analysis (CFA) on the scales of each variable. Firstly, the test results of the chi-square to the degrees of freedom ratio (X^2/df), Root Mean Square Error of Approximation (RMSEA), incremental fit index (IFI), adjusted goodness-of-fit index (TLI), comparative fit index (CFI) and adjusted goodness-of-fit index (AGFI) indices were used to verify the model's fitness, and the average variance extracted (AVE) and composite reliability (CR) values of the scales were further examined to determine the AVE and CR of the dimensions of the scales, thus judging the validity of the scales. Next, Pearson correlation analysis was used to explore the relationship between multiple variables to test whether they are correlated. Finally, structural equation modelling was used to test the proposed hypotheses, that is to test whether the structural equation models between the variables are a good fit before testing the path relationships. Meanwhile, the relationship test of the moderating effect was tested by the linear regression method and the moderation effect analysis plot.

4. Data Analysis and Findings

4.1. Descriptive statistical analysis

The data collected was preliminarily analyzed in this study using statistical software SPSS.26.0. The ratio of male and female educators is about 1:2, and the number of people aged between 31 to 45 years old is higher (up to 65%). As for education attainment, the survey respondents have all gained bachelor's degree or above qualifications, while the proportion of those who have worked for more than 3 years reaches 80.5%, and the number of those who have obtained intermediate or above titles constitutes 72.4%, showing that the respondents surveyed have achieved a certain number of years of work and have rich teaching experience, which is representative to some extent.

In this study, specific numbers were used to replace the corresponding variables, internal motivation was IM 1 to IM 6, external motivation was referred to as EM 1 to EM 6, knowledge sharing was KS 1 to KS 9, innovative behavior IWB 1 to IWB 9, individual characteristics IC 1 to IC 4, and organizational context OC 1 to OC 4.

Table 1 presents the comprehensive statistics including overall mean, overall standard deviation, reliability, validity, and CFA (Confirmatory Factor Analysis) model fit test results for each scale associated with the variables examined in this study. The overall mean values for each variable fall within the range of 5 to 6, while the overall standard deviation also aligns within the standard parameters. These findings suggest that the level of awareness among the targeted research group surpasses the moderate level in domains such as motivation, knowledge sharing, and innovative work behaviors.

4.2. Reliability and Validity

As can be seen from Table 1, the Cronbach's coefficients for all variables are greater than 0.8, suggesting that the scales used in this study all have good internal consistency and good reliability.

In this study, confirmatory factor analysis (CFA) was used to explore whether the factor structure models of the scales were consistent with the actual retrieved data. From Table 1, it can be seen that the X^2/df values are almost all within the adaptive range, and the RMSEA values are all within the applicable range, the IFI values and CFI values are in the excellent range, the AGFI values are all in the good and above range, and most of the TLIs test results show a good fit, except for the organizational context, where the TLI value is less than 0.8, yet it does not affect the test results. This shows that the CFA model is well adapted toward each variable, which indirectly proves that the scale structure is valid, and all the question items are significantly related to the theoretical structure.

Under the premise that the CFA model serves the purpose well, the AVE and CR of the scales were further examined. According to Table 2, the AVE value reaches more than 0.5 and the CR value over 0.7, meaning the dimensions of the measurement scales have effective AVE and CR values, which proves that the measurements used in the study enjoy good validity.

Table 1 CFA model fit, descriptive statistics, reliability, and validity for each variable scale

Index Variable	Popula tion Mean	Popula tion S.D.	Cronb ach's Alpha	X^2/df	RMSE A	IFI	TLI	CFI	AGFI
IM	5.55	0.57	0.894	1.881	0.046	0.987	0.978	0.987	0.968
EM	5.83	0.57	0.863	1.816	0.044	0.985	0.975	0.985	0.971
KS	5.80	0.56	0.939	2.936	0.068	0.936	0.914	0.935	0.931
IWB	5.77	0.53	0.936	3.846	0.072	0.909	0.9	0.909	0.914
IC	5.63	0.62	0.943	1.14	0.07	0.945	0.834	0.945	0.862
OC	5.75	0.64	0.869	1.61	0.05	0.922	0.763	0.921	0.819
X^2/df : 1-3 is excellent, 3-5 is good; RMSEA: <0.05 is excellent, <0.08 is good; IFI\TLI\CFI\AGFI: >0.9 is excellent, >0.8 is good.									

Table 2 Average variance extracted (AVE) and composite reliability (CR) tests for variable scale

Path relationship			Estimate	AVE	CR
IM1	<---	IM	0.871	0.514	0.863
IM2	<---		0.677		
IM3	<---		0.711		
IM4	<---		0.667		
IM5	<---		0.641		
IM6	<---		0.712		
EM1	<---	EM	0.616	0.509	0.859

EM2	<---		0.862		
EM3	<---		0.594		
EM4	<---		0.749		
EM5	<---		0.763		
EM6	<---		0.659		
KS1	<---	KS	0.849	0.505	0.899
KS2	<---		0.581		
KS3	<---		0.573		
KS4	<---		0.577		
KS5	<---		0.622		
KS6	<---		0.843		
KS7	<---		0.849		
KS8	<---		0.579		
KS9	<---		0.818		
IWB1	<---	IWB	0.647	0.505	0.901
IWB2	<---		0.609		
IWB3	<---		0.778		
IWB4	<---		0.746		
IWB5	<---		0.624		
IWB6	<---		0.796		
IWB6	<---		0.733		
IWB6	<---		0.636		
IWB6	<---		0.794		
IC1	<---	IC	0.716	0.531	0.82
IC2	<---		0.845		
IC3	<---		0.732		
IC4	<---		0.6		
OC1	<---	OC	0.688	0.508	0.81
OC2	<---		0.757		
OC3	<---		0.732		
OC4	<---		0.669		

4.3. Correlation analysis

According to the results in Table 3, the Pearson correlation coefficients for each variable are less than 0.01 and greater than 0, proving that there is a significant positive correlation between each variable.

Table 3 Pearson correlation analyses

	IM	EM	KS	IWB	IC	OC
IM	1					
EM	.461**	1				
KS	.479**	.586**	1			
IWB	.536**	.560**	.783**	1		
IC	.319**	.436**	.519**	.532**	1	
OC	.365**	.467**	.552**	.566**	.449**	1

There was a significant correlation at the .01 level (bilateral).

4.4. Structural equation model (SEM) analysis

Table 4 SEM model fit and path relationship tests for direct effects

Path relationship			Estimate	S.E.	C.R.	P	Fit Measure
IWB	<---	IM	0.549	0.062	7.432	***	X ² /df=3.215, RMSEA=0.073, IFI=0.824, TLI=0.802, CFI=0.823, AGFI=0.844
IWB	<---	EM	0.836	0.079	8.333	***	
KS	<---	IM	0.315	0.047	5.589	***	X ² /df=3.215, RMSEA=0.073, IFI=0.824, TLI=0.802, CFI=0.823, AGFI=0.844
KS	<---	EM	0.949	0.095	7.987	***	
IWB	<---	KS	1	0.161	7.856	***	X ² /df=3.226, RMSEA=0.073, IFI=0.826, TLI=0.8, CFI=0.824, AGFI=0.871

Table 5 SEM model fit and path relationship tests for mediating effects

Path relationship			Estimate	S.E.	C.R.	P	Fit Measure
IWB	<---	IM	0.324	0.09	3.845	***	X ² /df=2.853, RMSEA=0.067, IFI=0.813, TLI=0.8, CFI=0.811, AGFI=0.858
KS	<---	IM	0.713	0.101	7.336	***	
IWB	<---	KS	0.693	0.114	6.297	***	
IWB	<---	EM	0.264	0.077	2.431	0.015	X ² /df=3, RMSEA=0.07, IFI=0.803, TLI=0.801, CFI=0.802, AGFI=0.851
KS	<---	EM	0.795	0.085	7.748	***	
IWB	<---	KS	0.644	0.111	4.932	***	

According to the SEM model fit measurement results in Tables 4 and 5, the CMIN/DF value is close to 3, which falls into the excellent range, the RMSEA values are all less than 0.8, and all other indicators for goodness of fit are greater than 0.8, which shows that the path relationship between the variables has a good fit; meanwhile, it proves that the theoretical model proposed in this study has a good fitting effect.

(1) SEM path relationship test of IM and EM on IWB

As can be seen from Table 4, individuals' internal motivation positively influences innovative work behavior in a significant way ($\beta=0.549$, $P<0.001$), so hypothesis H1 is valid; individuals' external motivation has a significant positive influence on innovative work behavior ($\beta=0.836$, $P<0.001$), so H2 is valid. It is therefore proved that both stimulating individual teachers' internal motivation (self-efficacy and self-enjoyment) and stimulating external motivation (tangible rewards and reciprocity) can promote their innovative work behaviors. This is consistent with the findings of Sun and Wang (2009).

(2) SEM path relationship test of IM and EM on KS

According to Table 4, individuals' internal motivation significantly and positively influences knowledge sharing ($\beta=0.315$, $P<0.001$), so H3 is valid; individuals' external motivation has a significant positive influence on knowledge sharing ($\beta=0.949$, $P<0.001$), suggesting that hypothesis H4 is valid. Individual teachers will be able to gain satisfaction and enjoyment when they feel that they are capable of providing valuable knowledge to their organization. Teachers are more willing to share knowledge if they can reap rewards or more compensation through knowledge sharing (Janowicz-Panjaitan & Noorderhaven, 2009). Although most people agree that knowledge has potential innovative value, individuals may be less willing to share it with others; after all, knowledge is also something that can add to their value and competitive advantage (C.-P. Lin, 2007). However, this study found that as long

as the internal and external motives that motivate teachers exist, it is possible to encourage them to engage in knowledge sharing and to gain corresponding value in return.

(3) SEM path relationship test of KS on IWB

Drawing from Table 4, knowledge sharing significantly and positively affects innovative work behavior ($\beta=1$, $P<0.001$), proving H5 to be valid. Knowledge sharing as an activity of exchanging innovative ideas among team members is an important mechanism of innovative behavior. When employees of an organization contribute their knowledge and have wider opportunities to develop creative ideas, ultimately their innovative work behaviors will be promoted (Liao, Fei, & Chen, 2007; Liebowitz, 2002; H. F. Lin, 2007). This is also true for the university faculty community; when faculty members actively share knowledge with each other, they are inspired to facilitate their teaching and research in order to achieve desired goals. Therefore, college and university organizations should actively explore the knowledge sharing mechanism to promote exchange and collision of knowledge among teachers and to accelerate the innovation process via knowledge.

(4) SEM path relationship test of the mediating role of KS between IM and IWB

Table 4 and 5 demonstrate that the path system is 0.549 when individuals' internal motivation directly acts on innovative work behavior, which is significant. And when knowledge sharing is used as a mediating variable between the two, the systematic reduction of individuals' internal motivation acting on innovative behavior is 0.324 with $P<0.001$, which is highly significant, while the path coefficients of the mediating role of knowledge sharing between internal motivation and innovative work behaviors are 0.713 and 0.693, respectively, with P less than 0.001 and denoting high significance. The research of Naveed and Wang (2023) also came to a similar conclusion, namely, when the effect of the independent variable on the dependent variable is significant, and still significant with the inclusion of a mediator variable, and the path system is significantly lower than the original coefficient or the path system of the mediator variable, then it can be determined as a partial mediating effect. Therefore, H6 gets partially acceptable. That is to say that stimulating the internal motivation of university teachers can be effective in promoting innovative work behavior, and if teachers can share knowledge among themselves, then innovative work behavior can be strengthened to a certain extent.

(5) SEM path relationship test of the mediating role of KS on EM and IWB

As can be seen from Table 4 and 5, the path system when individuals' external motivation acts directly on innovative behavior is 0.836, which is significant. And when knowledge sharing is used as a mediating variable between the two, the system of individuals' external motivation acting on innovative behavior is reduced to 0.264, $P=0.15>0.05$, which is not significant. And the path coefficients of the mediating role of knowledge sharing between external motivation and innovative behavior are 0.79 and 0.64, respectively, with P less than 0.001 and suggesting that both are highly significant. According to previous studies, once the mediating variable is introduced, the effect of the original independent variable and the dependent variable is not significant, then full mediation can be determined. Therefore, knowledge sharing has a fully mediating role between external motivation and innovative work behavior, which is in line with H7.

(6) Test of the moderating role of IC between IM and KS

In order to verify the moderating role of individual characteristics between internal motivation and knowledge sharing, this study utilizes linear regression method and moderating effect decomposition diagram for testing. The study constructed linear regressions using demographic variables, independent variables (intrinsic motivation), moderating variables (individual characteristics), and interaction terms between independent variables and moderator variables as independent variables, and knowledge sharing as the dependent variable using SPSS.26.0 statistical software. The standardized coefficient of the interaction term between independent variables and moderating variables (intrinsic motivation*individual characteristics) is -0.12^* , $p<0.05$, which is at a significant level, proving that the interaction term is significant and has some moderating effect. The study made further examinations

using a moderating effect decomposition plot – as shown in Figure 2, the slope of low individual characteristics is steeper than the slope of high individual characteristics, proving that the moderating effect of low individual characteristics is stronger, which means that the moderating effect of individual characteristics between internal motivation and knowledge sharing is more pronounced when the teacher is female or younger, and H8 is supported.

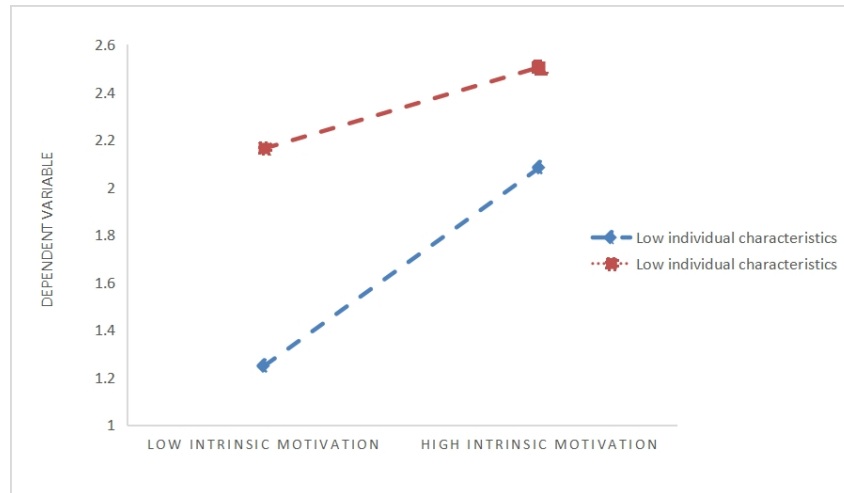


Fig. 2 A path relationship model of IC's moderating influence on KS and IM

(7) Test of the moderating role of IC between EM and KS

The same method was employed to test individual characteristics as moderating variables acting on extrinsic motivation and knowledge sharing; from the linear regression analysis, it can be seen that the standardized coefficient of extrinsic motivation*individual characteristics is -0.168^{**} , $p < 0.01$, suggesting a significant level that signifies the significant interaction term and its moderating effect to some extent.

Based on Figure 3, the slope of low individual characteristics is steeper than that of high individual characteristics, proving that the moderating effect of low individual characteristics is stronger, which means that the moderating effect of individual characteristics between external motivation and knowledge sharing is more evident when the teacher is female or younger, hence H9 is supported.

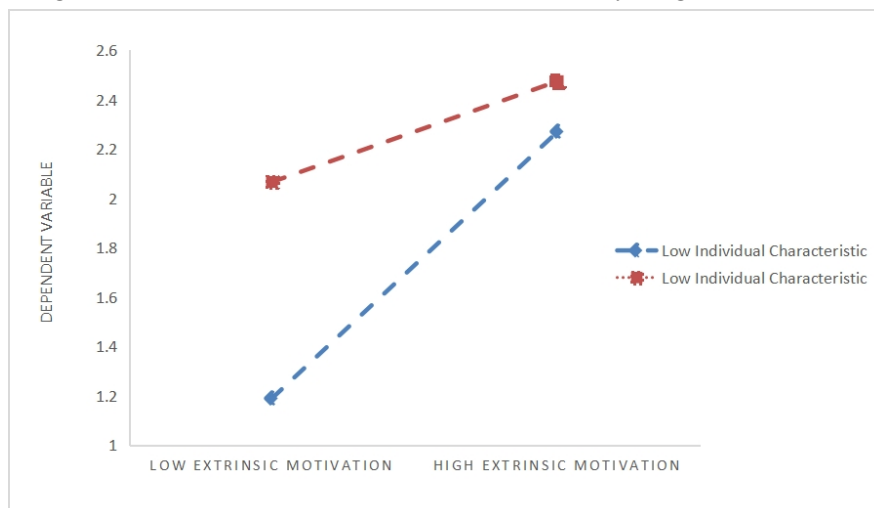


Fig. 3 A path relationship model of IC's moderating influence on KS and EM

(8) Testing of the moderating role of OC between IM and KS

The role of organizational context as a moderating variable, acting on intrinsic motivation and knowledge sharing, was tested under the same method. According to the results of linear regression, the standardized coefficient of intrinsic motivation*organizational context is -0.052 , $p = 0.182$,

presenting no significant effect, so H10 is not supported. That is to say, regardless of the openness of the organization or the level of information technology of a university, knowledge sharing behavior among teachers are not affected. As long as their intrinsic motivation is fully stimulated, the knowledge sharing among them remains unaltered no matter whether the organization they are in is open or closed or whether it has better information technology or not.

(9) Test of the moderating role of OC between EM and KS

The same method was applied to test organizational context as a moderating variable that acts on extrinsic motivation and knowledge sharing. According to the results of linear regression, the standardized coefficient of extrinsic motivation*organizational context is -0.084, $p=0.26$, which shows a non-significant effect, so H11 is not supported. Therefore, the openness of the organization or the level of information technology of a university where university teachers work cannot affect the knowledge sharing behavior among them. If their extrinsic motivation is sufficiently stimulated, whether the organization they are in is open or closed or whether it has better information technology or not, it cannot affect the knowledge sharing among teachers.

5. Discussion

Through empirical research, it is demonstrated that both intrinsic and extrinsic motivation of individuals can stimulate knowledge sharing behaviors and generate innovative work behaviors, and H1 and H3 are supported. Individuals can feel satisfaction and enjoyment when they feel that they are capable of providing valuable knowledge to the organization or enhancing organizational innovation. This is consistent with researchers' findings that employees usually share knowledge if they believe it will benefit them and the organization as a whole (Iqbal et al., 2011). It also validates the claim of self-efficacy and helpfulness (enjoyment) as intrinsic boosters for knowledge sharing in higher education as proposed by Deci, Olafsen, and Ryan (2017), and the results also proved that intrinsic motivation has a positive effect on knowledge sharing

In the meantime, this research reveals that enhanced extrinsic motivation can also stimulate knowledge sharing, with H2 and H4 being supported. Rewarding and reciprocal behaviors in the context of higher education can provide an atmosphere of mutual collaboration that motivates knowledge owners to improve their relationships with each other, which is instrumental in ensuring that sustained knowledge sharing Chedid, Caldeira, Alvelos, and Teixeira (2020) behaviors are generated, and the present study yields a similar conclusion. Likewise, this paper confirms that individuals' extrinsic motivation has a positive effect on innovative work behaviors, and that by stimulating individuals' external motivation, they are likely to exhibit high levels of creativity and are more likely to take risks and freely explore and experiment with ideas (Shin & Zhou, 2003), which, in turn, brings about innovative work behaviors..

Knowledge sharing among individuals is more likely to promote innovative work behaviors, and H5 is supported. Our study reiterates that knowledge sharing among team members does promote mutual learning, which in turn stimulates innovation (Eisenhardt & Tabrizi, 1995). In the process of knowledge sharing, the collision of different perspectives may then generate energy that can be channeled into new ideas and products, or new work (Leonard & Sensiper, 1998). It is demonstrated that effective knowledge sharing drives organizational and individual learning, which in turn accelerates and enhances innovative work behaviors.

In this study, knowledge sharing is found to play a fully mediating role between extrinsic motivation and innovative work behavior, which proves H7. Whereas knowledge sharing plays only a partial mediating role between intrinsic motivation and innovative work behavior, meaning H6 is partially supported. It is hence proved that after extrinsic motivation is stimulated, it is more conducive to knowledge sharing among teachers, during which process innovative work behavior is promoted. These results illustrate the power of guiding behavior through reinforcement in the form of extrinsic

motivation (extrinsic motivation)(Kerr, 1975) et al.. that is, a way in which extrinsic motivation leads to innovation through knowledge sharing. Intrinsic motivation can also influence an individual's innovative work behavior to some extent through knowledge sharing, but is weaker than extrinsic motivation.

This study also examines the role of individual characteristics (age and gender) in moderating motivation and knowledge sharing, confirming that individual characteristics moderate the relationship between motivation and knowledge sharing (Nguyen, Nham, Froese, & Malik, 2019). Specifically, the younger a teacher is, the more sensitive he or she tends to be in the face of external rewards and self-fulfillment than their older counterparts, and the more willing he or she is to share with others in hope of obtaining rewards or self-enjoyment. This is consistent with other scholars' findings that young people want to share knowledge as a way to express themselves and gain recognition from others, whereas older people may be concerned about losing their competitive edge once they share their knowledge (Ling, Yahya, & Way, 2015) et al.. As for gender, women tend to have more community-oriented attributes and have a stronger influence on knowledge sharing behavior than men (C.-P. Lin, 2008). Thus, individual characteristics can moderate the relationship between motivation and knowledge sharing, verifying H8 and H9.

When investigating the role of organizational context (organizational setting and information technology) in moderating relationship between motivation and knowledge sharing, contrary to expectations, organizational context does not play a moderating role. In general, in an open organizational setup, individuals are usually not bound by organizational and relational responsibilities, which reduces the impact of factors like motivation on knowledge sharing (Jin et al., 2010) , while having well-developed information technology leads to better knowledge sharing (Davison et al., 2013). However, the conclusion of this study displays just the opposite, mainly due to the particularity of Chinese culture, so it is not consistent with other researchers' findings, and H10 and H11 are not accepted.

5.1. Theoretical Implications

This study enriches the connotation of self-determination theory and knowledge management theory, and fills the gap in academic research on the relationship between individual motivation, knowledge sharing and innovative work behavior of college teachers in the context of Chinese culture. At the same time, this study also provides important theoretical support for further exploring the construction and improvement of knowledge sharing platform for college teachers.

5.2. Practical Implications

It is crucial to take measures to stimulate the motivation of individual teachers and construct a knowledge sharing platform, since both internal and external motivation of individual university teachers positively affect innovative work behaviors, and a significant positive correlation between motivation and innovative work behavior is still found after taking knowledge sharing as a mediating variable. It is found that the psychological incentives provided by the organization, which can effectively stimulate individual motivation, can increase the employees' willingness to exchange knowledge, thus promoting their knowledge sharing and achieving knowledge integration before actual behaviors are yielded (W.-T. Wang, 2016). The construction of the knowledge sharing platform can prompt more teachers to communicate and share their knowledge with each other in terms of teaching and research, so as to complement each other's strengths and weaknesses. The process of knowledge sharing is the core of successful knowledge management and is closely related to all aspects of innovation in higher education institutions (Boroujerdi, Hasani, & Delshab, 2020). Similarly, the results of this research are of great reference value to governing bodies responsible for faculty development in higher education.

6. Conclusion

The results of the study provide empirical evidence for the direct and indirect influence of motivations

on the innovative work behaviors of university teachers, via the facilitation of knowledge exchanges. The results underscore the disproportionate influence of extrinsic incentives in conjunction with a culture of sharing on the generation of innovations. Moreover, an examination of individual variances offers insights into how to customize incentive and development strategies to accommodate different faculty demographics. These revelations regarding interactional and dispositional catalysts better equip leaders to foster instructor ingenuity and long-term institutional advantage, given the growing demand for creativity in the pursuit of educational excellence.

The limitations of this study are threefold: first, the selection of the sample. The sample was narrowly selected, confined to full-time teachers of public undergraduate universities in Guangxi, China, which suggests that the motivation, knowledge sharing and innovative work behavior of professional teachers in other provinces may be different, and it also means that the innovative work behavior in this study is only for individual professional teachers in higher education institutions, and the results may be different if the model is used to predict the innovative work behavior of people other than individual professional teachers in higher education institutions. Second, the choice of research methodology. Only a cross-sectional research method was used, so the proposed relationship occurs at a single point in time and does not fully reflect the psychology of all time periods; after all, human psychological activities change over time. Third, the selection of variables. It is not enough to limit the factors affecting the innovative work behavior of Chinese university teachers to individual motivation, knowledge sharing, individual characteristics, and organizational context. Because innovative work behavior is a complex and systematic process, more factors should be taken into consideration.

Efforts in the following areas can be considered in future research: first, expanding the scope of sample selection, continuing the research on the innovative work behavior of professional university teachers in other provinces of China, and expanding the study to other non-professional groups of teachers in universities, in order to reconfirm the applicability of the relationship between motivation, knowledge sharing, and innovative work behavior to the enhancement of the overall innovation ability of Chinese university teachers. Second, a variety of research methods including questionnaires and other aspects may be used. Qualitative research methods combining interviews and observations can be used in future studies. Time-series data can also be considered in data collection, where data from research subjects are collected at different times to observe the changes. Third, variables affecting the innovative work behavior of Chinese university teachers can be expanded; for example, leadership, teamwork, team trust and other related factors can be included in future investigations

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References

- Agarwal, U. A., Datta, S., Blake-Beard, S., & Bhargava, S. (2012). Linking LMX, innovative work behaviour and turnover intentions The mediating role of work engagement. *Career Development International*, 17(2-3), 208-230.
- Ajzen, I. (2011). The theory of planned behaviour: Reactions and reflections. *Psychology & Health*, 26(9), 1113-1127.
- Akram, T., Lei, S., Haider, M. J., & Hussain, S. T. (2020). The impact of organizational justice on employee innovative work behavior: Mediating role of knowledge sharing. *Journal of Innovation & Knowledge*, 5(2), 117-129.
- Al-Mansoori, R. S., & Koc, M. (2019). Toward Knowledge-Based Economy: Innovation and

Transformational Leadership in Public Universities in Texas and Qatar. *Sustainability*, 11(23).

Bello, O. W., & Oyekunle, R. A. (2014). Attitude, Perceptions and Motivation towards Knowledge Sharing: Views from Universities in Kwara State, Nigeria. *African Journal of Library Archives and Information Science*, 24(2), 123-134.

Boroujerdi, S. S., Hasani, K., & Delshab, V. (2020). Investigating the influence of knowledge management on organizational innovation in higher educational institutions. *Kybernetes*, 49(2), 442-459.

Charband, Y., & Navimipour, N. J. (2019). Online knowledge sharing mechanisms: A systematic review of the state of the art literature and recommendations for future research (vol 18, pg 1131, 2016). *Information Systems Frontiers*, 21(4), 957-957.

Chedid, M., Caldeira, A., Alvelos, H., & Teixeira, L. (2020). Knowledge-sharing and collaborative behaviour: An empirical study on a Portuguese higher education institution. *Journal of Information Science*, 46(5), 630-647.

Coun, M. J. H., 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.

Cummings, J. N. (2004). Work groups, structural diversity, and knowledge sharing in a global organization. *Management Science*, 50(3), 352-364.

Damij, N., Li, J., Wu, N., & Xiong, S. (2021). Sustainable innovation in the context of organizational cultural diversity: The role of cultural intelligence and knowledge sharing. *Plos One*, 16(5).

Davison, R. M., Ou, C. X. J., & Martinsons, M. G. (2013). Information technology to support informal knowledge sharing. *Information Systems Journal*, 23(1), 89-109.

Deci, E. L., Olafsen, A. H., & Ryan, R. M. (2017). Self-Determination Theory in Work Organizations: The State of a Science. In F. P. Morgeson (Ed.), *Annual Review of Organizational Psychology and Organizational Behavior*, Vol 4 (Vol. 4, pp. 19-43).

Eisenhardt, K. M., & Tabrizi, B. N. (1995). ACCELERATING ADAPTIVE PROCESSES - PRODUCT INNOVATION IN THE GLOBAL COMPUTER INDUSTRY. *Administrative Science Quarterly*, 40(1), 84-110.

El Badawy, T. A., & Magdy, M. M. J. I. B. R. (2015). Assessing the impact of emotional intelligence on job satisfaction: An empirical study on faculty members with respect to gender and age. 8(3), 67.

Ferreras-Garcia, R., Sales-Zaguirre, J., & Serradell-López, E. (2021). Sustainable Innovation in Higher Education: The Impact of Gender on Innovation Competences. *Sustainability*, 13(9).

Fontana, D. (1986). INTRINSIC MOTIVATION AND SELF-DETERMINATION IN HUMAN-BEHAVIOR - DECI,EL, RYAN,RM. *British Journal of Educational Psychology*, 56, 226-228.

Fullwood, R., & Rowley, J. (2017). An investigation of factors affecting knowledge sharing amongst UK academics. *Journal of Knowledge Management*, 21(5), 1254-1271.

Gupta, V., & Singh, S. (2015). Leadership and Creative Performance Behaviors in R&D Laboratories: Examining the Mediating Role of Justice Perceptions. *Journal of Leadership & Organizational Studies*, 22(1), 21-36.

Hendriks, P. H. J. (2005). Knowledge management in organizations: A critical introduction. *Management Learning*, 36(4), 535-539.

- Iqbal, M. J., Rasli, A., Heng, L. H., Ali, M. B. B., Hassan, I., & Jolaei, A. (2011). Academic staff knowledge sharing intentions and university innovation capability. *African Journal of Business Management*, 5(27), 11051-11059.
- Israel, G. D. (1992). Determining sample size (Fact sheet PEOD-6). In: University of Florida.
- Janowicz-Panjaitan, M., & Noorderhaven, N. G. (2009). Trust, Calculation, and Interorganizational Learning of Tacit Knowledge: An Organizational Roles Perspective. *Organization Studies*, 30(10), 1021-1044.
- Janssen, O. (2000). Job demands, perceptions of effort-reward fairness and innovative work behaviour. *Journal of Occupational and Organizational Psychology*, 73, 287-302.
- Jin, B., Park, J. Y., & Kim, H.-S. (2010). What makes online community members commit? A social exchange perspective. *Behaviour & Information Technology*, 29(6), 587-599.
- Kang, M., & Lee, M.-J. (2017). Absorptive capacity, knowledge sharing, and innovative behaviour of R&D employees. *Technology Analysis & Strategic Management*, 29(2), 219-232.
- Kerr, S. (1975). FOLLY OF REWARDING A, WHILE HOPING FOR B. *Academy of Management Journal*, 18(4), 769-783.
- Leonard, D., & Sensiper, S. (1998). The role of tacit knowledge in group innovation. *California Management Review*, 40(3), 112-+.
- Liang, C., Chang, C.-C., Rothwell, W., & Shu, K.-M. (2016). Influences of Organizational Culture on Knowledge Sharing in an Online Virtual Community: Interactive Effects of Trust, Communication and Leadership. *Journal of Organizational and End User Computing*, 28(4), 15-32.
- Liao, S. H., Fei, W. C., & Chen, C. C. (2007). Knowledge sharing, absorptive capacity, and innovation capability: an empirical study of Taiwan's knowledge-intensive industries. *Journal of Information Science*, 33(3), 340-359.
- Liebowitz, J. (2002). Facilitating innovation through knowledge sharing: A look at the US Naval Surface Warfare Center-Carderock Division. *Journal of Computer Information Systems*, 42(5), 1-6.
- Lin, C.-P. (2007). To share or not to share: Modeling tacit knowledge sharing, its mediators and antecedents. *Journal of Business Ethics*, 70(4), 411-428.
- Lin, C.-P. (2008). Clarifying the relationship between organizational citizenship behaviors, gender, and knowledge sharing in workplace organizations in Taiwan. *Journal of Business and Psychology*, 22(3), 241-250.
- Lin, H. F. (2007). Knowledge sharing and firm innovation capability: an empirical study. *International Journal of Manpower*, 28(3-4), 315-332.
- Ling, T. C., Yahya, S., & Way, L. C. (2015, Nov 11-12). *Assessing the Role of Knowledge Management Practices on Lecturers' Work Innovativeness: Evidence from Malaysian Private Higher Education Institutions*. Paper presented at the 26th International-Business-Information-Management-Association Conference, Madrid, SPAIN.
- Mansor, Z. D., & Jaharuddin, N. S. (2020). EXPLORING INTRINSIC MOTIVATION AND KNOWLEDGE SHARING FROM THE PERSPECTIVE OF ISLAMIC TEACHING. *International Journal of Business and Society*, 21(1), 334-352.
- Mazzucchelli, A., Chierici, R., Abbate, T., & Fontana, S. (2019). Exploring the microfoundations of innovation capabilities. Evidence from a cross-border R&D partnership. *Technological Forecasting and Social Change*, 146, 242-252.

- McAdam, R., Moffett, S., & Peng, J. (2012). Knowledge sharing in Chinese service organizations: a multi case cultural perspective. *Journal of Knowledge Management*, 16(1), 129-147.
- Mohammed, B. F., Zhao, J., Yang, C., You, Y., & Zalat, Y. M. A. A. (2022). The impact of self-directed team on high-performance organization with the mediating role of knowledge sharing culture: Organizational support as a moderator. *Frontiers in Psychology*, 13.
- Mura, M., Lettieri, E., Radaelli, G., & Spiller, N. (2013). Promoting professionals' innovative behaviour through knowledge sharing: the moderating role of social capital. *Journal of Knowledge Management*, 17(4), 527-544.
- Naveed, A., & Wang, C. (2023). Innovation and labour productivity growth moderated by structural change: Analysis in a global perspective. *Technovation*, 119, 16.
- Nguyen, T. M., Nham, T. P., Froese, F. J., & Malik, A. (2019). Motivation and knowledge sharing: a meta-analysis of main and moderating effects. *Journal of Knowledge Management*, 23(5), 998-1016.
- Osterloh, M., & Frey, B. S. (2000). Motivation, knowledge transfer, and organizational forms. *Organization Science*, 11(5), 538-550.
- Rhodes, R. E., & de Bruijn, G.-J. (2013). What Predicts Intention-Behavior Discordance? A Review of the Action Control Framework. *Exercise and Sport Sciences Reviews*, 41(4), 201-207.
- Scott, S. G., & Bruce, R. A. (1994). DETERMINANTS OF INNOVATIVE BEHAVIOR - A PATH MODEL OF INDIVIDUAL INNOVATION IN THE WORKPLACE. *Academy of Management Journal*, 37(3), 580-607.
- Seba, I., Rowley, J., & Delbridge, R. (2013, 2013, Sep 05-06). *Insights into Knowledge Sharing in the Dubai Police Force*. Paper presented at the 14th European Conference on Knowledge Management (ECKM), Kaunas Univ Technol, Kaunas, LITHUANIA.
- Shin, S. J., & Zhou, J. (2003). Transformational leadership, conservation, and creativity: Evidence from Korea. *Academy of Management Journal*, 46(6), 703-714.
- Srivastava, A., Bartol, K. M., & Locke, E. A. (2006). Empowering leadership in management teams: Effects on knowledge sharing, efficacy, and performance. *Academy of Management Journal*, 49(6), 1239-1251.
- Sun, R., & Chen, G. (2008, 2009, Dec 19). *Empirical Research on Expectation of Leader, Horizontal Member Exchange, Intrinsic motivation and Employee Innovation in China*. Paper presented at the International Seminar on Business and Information Management (ISBIM 2008), Wuhan, PEOPLES R CHINA.
- Sun, R., & Wang, N. (2009, 2009, May 16-17). *Empirical Research on Organizational Climate for Innovation ,Extrinsic motivation and Employee Innovation in China*. Paper presented at the 1st International Symposium on Information Engineering and Electronic Commerce, Ternopil, UKRAINE.
- Tang, Q., Zhao, X., & Liu, S. (2016). The effect of intrinsic and extrinsic motivations on mobile coupon sharing in social network sites The role of coupon proneness. *Internet Research*, 26(1), 101-119.
- Tsai, W. P. (2001). Knowledge transfer in intraorganizational networks: Effects of network position and absorptive capacity on business unit innovation and performance. *Academy of Management Journal*, 44(5), 996-1004.
- Tuomi, I. (1999). Data is more than knowledge: Implications of the reversed knowledge hierarchy for knowledge management and organizational memory. *Journal of Management Information Systems*, 16(3), 103-117.

Van Den Hooff, B., & De Ridder, J. A. J. J. o. k. m. (2004). Knowledge sharing in context: the influence of organizational commitment, communication climate and CMC use on knowledge sharing. 8(6), 117-130.

von Krogh, G., Nonaka, I., & Rechsteiner, L. (2012). Leadership in Organizational Knowledge Creation: A Review and Framework. *Journal of Management Studies*, 49(1), 240-277.

Wang, Q., Shu, H., & Zhu, J. CN114741529-A.

Wang, W.-T. (2016). Examining the Influence of the Social Cognitive Factors and Relative Autonomous Motivations on Employees' Knowledge Sharing Behaviors. *Decision Sciences*, 47(3), 404-436.

Wang, W.-T., & Hou, Y.-P. (2015). Motivations of employees' knowledge sharing behaviors: A self-determination perspective. *Information and Organization*, 25(1), 1-26.

Wasko, M. M., & Faraj, S. (2005). Why should I share? Examining social capital and knowledge contribution in electronic networks of practice. *Mis Quarterly*, 29(1), 35-57.

Zhang, G. N., Zhang, X. X., & Wang, Y. Y. (2022). Perceived insider status and employees' innovative behavior: the role of knowledge sharing and organizational innovation climate. *European Journal of Innovation Management*.

Zheng, W. (2005). *The impact of organizational culture, structure, and strategy on knowledge management effectiveness and organizational effectiveness*: University of Minnesota.

Zhou, K. Z., & Li, C. B. (2012). How knowledge affects radical innovation: Knowledge base, market knowledge acquisition, and internal knowledge sharing. *Strategic Management Journal*, 33(9), 1090-1102.