

Research Article

Knowledge Sharing Motivation, Behavior, and Creativity of Knowledge Workers in Virtual Organizations

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Focusing on the basic research subject of “seeking effective ways to enhance knowledge workers’ creativity,” this paper has surveyed a total of 208 employees from 11 Chinese high-tech enterprises. Based on review and analysis of relevant literature, this paper has constructed a moderating effect model including mediating factors relying on the social cognitive theory and tested the model by hierarchical multiple regression. The results show that there is a significant positive correlation between knowledge sharing motivation and creativity of members in a virtual organization. Knowledge sharing behavior plays a partial mediating role between knowledge sharing motivation and creativity, and self-efficacy moderates the complete mediating effect of knowledge sharing behavior on the relationship between knowledge sharing motivation and creativity. These conclusions enrich the theory of the relationship between knowledge sharing motivation and creativity, and enable enterprises to understand the importance of employees’ knowledge sharing motivation and the ways to stimulate employees’ creativity by activating their knowledge sharing behavior.

1. Introduction

Since its proposal in the 1990s [1], virtual organization has rapidly become a hot issue in the field of management research [2]. In terms of creativity, it is found in literature review that most of the existing literature analyzes employee creativity from two perspectives of personality traits and social interaction [3]. In recent years, studies have gradually shifted to explore the factors affecting the employee creativity and intrinsic mechanism [4], and have been increasingly related to psychology. Factors such as motivation and behavior are increasingly regarded as important factors affecting creativity [5]. As the research continues, scholars have realized that motivation and creativity are not simply of a direct effect, they can also be affected by a number of complex factors [6]. However, no systematic theoretical analysis and empirical research is available on the intrinsic influencing mechanism of knowledge workers’ motivation and behavior on employee creativity, and there is a scarcely

contextual study on how this relationship works. Therefore, it is of vital importance to study and clarify the intrinsic correlation and influencing mechanism between the motivation and creativity of knowledge workers.

Knowledge sharing is the process of providing or receiving task information and knowledge, helping or working with others to solve problems, and developing new ideas or implementing policies and procedures [7]. With the rapid development of the Internet, enterprises can set up virtual organizations for cooperation and communication more efficiently. It has been agreed that knowledge sharing plays a key role in enterprise development (access to knowledge resources and value) in today’s era [8]. Huang et al. [9] believed that virtual organizations could share knowledge more freely and efficiently than traditional organizations. Pi et al. [10] held that employees would be more positive in knowledge sharing when they felt a positive atmosphere in the virtual organization. Choi [11] proved that in an organization, the more active the members were, the more they

could acquire knowledge from knowledge sharing. Moghavi et al. [12] argued that trust, reciprocity, and outcome expectancy were the main motivations for knowledge sharing among members of virtual organizations. Tha'er et al. [13] found that reciprocity and organizational identity were the main motivations for knowledge sharing, while trust exhibited no significant correlation with knowledge sharing motivation. Liao [14] pointed out that cognitive and social expected benefits were important factors influencing knowledge sharing intention in virtual organizations. Ma et al. [15] insisted that altruism was the primary motivation for knowledge sharing. Only Sun [16] and a few other scholars found that self-efficacy had a moderating effect on knowledge sharing motivation in virtual organizations.

The abovementioned analysis shows that despite many academic studies on knowledge sharing behavior in virtual organizations, there is no unified understanding of the motivations for knowledge sharing. The existing literature does not give a clear answer on how knowledge sharing motivation affects employee creativity, and the moderating effect of knowledge sharing motivation remains to be tested by empirical research. Allowing for the oversight of previous studies, this paper examines the influence of knowledge sharing motivation in virtual organizations on employee creativity with the help of a questionnaire, in an effort to make up the deficiencies in existing research.

2. Literature Review and Hypothesis Development

2.1. Knowledge Sharing Motivation and Employee Creativity in Virtual Organizations. Knowledge sharing is a unique and valuable resource that helps companies gain an edge over competition [17]. However, the flow of knowledge within an organization is not easy and knowledge sharing is usually not spontaneous [18]. Motivation is the action tendency of an individual to take a particular behavior, or rather, some degree of expression of whether or not to take this behavior guided by the decision process of the behavior choice. Therefore, motivation is the necessary process of any behavioral expression and is the decision before behavior emergence. Knowledge sharing motivation is manifested by employees' strong desire for knowledge sharing behavior [19]. In virtual organizations where information is exchanged more frequently, the cognitive ability and knowledge sharing behavior have enabled employees with strong knowledge sharing motivation to show passion and challenge for their work. As a result, these employees are more inclined to use innovative thinking to find a variety of solutions, ultimately exhibiting high creativity. Studies show that knowledge sharing motivation is the antecedent variable of knowledge sharing behavior, which determines the enthusiasm and level of employees' knowledge sharing behavior by using their expertise and creative thinking [20]. Employees with strong motivations for knowledge sharing tend to invest more time in trying to solve problems, plus have higher persistence [21]. Employees' perception of self-determined

behavior is beneficial to increase their willingness to act creatively, and such input is closely related to employee creativity. Employees with strong knowledge sharing motivation tend to be curious and enthusiastic about their work, and they are more likely to explore innovative solutions spontaneously and proactively. These behaviors indicate that employees with stronger motivations for knowledge sharing can exhibit higher levels of creativity [22]. To sum up, this paper proposes the following.

Hypothesis 1. Knowledge sharing motivation of virtual organization members has a positive influence on their creativity.

2.2. Mediating Effect of Knowledge Sharing Behavior. Knowledge sharing behavior is an important part of knowledge reorganization and innovation in knowledge sharing. Complex innovative behavior is mainly designed to meet the increasing needs of customers and serves as the product of the combination of knowledge resources and customers' ever-changing needs, with high dependence on knowledge resources and risks [23]. From the perspective of knowledge sharing motivation in virtual organizations, the innovation of complex knowledge products must depend heavily on the rapid exchange and transformation of knowledge between organizations using network information technology, so as to improve and update the knowledge resources of organizations. Therefore, knowledge sharing motivation encourages knowledge sharing behavior, which is also the key to innovation [24]. The social cognitive theory holds that behavior can be best explained by the ongoing interaction between cognitive and environmental factors. In practice, with a view to achieving job objectives, strong knowledge sharing motivation plays a critical role in enhancing employees' competence, and acquiring the knowledge and skills required to achieve employee creativity [25]. In virtual organizations, employees with strong knowledge sharing motivation realize that each individual cannot exhaust all knowledge and skills in the process of work alone, and knowledge sharing among members becomes necessary. Hence, they often seek to creatively complete tasks through knowledge sharing in different ways, and the core of this process is the motivation that determines the behavior. Effective knowledge sharing behavior will bring all kinds of expectations and beneficial results to individual employees. On the contrary, in order to minimize work barriers, employees' will, driven by the creativity vision, finds ways to enrich their working ability through knowledge sharing behavior, and keep pushing themselves and making them realize self-fulfillment in the process of knowledge sharing behavior. This process reveals the reason why employees with strong knowledge sharing motivation are more active in knowledge sharing. Therefore, employees with strong knowledge sharing motivation can deal with difficulties in work calmly and confidently through knowledge sharing behavior. To sum up, this paper proposes the following.

Hypothesis 2. Knowledge sharing motivation of virtual organization members has a positive influence on their knowledge sharing behavior.

One of the key factors for an organization to realize creative activities is the knowledge sharing behavior among employees. This psychological process and behavior practice are also important factors in organizational knowledge management and innovation, and employees' knowledge sharing behavior affects their creativity to a large extent [26]. Knowledge sharing among employees often produces better results and achievements than individuals and is more conducive to facing challenges, thus enhancing employee creativity [27]. Kessler and Chakrabarti [28] pointed out that knowledge sharing behavior helped to reduce the R&D cost of products and increase the speed of product innovation. Based on the research of a large multidivision electronics enterprise, Hansen [29] pointed out that the higher the knowledge sharing level of the project team, the faster the completion of the new product development. In addition, with the dissemination and sharing of explicit knowledge such as reports and technical documents among key stakeholders, new knowledge can be created, thus improving the system and function of products, and improving the quality of product innovation. Based on the case study of biotechnology and the medical engineering industry, Johnson and Lorenz [30] proposed that appropriate knowledge sharing could substantially shorten the innovation process and thus accelerate the speed of innovation in complex product R&D. Meanwhile, in the R&D of complex products, key stakeholders can share their experiences and lessons by means of in-depth face-to-face interaction and communication, so as to promote the generation of new knowledge, solutions, and ideas. Moreover, these new knowledge and solutions are not easily imitated by competitors, avoiding the rigidity of innovation capability, which is conducive to improving the innovation quality in the R&D of complex products [31]. To sum up, this paper proposes the following.

Hypothesis 3. Knowledge sharing behavior among virtual organization members has a positive influence on their creativity.

According to the literature review, there is a flood of literature on knowledge sharing motivation as an antecedent variable of creativity. However, the theoretical research and empirical test of knowledge sharing behavior as the mediating variable between them are still lacking. Employees with strong knowledge sharing motivation will take diversified paths to share knowledge. At work, they often accumulate experiences, knowledge, and skills through knowledge sharing to solve difficult problems and complete some challenging and complex tasks, thus enhancing their creativity. From another perspective, employees with strong knowledge sharing motivation can get access to social networks and knowledge resources, and enhance personal expression, in addition to higher creativity. These benefits will encourage employees to adopt more diversified, effective, and sustainable knowledge sharing behaviors. This process is conducive to inspiring new ideas related to the

task at work, which in turn promotes the creativity of employees [32]. Based on the findings available, we propose that knowledge sharing behavior plays a mediating role in the influence of knowledge sharing motivation on employee creativity, and employees' knowledge sharing motivation has an effect on creativity through their knowledge sharing behavior. Hence, this paper proposes the following.

Hypothesis 4. Knowledge sharing behavior mediates the influencing mechanism of employees' knowledge sharing motivation on creativity.

2.3. Moderating Effect of Self-Efficacy. Employees' knowledge sharing motivation does not simply have a direct effect on employee creativity; instead, its influencing and effectiveness mechanisms are situation-specific, namely, employees' knowledge sharing motivation features contingency in its influencing mechanism on creativity. Self-efficacy is the basis of human initiative. It involves the belief whether an individual can achieve results at work, including overcoming difficulties and challenges creatively, and completing tasks with confidence [33]. Self-efficacy reflects the direction of individual behavior and exerts a certain influence on individual behavior. However, the origin and final effect of individual behavior are common problems faced by scholars and managers, and this problem is most easily ignored in management practice. The cognition and research of efficacy have been extended to the micro level of organizational behavior and human resources. Subject to the research situation, most of the research on self-efficacy (if any) is limited to education. Self-efficacy is related to knowledge sharing behavior; employees' confidence in self-competence has a positive impact on their knowledge sharing behavior. Social psychologists tell us that knowledge sharing behavior can promote self-worth and reciprocal relationships among employees. Employees with high self-efficacy tend to be more efficient and diversified in knowledge sharing activities, and they are more confident, which keeps them more active in knowledge sharing [34]. Further analysis shows that employees with high self-efficacy are more active in knowledge sharing activities, and their knowledge sharing frequency and level are higher than those with low self-efficacy. Accordingly, we propose the following.

Hypothesis 5. Self-efficacy plays a moderating role in the influence of employees' knowledge sharing motivation on knowledge sharing behavior.

Based on the abovementioned information, this paper assumes that knowledge sharing behavior plays a mediating role in the mechanism of employees' knowledge sharing motivation and creativity, and the strength of this role depends on the specific situation of employees' perception of self-efficacy. It is found in literature review that self-efficacy is an important factor to mobilize individual creativity and will significantly affect an individual's creativity [35, 36]. Employees with higher self-efficacy are more active in knowledge sharing and show more positive attitudes and behaviors when encountering difficulties, thus presenting

higher creativity. From another point of view, employees with high self-efficacy are featured by a greater influence of knowledge sharing motivation on their knowledge sharing behavior, i.e., employees' knowledge sharing behavior plays a more conductive role in the influencing mechanism of knowledge sharing motivation on their creativity. On the contrary, employees with low self-efficacy are less active in knowledge sharing than those with high self-efficacy. Therefore, for employees with low self-efficacy, knowledge sharing motivation has a relatively weak influence on their knowledge sharing behavior. Accordingly, this paper proposes the following.

Hypothesis 6. Self-efficacy positively moderates the mediating effect of knowledge sharing behavior on the influencing mechanism between knowledge sharing motivation and creativity.

3. Questionnaire Design and Research Samples

3.1. Questionnaire Design. The questionnaire in this study is designed by collating the literature on knowledge sharing and innovation among members of virtual organizations [37, 38]. The questionnaire design has been based on the interview opinions of four scholars in the field of virtual organization and innovation management, and three operation executives from virtual organizations to modify the content and wording of the questionnaire.

The virtual organization is a dynamic alliance that shares core capabilities of enterprises through a network IT platform, characterized by innovative modularization and platform virtualization. Therefore, the samples in this study are mainly taken from industry enterprises with the popularization of network IT and convenient online connections such as e-commerce, information electronics, energy conservation and environmental protection, education, and cultural and creative products. Meanwhile, allowing for the essential attributes of innovation in virtual organizations, the sample selection has to meet the following conditions: (1) in the past three years, enterprises have had clear partners in product R&D, manufacturing, sales or service, and other value chain links, and worked with partners for innovation through online network technologies; (2) enterprises have access to outsourcing services in product or project R&D, manufacturing, marketing, and other innovative links; (3) enterprises feature a good environment for knowledge sharing.

The respondents of the questionnaire are mainly targeted at virtual organizations based on the R&D, publicity and development, and organization departments of enterprises that are most likely to share knowledge frequently, so as to ensure the filling level and quality of the questionnaire, and the accuracy and completeness of the questionnaire items. In this study, the questionnaires are mainly distributed in two ways: (i) paper questionnaires are distributed to the selected enterprises and collected on the spot; (ii) electronic questionnaires by Wenjuanxing, e-mail, and OA among others. Finally, 67 paper and 175 electronic questionnaires (totaling 242) were distributed, and 230 were collected. Excluding 18

questionnaires with incomplete basic information or unqualified sample selection, and 4 with incomplete item answers or too short filling time, 208 valid questionnaires were finally obtained, with a valid questionnaire recovery of 85.95%. In terms of sample distribution, 52.17% were males. In the age distribution, those under 35 accounted for 59.62%, those aged 35–55 for 15.38%, and those over 55 for 7.69%. In terms of education, those with a bachelor's degree or below accounted for 63.94%, and those with a master's degree or above accounted for 31.26%. The structural characteristics of samples are shown in Table 1.

3.2. Measure of Variables

- (1) Knowledge sharing motivation: in this study, the measuring items for knowledge sharing motivation of members in virtual organizations is mainly referred to the mature and valid index items developed by Tierney et al. [39] and combined with the actual survey; four items were used for measurement, as shown in Table 2.
- (2) Self-efficacy: in this study, self-efficacy was mainly measured by referring to the research results of Schwarzer et al. [37] and adapting into four items based on the actual situation, as shown in Table 3.
- (3) Knowledge sharing behavior: in this study, the knowledge sharing behavior was mainly measured by referring to the research results of Yi and Reychar [40, 41] and using four items, as shown in Table 4.
- (4) Creativity: in this study, the creativity of members in virtual organizations was mainly measured by referring to the scale developed by Kessler et al. and Zhou et al. [28, 42], and adapting into four items based on the actual situation, as shown in Table 5.
- (5) Control variables: since this research is based on the creativity of virtual organization members, four control variables are selected in this paper, including age, education, industry, and number of employees, in order to ensure the validity and integrity of variable relation study. (1) Age: to some extent, the age of employees reflects their innovation potential, knowledge and experience accumulation, and management level. For the convenience of quantitative analysis, "1" is defined as under 18, "2" as 18–25, "3" as 25–35, "4" as 35–55, and "5" as over 55. (2) Education: the level of education is an important organizational characteristic that affects the knowledge activities and innovation ability of organization members. In this paper, "1" stands for junior college diploma, "2" for bachelor's degree, "3" for master's degree, "4" for doctor's degree, and "5" for others. (3) Industry: the knowledge structure and scale of the industry is one of the important factors affecting the creativity of members. This study included industry in the measuring range, with "1" representing e-commerce, "2" information electronics, "3" energy conservation and environmental protection, "4" education, and "5" cultural and creative products. (4)

TABLE 1: Descriptive statistics of the samples.

Item	Samples (Nr.)	Percentage	
Age distribution	<18	8	3.85
	18–25	26	12.50
	25–35	90	43.27
	35–55	68	32.69
	>55	16	7.69
	Total	208	100.00
Education	Junior college	27	12.98
	Undergraduate	106	50.96
	Postgraduate	43	20.68
	PhD	22	10.58
	Others	10	4.80
	Total	208	100.00

TABLE 2: Measuring items for knowledge sharing motivation.

Independent variable	Measuring items	Source of items
Knowledge sharing motivation	I like to help others by sharing my knowledge	Tierney, Farmer, and Graen
	I believe knowledge sharing benefits both sides	
	I believe others will respect me for sharing knowledge	
	I believe knowledge sharing will strengthen my connections with others	

TABLE 3: Measuring items for self-efficacy.

Moderator variable	Measuring items	Source of items
Self-efficacy	I am confident in my knowledge sharing contents	Schwarzer, Bäßler, Kwiatek, Schröder, and Zhang
	I am confident that I can express my views clearly in knowledge sharing	
	I am confident that I can adhere to my ideal and achieve my goal	
	I can solve most of the problems encountered in knowledge sharing if I put in the effort	

TABLE 4: Measuring items for knowledge sharing behavior.

Mediating variable	Measuring items	Source of items
Knowledge sharing behavior	I often share knowledge within the organization	Reychav and Weisberg; Yi
	I take a positive attitude towards knowledge sharing within the organization	
	I will keep an eye on and participate in the follow-up matters in knowledge sharing	
	I often get involved in multiple types of knowledge sharing rather than a specific one	

TABLE 5: Measuring items for creativity.

Dependent variable	Measuring items	Source of items
Creativity	I am good at using new methods to improve work efficiency	Scott, Bruce Zhou, and George
	I am good at making plans and goals for new methods	
	I am good at taking the right opportunity to demonstrate creativity at work	
	I am good at setting new goals on my past achievements	

Enterprise scale: the enterprise scale is related to the scale and structure of knowledge village, and also demonstrates the ability that enterprises can provide different financial and human resources to deal with an uncertain environment and carry out product innovation. Therefore, this paper takes the number of employees as an important reference index of the enterprise scale, with “1” representing less than 100 employees, “2” representing 100–500 employees, “3” representing

501–1,000 employees, “4” representing 1,001–5,000 employees, and “5” representing more than 5,000 employees. The conceptual model is shown in Figure 1.

4. Result Analysis

4.1. Correlation Coefficient. There is a strong positive correlation between knowledge sharing motivation of virtual organization members and knowledge sharing behavior

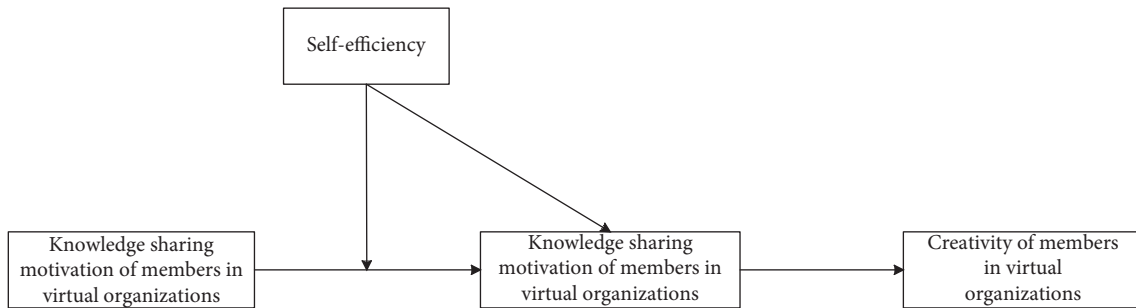


FIGURE 1: Conceptual model.

($r=0.532$, $p<0.01$) and employee creativity ($r=0.527$, $p<0.01$), and the knowledge sharing behavior is correlated with employee creativity ($r=0.561$, $p<0.01$). Then, the common method variance (CMV) test, and reliability and validity analysis are performed to test the hypothesis more accurately.

4.2. CMV Test. The questionnaire survey of this study is completed independently by each employee. To avoid the common method variance, this study uses Harman's single factor test in SPSS 19.0 to make exploratory factor analysis to all items of the questionnaire and derives the first principal component by orthogonal rotation using the maximum variance method, with a total variance of 19.36, free from any CMV.

4.3. Reliability and Validity Analysis. In this study, the Internal Consistency Index is used to test the reliability. Cronbach's α of knowledge sharing motivation, knowledge sharing behavior, employee creativity, and self-efficacy are 0.871, 0.898, 0.850, and 0.883, respectively, with reliable reliability. The main fitting indexes of the confirmatory factor analysis results for the 4-factor model are as follows: $\chi^2/df=1.120$, GFI=0.943, TLI=0.994, CFI=0.995, and Rmse=0.024.

4.4. Hypothesis Testing

4.4.1. Mediating Effect of Knowledge Sharing Behavior. Through four steps, this study examines whether knowledge sharing behavior plays a mediating role between knowledge sharing motivation and creativity of members in virtual organizations. Model 2 in Table 6 shows that there is a significant positive effect between knowledge sharing motivation and behavior of members in virtual organizations ($\beta=0.517$, $p<0.01$). Subject to the control variables (age, gender, and education), knowledge sharing motivation of virtual organization members can explain 26.0% variation of knowledge sharing behavior. Thus, hypothesis H2 is supported. According to the results of regression analysis of Model 4, the knowledge sharing motivation of members in virtual organizations has a significant positive effect on their creativity ($\beta=0.528$, $p<0.01$), so H1 is tenable. The regression results of Model 5

show that knowledge sharing behavior influences the employee creativity positively ($\beta=0.555$, $p<0.01$), and hypothesis H3 is tested. On the basis of Model 4, the addition of knowledge sharing behavior into Model 6 has significantly affected the employee creativity ($\beta=0.381$, $p<0.01$), and the influence of knowledge sharing motivation is decreased from 0.528 ($p<0.01$) to ($\beta=0.332$, $p<0.01$). This indicates that knowledge sharing behavior plays a partial mediating role between knowledge sharing motivation and employee creativity; therefore, hypothesis H4 is tested.

4.4.2. Moderating Effect Test. This study proposes in hypothesis H5 that the self-efficacy of virtual organization members has a positive moderating effect on the relationship between knowledge sharing motivation and behavior of members. In this study, Model 7 of the SPSS 19.0 process test was used for analysis. As shown in Table 7, the R^2 value of Model 3 increased with respect to Model 1, and the interaction term of knowledge sharing motivation and self-efficacy had a significant positive effect on knowledge sharing behavior ($\beta=0.125$, $p<0.01$). This indicates that the self-efficacy of virtual organization members has a positive moderating effect on the relationship between knowledge sharing motivation and behavior of members. Thus, hypothesis H5 is tenable. The global hypothesis model was further tested in this study, with the results shown in Table 8; high and low standard deviations were used to illustrate the coefficient changes of the moderator variables. In case of low self-efficacy, the moderated mediating effect was 0.162, and the confidence interval did not contain 0, indicating that the mediating effect was valid; in case of median self-efficacy, the moderated mediating effect was 0.204, and the confidence interval did not contain 0, indicating that the mediating effect was valid; in case of high self-efficacy, the moderated mediating effect was 0.244, and the confidence interval did not contain 0, indicating that the mediating effect was valid. Therefore, it is proved that self-efficacy (moderator variable) has a significant positive moderating effect on the relationship between knowledge sharing motivation (independent variable) and knowledge sharing behavior (mediating variable), and even a positive moderated mediating effect. Thus, H6 is tenable.

TABLE 6: Regression analysis on the mediating effect of knowledge sharing behavior.

Variable	Knowledge sharing behavior			Employee creativity		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Age	0.193**	0.122*	0.159*	0.086	0.052	0.040
Gender	-0.035	0.005	0.072	0.113	0.092	0.111*
Education	0.049	0.073	0.065	0.089	0.037	0.061
Knowledge sharing motivation		0.517**		0.528**		0.332**
Knowledge sharing behavior					0.555**	0.381**
F	3.066*	21.906**	2.188	21.886**	24.407**	27.205**
R ²	0.043	0.303	0.031	0.302	0.326	0.404
ΔR ²	0.043	0.260	0.031	0.271	0.295	0.373

The symbol * indicates P<0.05; the symbol ** indicates P<0.01.

TABLE 7: Moderating effect of self-efficacy.

Variable	Knowledge sharing behavior		
	Model 1	Model 2	Model 3
Age	0.086	0.085	0.118*
Gender	0.113	0.113	0.023
Education	0.089	0.089	0.115
Knowledge sharing motivation	0.528**	0.528**	0.557**
Self-efficacy		0.006	-0.023
Knowledge sharing motivation * self-efficacy			0.125**
F	21.886**	17.425**	16.083
R ²	0.302	0.302	0.325
ΔR ²	0.302	0.000	0.023

The symbol * indicates P<0.05; the symbol ** indicates P<0.01.

TABLE 8: Moderated mediating effect.

Mediating path	Self-efficacy	Effect	SE	LLCI
Knowledge sharing motivation > knowledge sharing behavior > employee creativity	M-SD	0.162	0.046	0.081
	M	0.204	0.051	0.112
	M + SD	0.244	0.065	0.127

5. Conclusions

5.1. Main Conclusions. This paper explores the disparate impact of knowledge sharing motivation of members in virtual organizations on their creativity. Self-efficacy plays a positive moderating role in the relationship between knowledge sharing motivations and knowledge sharing behaviors, and self-efficacy positively moderates the mediating role of knowledge sharing behaviors in the relationship between knowledge sharing motivations and creativity. The results show that (1) knowledge sharing motivation of members in virtual organizations has a positive influence on their creativity. Knowledge sharing motivation is the direct antecedent of knowledge sharing behavior. Regardless of the age, education, enterprise scale, and industry, knowledge sharing motivation always has a significant positive correlation with knowledge sharing behavior. This indicates that the stronger the knowledge sharing motivation is, the more likely it is to be transformed into knowledge sharing behavior. The existing studies and analyses on the antecedents of employee creativity are mostly done from the perspectives of personality traits and social interaction. This study

summarizes the variable of knowledge sharing motivation to provide a new research perspective for employee creativity, and serves as a supplement to previous studies. (2) Knowledge sharing behavior plays a mediating role in the relationship between knowledge sharing motivation and creativity. This paper has applied knowledge sharing behavior to influence the knowledge sharing motivation of organizational members on creativity and verified the mediating effect of knowledge sharing behavior in the influence process of knowledge sharing motivation and creativity. This provides a new theoretical perspective to explain the influencing mechanism of knowledge sharing motivation. (3) The empirical analysis results show that self-efficacy positively moderates the relationship between knowledge analysis motivation and behavior of virtual organization members, and also positively moderates the mediating effect of knowledge sharing behavior on knowledge sharing motivation and creativity. Employees with strong self-efficacy have stronger motivation to engage in more active knowledge sharing activities. According to research findings, compared with those with weak self-efficacy, employees with strong self-efficacy are better at transforming knowledge

sharing motivation into creativity through knowledge sharing behavior besides stronger knowledge sharing motivation and more active knowledge sharing behavior.

This paper provides new ideas on how to effectively improve the creativity of virtual organization members. (1) The results of this study are helpful to promote organizations to pay full attention to the knowledge sharing motivation and to carry out targeted long-term follow-up observation. The needs of members within an organization are diverse and constantly changing, so the motivations for members to share knowledge are varied, either for financial returns, personal growth, or both. As employees become more knowledgeable, their demand levels of knowledge sharing motivation are also rising, mainly manifesting in the following two aspects: first, whether the value of knowledge sharing matches the return; second, whether their knowledge can be demonstrated and recognized at work through knowledge sharing. The members in virtual organizations and their needs and knowledge sharing motivations may be different from those of ordinary employees; thus, business managers should pay close attention. Therefore, the design of the corporate knowledge sharing incentive mechanism should be targeted to meet the needs of employees at different levels as far as possible, so that employees' knowledge sharing behavior is activated by stimulating their knowledge sharing motivation more scientifically in an effort to effectively facilitate their creativity. (2) The results of this study encourage virtual organizations to focus on their members' knowledge sharing behavior. In the era of a knowledge economy with fierce competition, organizations can consider giving appropriate incentives to keep employees more active in knowledge sharing, in order to enhance the environmental adaptability of knowledge sharing behavior in organizations and stimulate the creativity of members. In addition, the identification and construction of situations conducive to the knowledge sharing behavior among employees is also the focus that organizations and organizational managers have to pay attention to. (3) The findings also point out the important moderating effect of self-efficacy in the mechanism of this model. Organizations are required to examine the changes in self-efficacy of members and pay reasonable attention to their knowledge sharing motivation based on the degree of self-efficacy, so as to achieve a good control over employees' knowledge sharing behavior. It can be reasonably inferred from the findings that employees' self-efficacy directly affects their knowledge sharing ability. Their knowledge sharing ability is mainly subject to individual and organizational factors. Individual factors mainly refer to the employees' communication skills, while organizational factors mainly include enterprise hardware facilities such as information system and organizational culture. Business managers are expected to pay more attention to employee training in terms of communication skills and team spirit, constantly improving the enterprise network information system, and strive to create a learning organization culture that encourages knowledge sharing. Therefore, how to shape an organizational climate for knowledge sharing, overcoming the employee barriers to knowledge sharing, and comprehensively improving the self-efficacy of employees in knowledge sharing

activities are important steps to promote comprehensive knowledge management of enterprises.

5.2. Future Research. From the perspective of process philosophy, any study is the continuation of previous studies and also the basis for follow-up studies, which has promoted the gradual perfection of the theory. Despite some progress, this study is still suffering from many limitations to be supplemented by future research, subject to the research time, funds, and the author's ability.

First, all variables are measured by self-answering, which mainly depends on the subjective attitudes and perceptions of the respondents. Although management advice has been taken into account in the questionnaire design, there is no management feedback or actual consideration of these variables in collecting the questionnaire. Therefore, there may be some errors in data sources. A variety of parallel research methods may be tried to further improve the reliability and validity.

Second, this study introduces self-efficacy as a moderator variable, but fails to refine it due to the limited space, so the concept is somewhat abstract, e.g., employees' self-perceived knowledge sharing ability and level. This variable can be further refined in subsequent studies.

Data Availability

The data used to support the findings of this study are included within the article.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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