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## Unique Contextual Conditions Affecting Coworker Knowledge Sharing and Employee Innovative Work Behaviors

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### ABSTRACT

Drawing on a componential model of creativity, this study examines how coworker knowledge sharing drives employee innovative work behaviors in the workplace. Furthermore, the moderating effect of situational factor (supervisor knowledge sharing) and personal factor (employee thriving) were analyzed to explore the unique contextual conditions which could influence this relationship. A sample of 374 employees across a variety of jobs and industries was used to test these relationships. Supervisor knowledge sharing was hypothesized to dampen, while employee thriving at workplace was hypothesized to strengthen the positive relationship between coworker knowledge sharing and employee innovative work behaviors. Results of the hierarchical multiple regression, plots, and slope analysis confirmed the hypothesized relationships. The theoretical and practical implications for employee innovative work behavior at work are discussed.

## Las condiciones contextuales singulares que afectan al intercambio de conocimientos entre los trabajadores y a los comportamientos laborales innovadores

### RESUMEN

Apoyándose en el modelo de componentes de creatividad, este estudio analiza de qué manera el intercambio de conocimientos entre los empleados produce comportamientos laborales innovadores en el trabajo. También se analiza el efecto moderador del factor situacional (intercambio de conocimientos de los supervisores) y del factor personal (progreso de los empleados) con el fin de explorar las condiciones contextuales singulares que pueden afectar a esta relación. Se dispuso de una muestra de 374 empleados de distintos puestos y sectores para poner a prueba estas relaciones. Se planteó la hipótesis de que el intercambio de conocimientos de los supervisores se desdibujaría mientras que el progreso de los empleados en el trabajo fortalecería la relación positiva entre el intercambio de conocimientos de los trabajadores y los comportamientos innovadores. Confirmaron estas supuestas relaciones los resultados de la regresión múltiple, gráficos y análisis de pendientes. Se abordan las implicaciones teóricas que puede conllevar para el comportamiento innovador en el trabajo.

Researchers have well established the importance of innovative work behavior (IWB) in the context of organizational workplace setting. IWB refers to the intentional introduction and implementation of novel ideas in order to suggest new solutions to existing problems, to improve products/services, and to proactively explore new opportunities (De Jong & Den Hartog, 2010; Dong & Hawryszkiewycz, 2019). In order to align their business models in accordance with the current market needs, organizations need to foster and adopt innovative solutions and creative ideas (Javed et al., 2017). Innovation has long been widely accepted as a crucial factor in organizational success. One of the most fundamental ways for organizations to become innovative is to capitalize on their

employees' IWB thus, ensuring organizational continuous success and long-term effectiveness. The concept of IWB advocates that employees contribute to their organization's success by employing their innovative capabilities for generating novel ideas, and further by implementing them for the improvement of organizational procedures and/or their product/services (Hom & Xiao, 2011; Yuan & Woodman, 2010). It is, therefore, vital for organizations to identify and promote the factors that enhance individuals' IWB at workplace.

Organizations are increasingly adopting flatter hierarchies with a more team-based orientation. Therefore, the role of co-workers as crucial catalyst that can influence an individual's behaviors at workplace has recently been recognized (Halbesleben & Wheeler,

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2015). Chiaburu and Harrison (2008, p. 1089) state that co-worker influence is critical in making "a case for greater attention to lateral relationships in organizational research." Similar literature has identified that co-worker attributes of support, trust, competition, or conflict affect the attitudes, behaviors, and performance of focal employees (Chiaburu & Harrison 2008; Chiaburu et al., 2013). According to Thompson (2016), employees devote almost one-third of their lives to their workplace, therefore, acquiring valuable support from their co-workers is pivotal. Coworker support is critical for IWB due to risk, uncertainty, and resistance that are inherited in innovative endeavors. When an idea is implemented, the support of coworkers to build social approval in favor of the idea and decrease resistance towards the idea plays a significant role.

Knowledge is regarded as the most valuable asset of an organization, because it contributes to individual and organizational success. Dong and Hawryszkiewycz (2019) stresses the growing importance of knowledge sharing among individuals of an organization, which in turn, enhances the innovative potential of its employees, thus resulting in increased knowledge creation and innovative potential. Knowledge sharing is a cyclical process in which individuals internalize shared knowledge and then transfer it to others through externalization (Shujahat et al., 2019). As a result, new knowledge is created when external sources of knowledge and existing knowledge combine together, and new information about products, services, and processes would lead to better innovative performance of individuals (Dong et al., 2017). Similarly, the componential model (Amabile & Pratt, 2016) presents job-related knowledge and creative problem-solving skills as necessary yet not sufficient condition for individual-level innovation. As communal knowledge sharing between coworkers are a potential source of task-specific and job-relevant information, as well as acquiring of innovative problem-solving capabilities, the primary focus of the current study is to investigate the effect of coworker knowledge sharing (CKS) on employees' IWB. From this perspective, employees may engage in IWB more often when their coworkers share their unique information and know-how with them. Since knowledge is one of the necessary conditions for producing novel and useful ideas (Amabile & Pratt, 1996), we assume a positive relationship between coworker knowledge sharing and employees' IWB.

Based on an interactional perspective of creativity, prior research in this realm has highlighted the importance of considering specific contextual factors (e.g., individual and/or situational factors) to understand the complexity of creativity (Liu et al., 2016). Even though the knowledge sharing abilities of coworkers may be useful for domain relevant skills, their effects on employees' IWB may differ depending upon unique contextual factors. Thus, in the current study, we examine the critical situational and personal factors which could alter the potential relationship between CKS and IWB. In today's team-based organizations, employees and coworkers interact frequently and both are simultaneously influenced by supervisors. Among various situational factors, we focus on exploring a specific form of supervisor support that is supervisor knowledge sharing (SKS), because of its relevance and importance to individual innovation. A supervisor's role is critical to increase an employee's IWB (Hughes et al., 2018). Since the effects of supervisor and coworker support are distinctive (Ng & Sorensen, 2008), this study suggests that examination of the interaction effects of coworker and supervisor knowledge sharing would help us unearth the true effects of CKS on IWB. The anchoring position and overarching influence of a supervisor may suggest a stronger effect of SKS as compared to that of CKS. Therefore, we assume that the positive impact of CKS on IWB may change depending on the level of SKS. Additionally, since supervisors can, directly and indirectly, influence IWB, therefore, investigating the mechanism of supervisor support is essential to understand how supervisors facilitate IWB (Amabile & Pratt, 2016).

Prior research has also highlighted the importance of individual

factors associated with creativity and innovation. For example, Da Costa et al. (2015) in a meta-analysis reported that emotional intelligence, divergent thinking, openness to experience, creative personality, intrinsic motivation, positive affect, and androgyny are related to creativity. Moreover, they found that age, intelligence, extraversion, self-efficacy, and extrinsic motivation are associated with an employee's innovation. Similarly, Anderson et al. (2014) in their results report that employees with a high level of creative personality, openness, or intrinsic motivation demonstrate high level of IWBs. Some theorists also suggest that knowledge sharing is also dependent upon the varying abilities and motives of its recipients as IWBs rarely emerge in isolation and social contexts are critical (Kim et al., 2015). Although coworker feedback is known to enhance employee IWB (Christensen et al., 2015; Eva et al., 2019), we still know relatively little about how coworkers affect employee's IWB. Thriving is an individual factor which is self-regulatory in nature, helping employees to develop in a more positive direction at a personal level (Spreitzer et al., 2012). High thriving individuals would potentially take coworkers' knowledge sharing positively to develop new knowledge and skills that might enhance the innovative capabilities of individuals. Therefore, we suggest that individuals' thriving at work could have a considerable influence on the effect of CKS on employees' IWB, as the ability of an employee to utilize new knowledge might differ based on their type of thriving at work.

This study has three main objectives. First, drawing on a componential model of creativity, we intend to integrate knowledge management and innovation literature by examining the main effect of CKS on IWB at the individual level. Second, by highlighting the importance of taking an interactional perspective to understand IWB, this study explores the unique contextual conditions which could influence the relationship between CKS and IWB. Specifically, we examine the role of SKS as a situational factor that could possibly interact with CKS to increase employees' IWB. Third, in terms of a personal factor, we suggest that the relationship between CKS and employees IWB depends on thriving at work of the focal employee. By addressing these critical issues, this study intends to contribute to the advancement of factors affecting IWB.

## Review of Literature and Hypotheses Development

IWB is the ability of an individual to adopt, implement, and/or make use of creative ideas to solve problems in his/her work role, work unit, and/or organization. Janssen (2005) states that IWB is the individual behavior that manifests before and during the implementation of a creative idea. Examples of such behaviors include search of new technology or process, suggesting new ways of achieving goals, finding resources considered necessary to implement new ideas, and application of novel working methods to benefit job performance, work unit, or organization. IWB has long been considered to be a crucial factor in facilitating innovation in an organization (Isaksen & Akkermans, 2011), as IWB is considered to be "a voluntary willingness by employees to perform on-the-job innovation" (Bysted & Jespersen, 2014, p. 218).

## Coworker Knowledge Sharing and Innovative Work Behavior

Knowledge is an important resource to solve problems, propose new solutions, create core competencies, learn new techniques, and initiate positive change (Liao et al., 2009). In organizations, knowledge often is "embedded not only in documents or repositories but also in organizational routines, process, practices, and norms" (Ma et al., 2008, p. 98). It is a valuable resource that individuals share with each other, and when shared regularly and frequently becomes an organization's property. Although knowledge is powerful and essential, it must be exchanged successfully to make it useful.

In organizations, knowledge management practices explore how knowledge is created, stored, shared, and disseminated. Knowledge sharing is the foundation and most critical phase of knowledge management. Knowledge sharing is characterized as an individual level construct as knowledge is stored in an individual's mind and it is their discretion as to how and when to utilize or share it. Innovation is mostly dependent on knowledge diversity as well as employees' ability to take the initiative of sharing their knowledge with others.

Coworkers, in particular, can provide useful knowledge and information that could be helpful to enhance IWB. Kim et al. (2015) call for further research on the effect of CKS and SKS on creative endeavors of individuals at the workplace. Support of coworkers is positively associated with an employee's creativity (Zhou & Hoever, 2014). Zhou and George (2001) have reported that employees who experienced high job dissatisfaction demonstrated more creativity when they had coworkers' help and support. According to Chiaburu and Harrison (2008), coworkers are better aware of the tasks and challenges faced by focal employees, therefore, their knowledge and expertise could help focal employees to perform more efficiently and effectively. Bakker et al. (2004) applied the job resource perspective to identify coworkers as a valuable job resource whose knowledge sharing contributions could help focal employees to improve their job performance. Coworker support is a type of social support received by employees in organizational settings; it is the extent to which employees believe that their coworkers would support them in work-related tasks and challenges.

As mentioned earlier, since employees spend one-third of their lives at workplaces, and in some cases they spend more time with coworkers than with their families, supportive coworkers could improve the overall wellbeing of focal employees and help them reduce their work stress (Halbesleben & Wheeler, 2015). Coworker support enable employees to be more productive, creative, and innovative, especially when they are faced with difficult tasks and situations. CKS is a critical type of coworker support that might facilitate generation and implementation of new ideas. As focal employees and their coworkers work in similar organizational settings, they are expected to share knowledge as a norm.

There are reasons to believe that CKS enhances employees' IWB. First, when coworkers share knowledge and information, a focal employee gets more diverse perspectives to solve problems. This further enhances employees' likelihood of adopting unconventional approaches to generating novel responses (Amabile & Pratt, 2016). Without shared knowledge/information, Amabile and Pratt (2016) argue that employees have limited horizon to suggest novel and acceptable solutions. Second, coworker knowledge is highly relevant and it exactly addresses issues that the organization is facing. Chiaburu and Harrison (2008) suggest that coworkers are an integral part of social environment and are in immediate access to organizational employees. Their knowledge is easily accessible and employees find it convenient to have brain storming sessions with them. Furthermore, during discussions, better and constructive ideas evolve because coworkers possess technical knowledge and perspectives that are needed by a focal employee. Third, to implement ideas, the initiator of the idea needs strong social support and trusting relationships. Ideas become successful if they are executed with minimum resistance. Therefore, those who initiate an idea in the workplace need minimum resistance to make it successful. Coworker knowledge sharing is based on strong interpersonal relationships resulting in a supportive work environment that encourage employees to exchange knowledge and expertise, actively and constructively, which grants them the freedom to support each other's ideas. Fourth, sharing relevant knowledge can nurture a positive climate between focal employees and coworkers who share this knowledge. This helps in alleviating fear of failure in organizational employees. On the other hand, as one also uses knowledge to maintain expert power within an organization, most employees are often unwilling to share their knowledge for fear

of losing their competitive advantage at the workplace (Kim et al., 2015). This hoarding of knowledge/information from coworkers leads to a feeling of distrust amongst them (Černe et al., 2014). When knowledge is shared by someone, it is interpreted as a benevolent behavior, thus increasing interpersonal trust among peers. In such an environment, employees are more likely to offer new ideas or novel solutions, with less fear of being embarrassed or dejected in case the ideas are eventually ineffective. Previous research has shown how information exchange develops trusting relationships, which leads to increase IWBs (Gong et al., 2012). Fifth, coworker knowledge sharing reflects the norm of reciprocity from repeated social interactions resulting in reciprocated helping activity, responsibility, or obligation to reciprocate by creating and implementing new ideas. Based on the above arguments, we expect the following:

*Hypothesis 1:* Coworker knowledge sharing is positively related to employees' innovative work behavior.

### The Moderating Effect of Supervisor Knowledge Sharing

By taking an interactional perspective, we first discuss the situational factor in describing the boundary conditions of the influence of coworker knowledge sharing on IWB. Although CKS may significantly influence an employee's IWB, this sharing of knowledge by a coworker may depend on various situational factors. One such situation factor may be leaders/supervisors themselves. As they are powerful organizational actors, their behavior would critically moderate the relationship between CKS and IWB. Since supervisors and coworkers are key actors in the workplace, it is worthwhile to examine the interaction effect of CKS and SKS on IWB. Thus, this research specifically examines the moderating role of supervisor knowledge sharing and predicts that knowledge shared by these two sources, that is, supervisor and coworkers, will play complementary roles to enhance IWB of focal employees.

Supervisors exert substantial influence over their subordinates by virtue of their legitimate authority and control over resources (e.g., budget and scheduling) and outcomes (e.g., performance appraisal and salary) that are important for employees (Eisenberger et al., 2002). Receiving support from coworkers may prove detrimental to a focal employee's morale if supervisors fail to advise on how to allocate resources to those decisions in the context of the flow of work within organizational units. Although knowledge/skills shared by coworkers are useful, their effect on focal employees' IWB can vary. Supervisor support offers distinct resource advantages to a focal employee over his or her coworkers. Given that members in a group form distinct exchange relationships with their supervisor, they view supervisor support as a desirable yet limited resource (Dineen et al., 2006). Therefore, when employees receive knowledge from supervisors, they think of it as a favorable treatment and tend to appraise the situation as resource abundant and feel indebted. They take this knowledge more relevant, realistic, and congruent with organizational goals. When a supervisor shares knowledge, he/she has a trade-off to manage. Supervisors often share knowledge about the ways to accomplish tasks. They are more concerned to meet targets that are usually short term and allocate greater resources to achieve these targets. Therefore, they share knowledge that is focused on plans to improve operational processes and bring efficiency in task related performance. Supervisors might inculcate fear among employees who want to engage in IWB due to ideas, information, knowledge, and dynamic perspectives from coworkers. Employees then strive for a balance between what coworkers share and what their supervisors share. They might feel a contradiction because coworkers would share knowledge without worrying too much about resources needed for the new ideas. However, supervisors think about resources and might be stringent towards allocating resources to these ideas. This would lead to weakening the effect of CKS on IWB.

**Szulanski (2000)** states that usefulness of shared knowledge largely depends on the acceptance and assigned value by recipients. Furthermore, since supervisors are in a more authoritative position to dictate critical workplace decisions, due to their relevant and up to date knowledge, they may very well counter the positive effect of knowledge shared by coworkers on employees' IWB. Innovation is not only about generating an idea but actually realizing and implementing it in organizational settings. Employees would feel better supported in case of implementing innovative ideas if they take forward information and knowledge shared by their supervisors. Due to the risky nature of individual innovation (uncertainty associated with the outcome of the idea), employees need support from their supervisors in executing the idea. Knowledge shared from a supervisor might be perceived as less risky and more contemporary in nature as supervisors have a broader perspective about potential opportunities and threats. They are well-informed about current organizational strategies as well as plans of the competitors. Their knowledge about future demands of their respective departments and organizations is more refined and relevant as compared to subordinates working in their departments. Therefore, employees might perceive supervisors' knowledge to be more authentic, practical, novel, realistic, and specific as compared to their coworkers' (Ng & Sorensen, 2008).

Furthermore, most of the times employees may only be able to draw similar knowledge, pertaining to various organizational tasks, from their coworkers and supervisors alike. This overlap may lead to knowledge redundancy for recipients and thus utilizing both sources for knowledge/information may not always be incrementally beneficial. This makes supervisor support more sought after as compared to coworker support (e.g., Ng & Sorensen, 2008). In fact, in their meta-analysis, Ng and Sorensen (2008) demonstrated a stronger relationship between supervisor support and employees' increased job satisfaction, increased affective commitment, and lowered turnover intention as compared to their coworker support. From the above arguments and related findings, we assert that the positive relationship between CKS and IWB would be attenuated when the level of knowledge shared by supervisors is high rather than when it is low. Thus we expect the following:

*Hypothesis 2:* Supervisor knowledge sharing moderates the relationship between coworker knowledge sharing and employee's IWB such that this relationship will be weaker when supervisor knowledge sharing is high.

### The Moderating Effect of Thriving at Work

Spreitzer et al. (2005, p. 538) define thriving at work as the "psychological state in which individuals experience both a sense of vitality and learning at work". Nix et al. (1999) define vitality as "feelings of energy and aliveness and a zest for work". Similarly, Edmondson (1999) defines learning as "the acquisition of skills and knowledge to build confidence and capability". Individuals who are thriving at work are not only constantly learning new things, but they are also highly energetic, motivated, and committed to their work roles. Vitality and learning go hand in hand for employees who want to thrive at work. Thriving individuals gauge their progress through self-regulation (Porath et al., 2012). It also helps employees to adjust their context at work as well as to promote their personal growth as an adaptive function. Spreitzer et al. (2005) suggest that employees having higher thriving gauge their development much better than those who have lower thriving. They not only emphasize on improving short-term effectiveness but also strive to increase long-term adaptability to their work contexts. Thriving employees do have an intrinsic motivation to engage in activities and behaviors that are more meaningful and purposeful to them, such as creativity and innovation (Amabile & Pratt, 2016; Anderson et al., 2014).

The vitality dimension of thriving makes employees passionate

about what they do. When coworkers share knowledge, higher thriving individuals would take that knowledge as an opportunity to further develop their own competencies and a sense of personal growth (Spreitzer et al., 2012). Feeney and Collins (2015) assert that the aspects of growth, learning, meaningfulness, development, and prosperity are integral to the concept of thriving at work. It lets employees learn new things as well as seek new opportunities; instead of believing in status quo, they try to proactively engage in exploring new ways of doing things while improving existing systems (Lerner et al., 2011). Knowledge and information from coworkers are taken as opportunities to learn, grow, prosper, and develop when thriving at work is high. Moreover, Kark and Carmeli (2009) argue that high vitality individuals are more prone to creative work behavior. Similarly, Carmeli and Spreitzer (2009) demonstrated that thriving at work increases employees' IWB. Employees would thus try to take this opportunity to generate and implement novel and practical ideas.

Thriving employees exhibit superior performance due to their continuous learning ability when interacting with their peers (Paterson et al., 2014; Spreitzer et al., 2012). According to Zhou and Hoever (2014), success of such interactions is determined by coworkers who share their knowledge with focal employees. Knowledge sharing by coworkers acts as a facilitator for thriving employees aspiring for enhanced performance as they are continuously learning from their interactions with these coworkers (Gerbasi et al., 2015). Furthermore, according to Spreitzer et al. (2012), high thriving employees are likely to be more resilient. Thriving at work enables employees to acquire knowledge which contributes towards their continued confidence building. This resulting knowledge accumulation increases these employees' abilities to spot more organizational opportunities for improving their organizational processes (Magni & Maruping, 2013). Furthermore, these employees have high work engagement, coupled with intrinsic motivation and willingness, to solve organizational issues and to improve team performance (Zhang & Bartol, 2010). Therefore, it enhances employees' willingness to challenge current status quo for organizational improvement, as well as increasing their capabilities for implementation of new ideas. Therefore, it is reasonable to propose that the relationship between CKS and IWB further strengthens when thriving at work is high rather than low.

*Hypothesis 3:* Thriving at work moderates the relationship between coworkers' knowledge sharing and employees' innovative work behavior, such that this relationship will be stronger when levels of employees' thriving at work are high rather than when they are low.

### Method

#### Participants and Procedure

Descriptive research is appropriate for the current study as it collects information that explains respondent's beliefs, knowledge, attitude, and behavior. Data was collected from 15 organizations in Pakistan. Participating organizations cover manufacturing, financial, telecommunications, and hotel industries. To mitigate potential concerns of common method bias, a brief was added to the survey questionnaire ensuring all the participants that their participation was voluntary. We designed, developed, and administered the questionnaires to employees and their immediate supervisors. Since it is not practical to introduce every subject into research, convenience sampling was utilized for data collection according to various conditions including accessibility and availability of respondents (Dörnyei, 2007). A self-administered and structured questionnaire was used as an instrument for primary data collection. The questionnaire consists of 28 items with a 5 point Likert scale from *strongly disagree* (1) to *strongly agree* (5). A total of 482 employees and 109 department supervisors were

**Table 1.** Correlation among Study Variables and Corrected Correlations between Dependent, Independent and Moderating Variables

	Gender	Age	Education	CKS	SKS	Thriving	IWB
Gender							
Age	.062						
Education	-.072	-.250**					
CKS	.021	.147**	.015	(.783) <sup>1</sup>			
SKS	.108*	.110*	-.093*	.534**	(.790) <sup>1</sup>		
Thriving	-.050	.067	.124**	.614**	.399**	(.848) <sup>2</sup>	
IWB	.049	.131**	-.059	.600**	.394**	.526**	(.886) <sup>2</sup>
Corrected correlations for IWB				.681	.458	.584	

Note. <sup>1</sup>Spearman-Brown coefficient equal length. <sup>2</sup>Spearman-Brown coefficient unequal length. IWB = innovative work behavior; CKS = coworker knowledge sharing; SKS = supervisor knowledge sharing.

\* $p < .05$  (2-tailed), \*\* $p < .01$  (2-tailed).

requested to partake in the survey. Matched code technique was utilized to classify each employee's responses with that of his/her supervisor. Finally, 374 responses were received from employees (a response rate of 77.5%) and 81 from supervisors (a response rate of 75.7%). A final sample of 362 employees and 78 supervisors was obtained after matching their responses. The average number of employees responding per department was 4.64 (a range of 3 to 7 members). Most employees in the sample were male (67.9%) and had at least a bachelor degree (56.3%). The mean age of respondents was 34.7 years ( $SD = 8.9$ ). They worked on average 3.2 years in the current work team. The majority in the sample had an employment contract on a permanent basis (52.6%). To minimize potential same-source bias effects (Podsakoff et al., 2003), the outcome variable of the current model, employees' IWB, was rated by their direct supervisor, while other variables were rated by the employees.

## Measures

**Innovative work behavior**, developed by De Jong and Den Hartog (2010) was used in this study. Through ten-item scale (e.g., "How often does this employee search out new working methods, techniques, or instruments?"), supervisors evaluated their subordinates' IWB. Cronbach's  $\alpha$  was .87 for IWB.

**Coworker knowledge sharing** was measured with a seven-item scale developed by Srivastava et al. (2006). To evaluate the level of knowledge sharing from respondents' coworkers, we changed the referent from "managers" to "coworkers". Example of an item is "Coworkers in our team share a lot of information with one another." Cronbach's  $\alpha$  was .89.

**Supervisor knowledge sharing** was measured with a seven-item knowledge sharing scale developed by Srivastava et al. (2006). The referent was changed from "managers" to "supervisors". An example of the item is "Supervisors in our team share lot of information with employees." Cronbach's  $\alpha$  was .85 for supervisor knowledge sharing.

**Thriving** was measured using a ten-item scale developed by Porath et al. (2012). They conceptualized thriving through two factors, i.e., learning (e.g., "At work I continue to learn more and more as time goes by") and vitality (e.g., "At work I have energy and spirit") with each factor having 5 questions (overall Cronbach's  $\alpha = .93$ ). As thriving was operationalized as a second-order latent variable, CFA was conducted to evaluate its factor structure. Results of CFA provide support for two factor solution ( $CMIN/df = 2.648$ ,  $GFI = .973$ ,  $CFI = .972$ ,  $NFI = .957$ ,  $RMSE = .058$ ) rather than single factor solution for thriving ( $CMIN/df = 7.415$ ,  $GFI = .904$ ,  $CFI = .872$ ,  $NFI = .856$ ,  $RMSE = .114$ ).

## Analytical Strategy

To test our hypotheses a four-step hierarchical regression was performed. All the variables were mean-centered before creating

interaction terms to prevent potential multicollinearity (Aiken & West, 1991). In the first step, a set of control variables were included. In the second step to test Hypothesis 1, CKS was included. This step would confirm the main effect of CKS on IWB. In step three, we tested Hypothesis 2 by including SKS and the interaction term between CKS and SKS. In the last step, we tested Hypothesis 3 by entering employees' thriving at work and its interaction term with CKS. The results of hierarchical regression were plotted using Aiken and West's (1991) procedure to further explore these interactions between variables.

## Results

Correlations among the study variables are provided in Table 1. The table also presents Spearman-Brown coefficient for each variable. Equal length Spearman-Brown coefficients are presented for variables with even number of items (IWB and thriving), while equal length Spearman-Brown coefficients are presented for variables with odd number of items (CKS and SKS). It is a well-known fact that there is a difference between observed and true correlations. Furthermore, it is also noticed that the observed correlation underestimates the true correlation between the study variables (Salgado et al., 2019). In Table 1 we have presented uncorrected correlation coefficients between the study variables, especially between independent variables (CKS), moderators (SKS, thriving), and the dependent variable (IWB) that are underestimated. To overcome this issue, we also present corrected correlation between these variables. The measurement error in X and Y was calculated by employing the formula to correct observed correlation for attenuation (e.g., Kline, 2011; MacKinnon, 2012; Schmidt, 2015). As this formula required reliability coefficients for the study variables, they were attained from calculated internal consistency of CKS, SKS, thriving and IWB scales of the current sample. Corrected correlations between dependent, independent, and moderating variables are also presented in Table 1.

It can be observed from Table 1 that the Spearman-Brown coefficient reliability coefficients for study variables are above the acceptable value of .70 (Eisinga et al., 2013). Furthermore, a positive and significant correlation between variables under investigation is observed. The table also presents corrected correlations of IWB with CKS (.681,  $\Delta R = .082$ ), SKS (.458,  $\Delta R = .064$ ), and thriving (.584,  $\Delta R = .059$ ). It is also worth mentioning that average difference between the observed and real correlation is 13.7%. These statistics provide ample support for the approval of H1 as real and observed statistics present a positive relationship between CKS and IWB.

Hierarchical multiple regression was used to evaluate the effects of independent variables and the interaction terms upon the dependent variable IWB. Table 2 includes partial correlation between variables to test the strength and direction of the linear relationship. Furthermore, we also calculated the squared population cross-validation coefficient ( $R^2_{cv}$ ) for each model, employing it along  $R$ ,  $R^2$  and adjusted  $R^2$ . According to Salgado et al. (2019), multiple regression

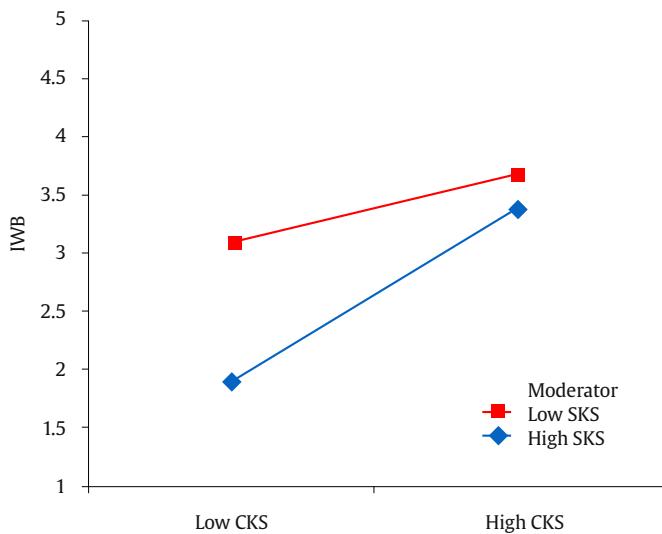
**Table 2.** Hierarchical Regression Analyses

Independent Variables	Dependent Variable: IWB							
	Step 1		Step 2		Step 3		Step 4	
	$\beta$	Partial Correlations	$\beta$	Partial Correlations	$\beta$	Partial Correlations	$\beta$	Partial Correlations
Gender	.053	.043	.060	.049	.054	.044	.058	.047
Age	.031	.017	.027	.014	.052	.035	.045	.029
Education	-.080	-.089	-.043	-.053	-.024	-.034	-.042	-.052
CKS			.596**	.581	.67*	.654	.450**	.436
SKS					.116**	.091		
Thriving							.152*	.141
CKS * SKS					-.046*	-.050		
CKS * Thriving							.092*	.070
$R^2$		.019*		.366**		.371**		.380**
$\Delta R^2$		.019*		.347**		.005*		.014*
$F$		3.201		70.3		99.65		95.42
$\Delta F$		3.201*		67.099**		29.35*		25.12*
$R$		.137		.604		.609		.616
Adjusted $R^2$		.017		.363		.368		.374
$R_{zc}^2$		.015		.360		.362		.371

Note. IWB = innovative work behavior; CKS = coworker knowledge sharing; SKS = supervisor knowledge sharing.

\* $p < .05$  (two-tailed), \*\* $p < .01$  (two-tailed).

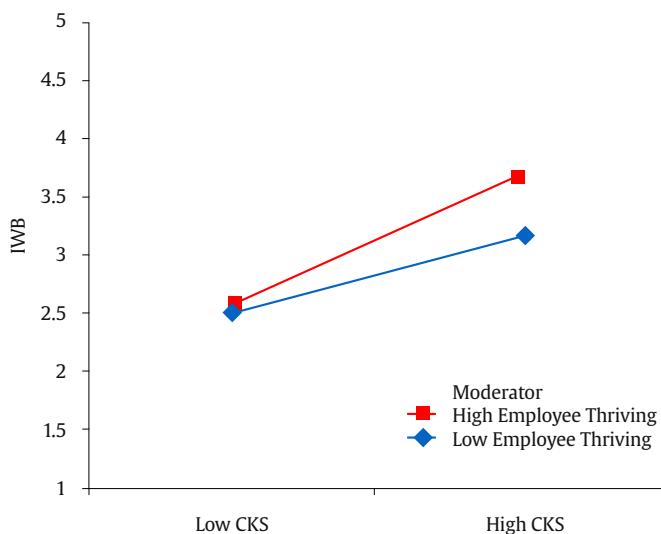
analyses are biased as they capitalize on chance. This dependence on chance leads to change in  $R^2$  size when applied from one sample to another.  $R^2_{cv}$  is a much more effective estimate of effect size than other estimates generated from regression analyses. This study used Browne's (1975) formula to estimate the squared population cross-validity as Monte Carlo examinations show that its efficacy is higher than other formulae.



**Figure 1.** Moderating Effect of Supervisor Knowledge Sharing (SKS) on the Relationship between Coworker Knowledge Sharing (CKS) and Innovative Work Behavior (IWB).

In the first step of hierarchical regression analyses, only control variables were entered. It can be noticed that control variables had non-significant relationships with IWB. However, in sum, they explained 1.9% ( $p < .05$ ,  $R^2_{cv} = .015$ ) variance in IWB. The second step of this analysis aimed at testing Hypothesis 2. It could be noticed from the results that CKS had a significant positive effect on IWB ( $\beta = .596$ ,  $p < .001$ ). Furthermore, CKS along with control variables explained 36.6% ( $p < .01$ ,  $R^2_{cv} = .36$ ) variance in IWB. The third step of the analysis was carried out to test SKS's moderating effects on

the relationship between CKS and employee IWB. Moderator SKS had a positive and significant effect on IWB ( $\beta = .116$ ,  $p < .001$ ). Furthermore, the interaction term between CKS and SKS was also significant ( $\beta = -.046$ ,  $p < .05$ ). The squared population cross-validation coefficient,  $R^2_{cv}$ , reported for this model was .362. Partial correlation of control, independent, and interaction effects with IWB were assessed to identify any significant differences with correlation. Partial correlations reported in Table 2 are smaller than the simple correlation and greater than 0. However, none of the partial correlations was found significant while adjusting the effect of additional variables. Results were plotted using Aiken and West's (1991) procedure as follows.



**Figure 2.** Moderating Effect of Employee Thriving on the Relationship of Coworker Knowledge Sharing (CKS) and Innovative Work Behavior (IWB).

As can be observed from Figure 1, SKS dampens the positive relationship between CKS and IWB. A simple slope (see Table 3) was also developed for this study to further evaluate the dynamics of interaction variables. Table 3 shows that the relationship between

**Table 3.** Simple Slope Analysis

Moderator	Simple Slope	+1SD		-1SD		Difference	
		LLCI	ULCI	Simple Slope	LLCI		
SKS	0.623	0.508	0.738	0.716	0.604	0.828	-0.093
Thriving	0.577	0.450	0.700	0.390	0.250	0.520	0.187

Note. Dependent variable = IWB; independent variable = CKS; LLCI = lower level confidence interval; ULCI = upper level confidence interval; SD = standard deviation.

CKS and IWB is significant for both +1 and -1 standard deviation level of moderator SKS. However, it is stronger when SKS is low, -1SD (simple slope = .716, CI [.604, .828] and weaker when SKS is high, +1SD (simple slope = .623, CI [.508, .738]. The results from the hierarchical regression analyses, plots, and simple slope analysis provide considerable support for the acceptance of Hypothesis 2.

The last step of hierarchical regression analyses (step 4) evaluated the moderating effects of thriving on the relationship between CKS and IWB. The moderator (thriving) had a positive and significant effect on IWB ( $\beta = .152$ ,  $p < .05$ ). The interaction between the independent variable CKS and thriving was also significant ( $\beta = .092$ ,  $p < .05$ ). Similarly, the squared population cross-validation coefficient was also generated for this model with reported  $R^2_{cv} = .362$ .

Figure 2 shows that employee thriving strengthens the positive relationship between CKS and IWB. The relationship between CKS and IWB is significant for both +1 and -1 standard deviation level of moderator (thriving). However, it is stronger when thriving is high, +1SD (simple slope = .577, CI [.45, .70] and weaker when thriving is low, -1SD (simple slope = .39, CI [.25, .52] in Table 3. These results provide ample support for the acceptance of Hypothesis 3.

## Discussion

The purpose of our study was to investigate the effect of coworkers' knowledge sharing on focal employee's IWB. Taking an interactional perspective, our study examined the individual and situational factors that foster IWB. Our research suggests a significant effect of coworker knowledge sharing on employee IWB and the important conditions (supervisor knowledge sharing and employees' thriving at work) in this relationship. There are three major findings to report in the current study. First, coworker knowledge sharing is found to enhance focal employees' innovative work behavior. Li and Liu (2019) found that employees with highly useful feedback and help/support from coworkers exhibited the highest level of firm service innovation. They suggest that future research should examine the effect of coworkers' knowledge sharing on innovative performance at the individual level. This study addresses the call by Li and Liu (2019) and found that when coworkers are willing to share knowledge, ideas, information, and skills more readily, the innovativeness of individuals enhance significantly. Previously, the creativity literature had focused on support and helping (Zhou & George, 2001), work strain (Van Dyne et al., 2002), and competition (Shalley & Oldham, 1997) dimensions of coworker influences as antecedents of individual IWBs. In this research, we examined a specific type of coworker support, i.e., coworkers' knowledge sharing, as a predictor of IWB. In light of the componential model of creativity (Amabile & Pratt, 2016), our study implies that through enhancing their problem solving and domain-relevant skills, organizational employees may increase their individual IWB, specifically through the knowledge shared by their coworkers.

Second, this study found that there are some boundary conditions that can affect the relationship between CKS and IWB. More specifically, the finding suggests that when supervisors share knowledge more frequently, the effect of CKS on IWB weakens. Duffy et al. (2002) found that the significant interactional influence of supervisor undermines coworker support on somatic complaints and passive counterproductive behavior at individual level. Their

results showed that the negative effect of coworker support on a focal employee's emotional distress and counterproductive work behavior strengthens due to supervisors' support. A meta-analysis demonstrated that supervisor-aggression has a more substantial influence on employees' job satisfaction, affective commitment, and performance as compared to coworker-aggression (Hershcovis & Barling, 2010). Third, the study confirmed the moderating role of thriving at work on CKS-IWB link. When a focal employee has higher level of thriving at work, the positive effect of CKS on his/her IWB further strengthens. This result is consistent with the finding of Riaz et al. (2018) that thriving serves as an important regulatory mechanism that operates as an internal gauge for innovation.

This study provides insights into how employees can enhance IWB through coworker knowledge sharing by staying attuned to their psychological state of thriving in order to influence their own innovative behaviors. Spreitzer et al. (2005) seminal theoretical work on thriving gives only passing notice to the role of individual predispositions and how they may influence agentic work behaviors which are the "engine of thriving." Our study elaborates on this suggestion and provides empirical evidence that thriving serves as an important self-regulatory mechanism that operates as an internal gauge of personal development and growth through which coworkers' knowledge sharing translates into higher (lower) IWB by focal employees. The results of this study support our hypotheses that the positive relationship between coworkers' knowledge sharing and employees' IWB does vary depending on the degree of supervisor knowledge sharing behavior and the thriving of employees' at work.

## Theoretical Implications

Our study contributes to the theoretical development of creativity, coworker influence, and knowledge-sharing literature. First, the current study contributes to individual innovation literature by highlighting the importance of coworker influence as a factor in enhancing a focal employee's IWB. Furthermore, by applying an interactional perspective, this study examined moderating effects of an individual as well as situational factors in predicting employees' IWB. While there are substantive and empirical studies on investigating those boundary conditions, for example creative personality (Zhou & George, 2001), openness to experience (Zhou & George, 2001), or supervisor support (Madjar et al., 2002), there is much to be learned about various situational and personal factors associated with optimal utilization of individual innovation (Liu et al., 2016). In this regard, by taking an interactional perspective, we investigated supervisor knowledge sharing as a situational factor and employees' thriving at work as an individual factor. Thus, our study augments the theory as well as the empirical examination of innovation in organizations.

Second, our study investigated a specific form of coworker influence, namely, coworker knowledge sharing and its effect on IWB. Although it has already been established that in an organizational workplace, coworkers are critical social referents, but their various roles have not been yet been investigated to the full extent (Chiaburu & Harrison, 2008). In fact, most research on coworkers has examined the effect of generic forms of coworker behavior, namely coworker support on employees' outcomes (Ng & Sorenson, 2008). Although a

recent meta-analysis has highlighted the strong influences of certain forms of coworker support on organizational outcomes (Chiaburu et al., 2013), still a limited number of studies have specifically examined the effect of coworker knowledge sharing behavior.

Third, our research examined the crucial role of supervisor knowledge sharing in moderating the effects of coworker knowledge sharing on IWB. Because supervisors hold power, resources, and authority at the workplace, support of supervisors could be more important than that of coworkers. Despite its usefulness, there has not been much research exploring the interaction effect of coworker and supervisor behaviors on IWB. Our result demonstrated the limited benefits of coworker knowledge sharing in the presence of supervisor knowledge sharing.

Fourth, our study provides insights into knowledge-sharing literature by examining workplace knowledge sharing from different sources and their effect on IWB. Previous studies have demonstrated the important role of knowledge sharing in creativity (Ma et al., 2013). For example, Gilson et al. (2012) tested the main effect of team knowledge sharing on employee creativity. Ma et al. (2013) examined the relationship between ethical leadership and employee creativity through individual knowledge sharing. However, although knowledge sharing is a relevant and important factor in promoting creativity (Gilson et al., 2013; Ma et al., 2013), effects of knowledge sharing from various sources on individual innovation have not been much explored. Our findings demonstrated that employees may seek and utilize knowledge from their coworkers only when such support from their supervisors is lacking in this regard.

Fifth, this study explored how employee individualities may moderate the effect of coworker knowledge sharing on IWB. Some researchers have suggested that the effectiveness of the shared knowledge is determined by characteristics of knowledge recipients. For example, Ringberg and Reihlen (2008) argue that successful outcomes of knowledge transfer would vary in response to the cognitive style and frequency of social interactions of recipients. Consistent with these findings, our findings also suggest that thriving moderates the positive relationship between coworker knowledge sharing and IWB such that thriving at work tends to strengthen the relationship between coworker knowledge sharing and IWB since employees with high thriving at work are likely to search for challenging goals and engender eagerness and curiosity and, in turn, proactively utilize the knowledge shared by coworkers to enhance their IWB.

## Practical Implications

In addition to the above theoretical contributions, our study also puts forth some important implications of practical nature. Given the importance of IWB, organizations should strive towards enhancing knowledge sharing behavior in their workplace. Specifically, knowledge sharing amongst coworkers should be given special attention. Since coworkers have more direct day-to-day interactions with focal employees and can better understand each other, it could be easier for an employee to influence coworkers to share their knowledge that would be the case with a supervisor. In this respect, managers should encourage team members to meet frequently for sharing their knowledge with each other, and also associate awards with knowledge sharing behavior of coworkers. Furthermore, complementary effects of supervisor knowledge sharing can provide some practical implications for the way managers can compensate for the positive effect of coworker influence in case there is a lack of coworker support. Additionally, organizations may consider assigning employees that are better thriving at work with tasks that require higher IWB. Training programs and incentives could boost employees' energy and learning. Managers should establish norms of support, autonomy, and cooperation by providing decision power, information,

rewards, adaptability to generate new ideas, and knowledge to subordinates. Managers are responsible for utilizing individuals' energy and should devote considerable time and effort to ways in which thriving at work can be maximized. More and more employees are looking for work to be a place where they are given opportunities to grow and develop as well as feel energized by the work they do.

## Limitations and Future Research

This study also carries some limitations. First, given the cross-sectional nature of the study, data was collected at one point in time. Therefore, inferring causality from our results may be difficult. Future research can consider measuring these variables at different time points and from different data source. For example, coworker knowledge sharing and thriving can be measured at time 1 and IWB and supervisor knowledge sharing at time 2. In addition, employee thriving can be measured by their supervisors to minimize any possible subjective bias. Second, our sample lies within Pakistan's geographical boundaries and it is relatively small, which may limit the generalizability and external validity of findings. Future research should replicate this model in other cultural settings and across different industries. Third, our study includes a limited number of variables and there can be additional characteristics that can determine IWB. These characteristics may include, for example, high learning-orientation for potentially strengthening this relationship, or high goal-avoiding orientation for potentially weakening this relationship. In addition, scholars could examine how knowledge recipients' different cognitive styles or abilities may change this relationship. Moreover, this research model can be extended from individual to team level and organization level by introducing organizational-level variables as mediators or moderator variables. For example, to consider the impact of team knowledge hoarding or team cohesion on the link between coworker knowledge sharing and IWB.

## Conflict of Interest

The authors of this article declare no conflict of interest.

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