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## Effect of Employee Creativity on Project Performance with the Mediating Role of Knowledge Sharing and Moderating Role of Openness to Experience

**Abstract** *Since almost last two decades' employees' creativity has been discussed immensely by the researchers. This study majorly focuses on the effect of employee creativity in project performance in project-based organizations of Pakistan. We have discussed that the relationship between, employees' creativity and project performance depend on the knowledge sharing whereas, openness to experience moderating the correlation of employees' creativity with knowledge sharing. For this purpose, data was collected from 273 employees working in project-based organizations of Pakistan. The results obtained after the data analysis, considerably shows that there is an optimistic relationship between employees' creativity and project performance whereas knowledge sharing mediates this relationship with the moderating role of openness to experience. The study significantly expands to the prevailing literature by highlighting the procedure through which employees' creativity has a major effect on the enhancement of project performance.*

**Key Words:** Employee Creativity, Knowledge Sharing, Openness to Experience, Project Performance.

### Introduction

The elements that influence the occupational effects have continuously been a central apprehension in the field of organizational research (Chi and Pan 2012). Many organizations have started considering creativity as a key component in the advancement and success of their projects and their performance. Thus, employees' creativity keeps a great importance in a workplace (Woodman, Sawyer and Griffin 1993). According to (Mittal and Dhar 2015) employees' creativity is one of few components through which organizations can accomplish success and can compete with other organizations in their competition. The workplaces increasingly reward those who are seen as true “innovators”. It is very important for all employees to understand the concept of creativity and modernism. Different studies have well-defined creativity as the capability or talent to convey novel and fresh ideas whereas innovation is the presentation of those ideas. Creative problem solving gives that competitive superiority that any business is struggling to achieve. It has been more than forty years that researchers are working on creativity.

Employees' creativity not only plays a vital role for an employee but for organizations as well. As we, all know that in this 21<sup>st</sup> century technology is rapidly taking over so it is very important that all employees develop such technical and innovative mind set. It is also affecting the economy positively (Runco 2004). It is very important to match employees with problem solving experiences that would help them stretch themselves intellectually. (Kremer, Villamor and Aguinis 2018) Nowadays it has become a necessity for the employees to be creative and open to new challenges. Creative business ideas set companies apart from one another. All the organizations in today's world demand creativity. It is also very important for an organization to stress upon creativity. There should also be a culture of rewards and appreciation in an organization so that staffs are enthused to contribute ideas and reflect critically. According to (Wang, MS; Noe, R.A 2010) for creative performance of an individual, the assistance of knowledge sharing is very vital. In fact, creativity is developed due to information distribution.

It is suggested through past theorizing that sharer's creativity can be improved by knowledge sharing through three mechanisms (Zhang, et al. 2018) . Firstly, knowledge sharing with workmates

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is always a valuable learning opportunity. In order to describe something logically to one's team mates it is important to understand it thoroughly themselves first. Hence, knowledge sharing provides a great prospect for workforces to encompass their knowledge related understanding (Wang, MS; Noe, R.A, 2010) Secondly, recipients of knowledge can offer well-timed feedback on taming and applying knowledge, that is original, to the sharer of that knowledge [\(Radaelli , et al. 2014\)](#) Through this sharer will be able to advance understanding of the encountered questions, produce innovative tactics to interpret preceding ideas, and/or integrate earlier identifications into a new charter [\(Du Plessis, The role of knowledge management in innovation 2007\)](#) .Thirdly discrepancies in interpretations and knowledge may be established during the process of knowledge sharing. These disparities are likely to enable the expansion of new ideas (Wang, MS; Noe, R.A, 2010).Shortly, knowledge sharing empowers the sharer of knowledge through the information exchange and communication of ideas to bring their knowledge and skills up-to-date [\(Perry-Smith and Shalley 2003\)](#), which is an essential requirement for the generation of new ideas (Amabile, 1988)

According to a recent study researchers have proved that the employees who have an active and positive personality, tends to engage in more knowledge sharing hence increasing the creativity [\(Rehman, et al. 2010\)](#). Researchers have suggested that managers should consider openness to the experience of an employee before designing a job for them. As we have great concern about the personality traits of a person, therefore we were stimulated to research on the five personality traits discussed by [\(Barrick and Mount 1991\)](#), with this study our interest in openness to experience increased in contrast with the creative behavior of the employee. Openness to experience is a personality trait which has a reasonable effect on creativity of an employee and some great psychologists have identified this. In this study, we have used Openness to experience as a moderator. It is one of the five dimensions of a person's character and previous studies have discussed that how it effects the creative nature of an employee. A person who has a personality of openness to experience has great interest in trying and learning new things. It is a fact that a person, who is imaginative, is always curious to learn new things, and possess a broad mind, is more open to learn and experience new things than a person who is uncreative and possess a narrow mind. OE has been categorized as an essential personality trait that affects employee creativity. [\(XU, JIANG and Walsh 2016\)](#) . The people with this personality trait have a tendency to be more creative as they are always ready to learn new things. All the employees should respond enthusiastically to all ideas and support each there.

### Gap Analysis

For the advancement and success of the organizations and projects employees, creativity is very essential [\(RW, SawyerJE and Griffin RW 1993\)](#). While working on projects the employees are usually positioned in a controlled and regulated environment where they are given limited time and similar work construction. In such environment, they are unable to display their creative concepts and ideas. They resist giving ideas and have to forcefully accept the task that they do not want to work on. Moreover, it is believed that the working environment in which an employee operates should not be strict. There should be relaxed and positive environment. There should be an open and honest communication throughout the organization. There should also be a culture of respect throughout the work place that gives employees enough flexibility to give new ideas. There should be an environment of transparency and there should not be any authoritative culture. They have to work according to the policies of the organization even if they do not want to. For an organization to be successful it is good to have procedures and policies in place and all individuals should adhere to those policies and procedures as well but there shouldn't be any headfast rule that may restrict employees to give new ideas. As in this way the individuals become de-motivated and cannot produce quality work.

A person can only produce novel useful and creative ideas from a well supportive work environment where he can freely think and express [\( YUAN and WOODMAN 2010\)](#). Employees should be encouraged to give new ideas even if the idea is not up to the mark it can be rejected decently in such the way that an employee does not feel disrespectful and de-motivated. According

to [\\_ \(Hon 2011\)](#), the innovation and creativity of a project or an organization is linked with the creative attitude of an employee. If the employee is not creative, he can bring no change to an organization. The creative behaviour of an employee can be either due to the demand of his or her job or it's due to his interest in creativity. A creative individual easily gets bored. Although there is a lot of work on employee creativity and its effects on an organization, but only a handful of work on mechanism explaining the relationship between employee creativity and success of a project. If all the employees are working according to the set policies and rules the work would become quite monotonous and employees might start finding their work boring and dull so there should be an element of creativity in order to bring change and make work more attractive.

There are many factors that affect the performance of an employee in an organization like appreciation from the Boss, benefits provided by the company, ambience of an organization, and type of the co-workers. There are behaviors and characteristics of a person's personality that are the cause of assemblage of employees. It is mostly based on their creative style, openness to experience and innovative skills [\(Scott, Leritz and Mumf 2004\)](#).

To fill the gap our study focuses on how an employee's creativity affects the performance of a project and develops a research model that links employees' creativity and project performance with knowledge sharing which is used as a mediator. This research focuses on the key factors that we will not only mention the positive effects but the negative as well. In today's world creativity has become a very important requirement for an individual to grow. We will also explain the moderation of OE on creative behavior of an individual and knowledge sharing process. This study also tells that why is it important for a creative employee to share knowledge for a better performance of a project.

## **Problem Statement**

The researchers have proved that for a successful project, creativity of an employee is very important [\\_ \(Carine, Shukla and Oduor 2015\)](#). They have shown that people with an ability of great creative problem-solving attitude tends to share more knowledge than the ones who have low capacity of problem solving. [Carmeli](#) (Carmeli, Gelbard, & Palmon, 2013). As long as we have researched, employee creativity on project performance with the intermediating role of knowledge sharing has still been unexplored by researchers. In addition, although there is a little work on controlling effect of OE in employee creativity but how it affects knowledge sharing still has to be discovered. Hence this study focuses on the mechanism that how employees' creativity affects the performance of project. Knowledge sharing mediates the relation and openness to experience moderate's employee creativity.

## **Employee Creativity and Project performance**

Nowadays, a fashion of project-based organization is being developed and it is increasing day by day in the form of organization. These organizations carry most of their tasks and activities in form of projects [\(Pensel and Muller 2012\)](#) The organization whose employees possess a critical thinking and problem-solving skills have a competitive edge. [\\_ \(Grosser, et al. 2018\)](#). Creativity of an employee is important for overall project performance and success.

The success of an Entity is determined to the extent through which its employees are involved in the process of creativity and innovation [\(He, Cho, Qi, Xu, & Lu, 2013\)](#). Innovation and creativity not only mean giving new ideas but also implementing them. Both these factors make an organization strong and successful. Employee's creativity can enhance organizational scope and contribute toward developing innovative range of product and services and provide out of the box ideas. [\(Amabile TM 1983\)](#) [\\_ \(Shalley and Zhou 2008\)](#). Subsequent to thinking about individual creativeness through the biography of makers, ingenuity actuating methods at the individual dimension, business inventiveness from the enterprising perspective and as a vital objective, studies about concentrated on imagination as an authoritative issue to be overseen through explicit settings and administration, the innovative process of organizations and the administration of innovative groups as a component of the "ordinary" everyday business exercises are current concerns. Latest intimated works surveyed

for the multifaceted nature of the wonder of hierarchical inventiveness and proposed to incorporate its different measurements through a staggered point of view [\(Simon 2006\)](#).

Employees' creative approach can improve efficiency and effectiveness of various business procedures. This can be through reducing the required inputs of various processes or by enhancing the outputs. [\(Shalley, Jing , & Oldham, 2004\)](#) Subsequently, the performance of the whole unit or businesses may progress. Furthermore, although such reimbursements of operatives' self-creativity may not straightforwardly influence their genuine work viability or proficiency, rather their administrators may play their share in such assistances when ranking their workers' work performance. Together these build on to creating synergistic effect and incremental benefits are achieved [\(GONG, HUANG and FARH 2009\)](#). According to different studies it has been observed that during the past few decades' employee creativity has become a focus of research. With all the studies it is concluded that there is a need of innovation and creativity in the project-based organizations of Pakistan. As projects can perform well if innovative procedures are applied on them and this can only happen if a proper environment should be provided to employees to show their creative abilities. All these studies lead us to the following hypothesis

**H1: Employee Creativity Positively Effects the Project Performance**

### **Employee Creativity and Knowledge Sharing**

Employees in any field of work can be creative generating some of the fresh and innovative ideas. It can be any work of any type of organization. It is not necessary that it should be a well-known organization with hide projects or Startup Company, innovation though creativeness can be brought in anywhere [\(Rice 2006\)](#). Regardless of all the past studies on the implementation and enhancement of knowledge sharing processes in organizations and projects, very less consideration is given to employees' knowledge sharing capabilities. Even though there are many web and mobile applications that can help in gaining knowledge and sharing it among each other but the main component of information sharing and knowledge distribution in an organization are the employees. [\(Bartol and Srivastava 2002\)](#). The act of sharing different thought processes, knowledge and information via different channels like communication and interactions through different sources like internet, books newspapers etc. between groups of people with same interest is known as knowledge sharing.

We have used componential theory of creativity as our supporting theory. In this theory the writer [\(Amabile TM 1983\)](#) [\(Amabile, 1988\)](#) emphasizes on attaining the knowledge of the domain. According to her, good knowledge of domain in which an employee is working, is a very important element of creativity. Employee competence, knowledge and continuously learning aptitude in field of his work is the basis of all forms of creativity in his/her performance. For a person being creative and showcase his/her creative skills it is crucial for him to have sufficient knowledge of the domain he/she working in [\(Cheung, Chau and Au 2008\)](#). Results of sharing knowledge depends upon the amount and quality of the information being shared through different channels among people with common interest [\(L. liao 2006\)](#). Despite social networks and relationships being a main component of healthy population participation in physical community events' importance cannot be denied. Social networking is essential as it provides access to knowledge and support that help in the process of innovation. An organization must grow to reach its full potential and the amount of growth depends on the employees. A rapidly growing line of research employing and social connectivity approach highlights the social flora of innovation and creativity. [\(Grosser, et al., 2018\)](#). Effective communications build strong relationships. Knowledge sharing is related to networking. Information technology can help at great level in developing the networks. Organization can take benefits from the new method and technologies. Employees can create linkages with the help of computers through which they can connect with each other. Computers also provide sharing of useful data and information. [\(Mittal & Dhar, 2015\)](#) Knowledge sharing between individuals increases work place engagement and interaction between employees. It allows effective communication between employees at all levels in an organization. It also helps to produce good amount of work with enhanced quality.

**H2:** There is a Positive Association Between Employee Creativity and Knowledge Sharing.

### **Knowledge Sharing and Project Performance**

For better performance of project and to achieve project success, sharing of ideas in the project team is essential. The team members should have clear understanding of the project and should be encouraged to give new and different ideas. Working together is more productive than working as individuals. Even if every individual in a team is giving one idea only it can bring a big change, this viewpoint is based on an essential principle of teamwork, collaboration and association in the tasks. (Liu, Keller and Shih 2011). As we know that project-based organizations are quite diverse than other businesses and they always take projects that are exclusive and unique, complex and uncertain in nature. Due to these differences their requirements of knowledge and information distribution also differs and requires a proper process of sharing of experiences, information and knowledge among the project teams and other teams working on similar nature of projects. (Ajmal and Koskinen 2008) There are many projects that are of same nature, and it is obvious that similar nature of projects faces similar type of problems. Therefore, according to the research project teams are willing to share their experience and issues with the team of projects who are working on same nature of projects, in this way many project issues can be resolved easily and efficiently (Lewis, Lange and L. 2005)

Organizations can implement procedures to motivate employees to thrive for achieving structural goals, thus generating benefits that are worthy for both firms and their staffs, in aggregating organizational success which is heightened by enriched knowledge distribution at the office (Wilkinson 1998). The procedure is way over in an organization and providing platform for knowledge sharing massive growth can be achieved in its projects and operations (Han, Chiang, & Chang, 2010) The top management of an organization should first create such a culture among themselves and pass it on to their respective teams. In a study (Ren, Deng and Liang 2018) There are many dynamics that effects the efficiency of the process of knowledge transfer among the team in project-based organizations. One of these dynamics is the project's nature that keeps a reasonable importance in transferring of the knowledge.

**H3:** There is a Positive Association Between Knowledge Sharing and Project Performance

### **Mediating Role of Knowledge Sharing**

According to (Wang, MS; Noe, R.A, 2010) knowledge sharing is described as the deliverance of all the details related to job and proficiency to provide guidance to others and to work together and pool resources in order to resolve difficult problems, cultivate and introduce fresh ideas and to instrument new strategies and processes. Knowledge sharing among employees help them to have superior innovation competence. Individuals that share knowledge work more effectively towards meeting the goals of an organization and producing more quality work. (Yang, Nguyen and Le 2018) KS behaviors among workforces may support firms to have greater innovation proficiency. The organizations today are striving hard to motivate collaboration among their team members and enhance the knowledge sharing process. (Le & Lei, 2017) The importance of knowledge sharing is increasing day by day in both public and private organizations. Organizations today are encouraging the behavior of knowledge distribution and involvement in knowledge sharing process every day. They are now making it a part of their curriculum and for this they are implementing different activities of knowledge sharing in their organizations (Kim and Lee 2006). This attitude has been seen in private organizations more than public organizations. Private organizations are striving hard to meet their customers' requirements and giving them every facility, they require. As they give a lot of importance to their customers so for this they give huge importance to their employees and they are giving them different training to enhance the knowledge sharing process. The difference in public and private organizations is another dimension of discussion that cannot be discussed in this paper.

Revolution can be described as the method of interpreting an idea or development into products and services that develops a value for clients or customers. Innovation is the application of



creative ideas and interventions through which new products, systems and processes come into existence (L. liao 2006). The act of administration of originality in an employee's job is only comprehended as the skill of quantifiable, societal and figurative perimeters of the organization that is altogether experienced as an innovative playground (Simon, 2006).

Knowledge management is very important for knowledge sharing process. For the better management of knowledge initiatives should be taken, process should be created and systematic strategies should be developed. This helps in better sharing and creation of knowledge (Santoro, et al. 2018) It has been observed over a century, that by brining inventiveness in the management and administration style of an organization, as compared to any other type of enhancement, has resulted in remarkable performances of the employees, projects and the overall organization. A management innovation creates long-lasting advantage when it's based on novel experience that challenges management convention. Knowledge management means attaining useful information and making it available whenever needed (Du Plessis, 2007).

**H4:** knowledge Sharing Mediates the Relationship Between Employee Creativity and Project Performance.

### Moderating Role of Openness to Experience

An individual that possess a creative mind is always open to experience. This trait plays a vital role in the creativity of an employee a project performance. Employees with creative mind are always looking for ideas to make their monotonous work more interesting and exciting. They get bored very easily therefore try to bring in new things every day. (BAER 2010). When an employee has an urge to experience new things then it becomes very easy for such an employee to get bored easily. Openness to experience causes you to learn, develop and fortifying your faith in yourself. There is trustworthiness and genuineness that accompanies a receptive outlook on the grounds that being liberal methods conceding that you aren't all knowing and you are available to adapt new things.(Barrick & Mount, 1991) It means believing that whatever truth Employee finds might always have more to it than you realize. By creating an environment of trust and reliability, the workforce's speed of communicating with each other increases and they can easily share information and other knowledge concerns with each other and among their team. (von Krogh, Georg, 1998)

Openness to experience is a characteristic of a person's personality that impacts employee creativity in the organization which proves that openness to experience is related certainly to creativity, it can be beneficial to managers when assigning responsibilities to relevant team members. So, the trait of openness is directly associated to training expertise and this attribute moves organizations towards success (Barrick & Mount, 1991). When the openness to experience is high in an employee, he is more likely to think creatively; he takes ideas and experiences from his surroundings through observation, which in turn bring a positive effect on project performance and its success through knowledge sharing. If the openness to experience is low, the employees tend to work in a typical working environment. Open-mindedness is receptiveness to new ideas. It means you possess such a mind that is always eager to learn and experience new things. As described before an individual who has an urge to learn new things, possess a broad thinking and has a smart mind is more open to experience new things than a person who has a dull mind. The findings of (XU, JIANG, & Walsh, 2016) suggest that some aspects are way more de-motivating than being merely asked to do very stress-free easy to do work, and this is especially true when employees are creative.

**H5:** Openness to Experience Moderates the Relationship Between Employee Creativity and Knowledge Sharing Such that if Openness to Experience is High it Strengthens the Relationship Between Employee Creativity and Knowledge Sharing.

### Control Variables

Age, gender, experience and qualification were used as control variables because they have some effect on Knowledge Sharing and project performance. To check is there any significant difference a

one-way ANOVA comparison is performed on the variables of the present study. The results show that among all the variables none is controllable ( $P > 0.05$ ).

**Table 1.** Control Variables

	Knowledge Sharing		Project Performance	
	F	P	F	P
Gender	1.364	.244	2.143	.144
Age	1.141	.338	1.712	.148
Experience	.850	.495	2.012	.093
Qualification	.693	.557	1.643	.157

**Table 2.** Scale Reliability

Variables	Cronbach's Alpha	N of Items
Employee Creativity (IV)	0.854	8
Knowledge Sharing (Med)	0.753	6
Project Performance (DV)	0.851	6
Openness to Experience (Moderator)	0.739	7

### Correlation Analysis

It is a process used to determine the connection between the variables. The range of Pearson correlation is from -0.1 to 0.1. Therefore, through this value we can determine the association between two variables. If the value is greater than or less than zero, then it determines that a strong relationship exists between two variables but if it has zero value then it directly tells that no correlation is present among the variables. The plus and minus signs tell about the nature of relation. If there is a positive sign it means that the two variables have a direct relation with each other. This shows that the increase in one variable causes a significant growth in the related variable. Similarly, if the sign is negative then an indirect relationship occurs between the two variables, that means the increase in one variable results in the decrease of another variable and vice versa.

**Table 3.** Means, Standard Deviation, Correlation

S. No	Variables	Mean	SD	1	2	3	4
1	Employee Creativity	3.6566	.68865	1			
2	Knowledge Sharing	3.9060	.63490	.327**	1		
3	Openness to Experience	3.6039	.68522	.318**	.475**	1	
4	Project Performance	3.8883	.67974	.467**	.435**	.378**	1

*\*\*Correlation is Significant at the 0.01 Level (2-tailed). N=273. \*P<0.05, \*\*P<0.01, \*\*\*P<0.001*

### Regression Analysis

The process of correlation analysis was implemented in this study to examine the presence of connection between the variables but we cannot depend on the correlation only, as it is not sufficient for our findings. It only shows the presences of a relationship among the variables but does not tell about the extent of dependency of one variable on another. For this purpose, we perform regression analysis to determine the extent of dependency of one variable on another. The values that are often significant in correlation turn out to be insignificant in regression analysis.

Preacher and Hayes (2004) methodology was introduced for the regression analysis of mediation and moderation. Moderation analysis was directed to find out the interactive impact of OE on employee creative nature and behavior of knowledge sharing. Similarly, Mediation analysis

was performed to determine the communication effect of knowledge sharing with employee creativity and project performance.

**Table 4.** The Mediating Effect of Knowledge Sharing

		B	SE	T	P
Employee Creativity	————→ Project Performance	0.36	.05	6.88	.00
Employee Creativity	————→ Knowledge Sharing	0.30	.05	5.69	.00
Knowledge Sharing	————→ Project Performance	0.34	.06	5.89	.00
		LL 95% CI		UL 95% CI	
Bootstrap Results for Indirect Effect				.22	.45

Note. Un-Standardized Regression Coefficient Stated. Bootstrap Sample Size 5000. LL =Lower Limit; CI = Confidence Interval; UL = Upper Limit. N=273, \* P < .05; \*\* P < .01

**Table 5.** The Moderating Effect of Openness to Experience

		B	SE	T	p
Int_term	————→ Knowledge Sharing	-.2142	.06	-3.38	.08
		LL 95% CI -.33		UL 95% CI .08	

Reminder: Un-standardized regression coefficient identified. Bootstrap sample size 5000. LL =lower limit; CI = confidence interval; UL = upper limit. N=273, \* P < .05; \*\* P < .01

### Discussion

Job-related results have been an important discussion over the last two decades as they have a huge impact on the efficiency of the organization due to their positive and negative outcomes. In the current era, organizations are facing a great challenge of implementing employees’ creativity in their work-place (Mittal & Dhar, 2015). Employees’ creativity is considered as an important factor in today’s organization and they are facing a great challenge in the assessment of essential traits which include motivation of the employees and enhance their innovative skills so they can work wholeheartedly in creating quality content. Moreover, in order to obtain a competitive benefit above other firms, the organizations should construct a creative atmosphere. [\\_\(George and Zhou 2002\)](#) [\(Oldham and Cummings 1996\)](#).

This study majorly focuses on the study of relationship between employee creativity and project performance in project in project-based organizations of Pakistan. Moreover, the mediating role of knowledge sharing and moderating role of openness to experience on employees’ creativity and project performance is also studied. Our study suggested that employees’ creativity affects the project performance positively. So, if the creativity of an employee is managed well and systematically it can improve the performance of the overall project of an organization. In this regard knowledge sharing plays a very vital role and intervenes the relationship between employee creativity and project performance positively. Therefore, our hypotheses H1, H2 and H3 are accepted as they propose that if employee creativity is managed well by sharing the creative knowledge of an employee with the project team effectively it can bring a positive change in the performance of the project. Likewise, knowledge sharing plays the role of a mediator between employees’ creativity and project performance, therefore hypothesis H4 has also been accepted. Furthermore, after regression analysis it was observed that our moderator openness to experience doesn’t proves its moderating role with employee creativity and knowledge sharing thus it was rejected. Thus, it shows that it is not important for an employee to be high in openness to experience to share his knowledge. Therefore, the hypothesis H5 has been rejected.

### Conclusion

This study, worked on employees’ creativity, have repeatedly emphasized on the fact that employee creativity increases the organizational performance\_ [\(Gong, Zhou and Chang 2013\)](#). This study has



proved this fact that employees' creativity positively affects the project performance. It has also proved the intermediation of knowledge sharing but the regulating role of openness could not be proved. This research and the suggested hypotheses are being supported by componential theory of creativity and social exchange theory. Furthermore, this study has opened new doors for researchers to study on employee creativity and is going to contribute a lot in the existing literature as there have been no or very limited work on effect of employees, creativity in project performance with knowledge sharing as mediator and openness to experience as moderator. Five hypotheses were suggested in this work, out of which four were accepted with the help of previous studies and data analysis, where as one was rejected as openness does not moderates the association among employees' creativity and knowledge sharing.

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