#### CAPITAL UNIVERSITY OF SCIENCE AND TECHNOLOGY, ISLAMABAD



# Impact of Openness to Experience on Innovative Behavior In Projects with Mediating Role of Epistemic Curiosity and Moderation Role of Project Culture

by

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A thesis submitted in partial fulfillment for the degree of Master of Science

in the

Faculty of Management & Social Sciences Department of Management Sciences

2020

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#### **CERTIFICATE OF APPROVAL**

## Impact of Openness to Experience on Innovative Behavior In Projects with Mediating Role of Epistemic Curiosity and Moderation Role of Project Culture

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### Acknowledgements

Then which of the Blessings of your Lord will you deny.

(Surah Ar-Rehman)

First and foremost to my creator, my life coach, the most gracious, the most beneficent, ALLAH S.W.T, I owe it all to you, Thank you! There have been many people who have walked alongside me, who have guided me through all these efforts. I would like to outstretch gratitude to each of them. I would like to extend special gratitude to my supervisor, **Dr. Lakhi Muhammad**, whose contributions in simulating suggestions and encouragement, helped me to coordinate my thesis work and especially in achieving the results. It was because of your support and guidance from the beginning that I have done it!

A special thanks to my friends (Alia Shehzadi, Syeda Payam Zainab Naqvi, Bushra Yaseen and Bushra Jahlil) for motivating me and investing their full effort, precious guidance and unwavering support which was extremely valuable for my study both theoretically and practically.

Furthermore, I would also like to acknowledge with much appreciation the crucial role of my friends for their support, mentorship, encouragement and technical advice throughout research work. Without you, it was not possible!.

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### Abstract

This study examine the impact of openness to experience on innovative behavior with mediating role of epistemic curiosity and project culture plays the role of moderator. The study was conducted on project based organizations of Pakistan. Data were collected from managers and individual like employees of different project organization in Pakistan. For this research we have circulated 350 questionnaires and 210 responses were correctively collected. The study examines that impact of openness to experience on innovative behavior in projects. The data was analyzed by using SPSS. Result shows that openness to experience has significant positive impact on openness to experience. The mediating role of epistemic curiosity also has positive relationship between openness to experience and innovative behavior in projects. Results also show that project culture has positive relationship between openness to experience and epistemic curiosity as moderator. Theoretical and practical implications are also discussed in our research. Future directions will also suggest for future practitioner to carry on study in these variables.

Keywords: Openness to Experience, Epistemic Curiosity, Innovative Behavior, Project Culture.

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# List of Abbreviations

$\mathbf{EC}$	Epistemic Curiosity
IB	Innovative Behavior
$\mathbf{IT}$	Information Technology
OTE	Openness to Experience
$\mathbf{PC}$	Project Culture

### Chapter 1

## Introduction

#### **1.1** Background of the Study

Openness to experience speaks the degree to which an individual is inventive, progressive, and broad-minded, creative (Mussel, 2017). It has long been speculated as an important individual attribute that impact on employee creativity (Shalley, Zhou, & Oldham, 2004; Zhou & Shalley, 2003). In this case, empirical proof for this proposed relationship was not unquestionable (Baer, 2010; Baer & Oldham, 2006; George & Zhou, 2001; Hammond, Neff, Farr, Schwall, & Zhao, 2011; Raja & Johns, 2010).

Zhou & Hoever (2014) examined how worker openness to experience identifies to both radical and progressive creativity. In addition, researchers have suggested that individual and contextual forces interactively shape employee creativity. Openness to Experience is one of the key component of five factor model which normally explain by such words as innovative, refined, interested, unique, broadminded, brilliant, and aesthetic(Javed & Haque, 2018). As indicated by the changed Personality Inventory, Openness to Experience is made out of Fantasy, Aesthetics, Feelings, Actions, Values and Ideas. Moreover, individuals who have significant level of openness are said to be touchy to craftsmanship, magnificence, to be creative, liberal in values, adaptable and interested (Rii, Ahmi, Rii, & Buatli, 2018). As indicated by the psychologists, Openness to Experience depends on hereditary qualities and it is heritable, so what's more, individuals who are curious, will most likely be innovative and also aesthetic(Tan & Kailsan, 2019).

Those factors that can boost up the employee ability to generate unique and modified ideas or products have constantly drawn inventive researchers concentration. Personality research has exhibited that specific qualities are helpful for innovativeness (Tan et al., 2019). Openness to experience and its impact on project performance and creative performance has been studied in industries like software development, educations, NGOs, small and medium (Hassan & Mussel, 2015; Zhang & Zhang, 2019).

There are no of studied have been conducted on personality learning relations in different workplaces. For example, (Madrid & Patterson, 2016) investigate that how cognitive personality traits and organizational context interact to measure unique at work. A research also have been conducted on multi source data 347 members of different firms to measure the creative work process in organization by incorporating character qualities, information sharing and transformational leadership (Zhang et al., 2019).

In addition (Zimprich, Allemand, & Dellenbach, 2009) also explain the different dimensions of openness to experience and compare it with intelligence across different age groups. Openness to experience was compared with co-worker trust and employee creativity in Ireland and it was an expressive result that shows openness to experience is positively effect on individual trust and employee creativity (Xu, Jiang, & Walsh, 2018). Studies have been shown to look at the effect of openness to experience on organizational citizenship behavior measurements in the United Arab Emirates and additionally, to examine the intervening effect of work locus of control and interactional integrity on the openness measurements relationship (Abu Elanain, 2010).

Innovation is comprehensively recognized as key for the efficiency and accomplishment of any association (Yuan and Woodman, 2010; Anderson et al., 2014; Razmus and Laguna, 2018). Because of the developing requirements and desires for customer and the worldwide extension of qualified sectors, advancement has developed imperative for organizations (Hosking, & Anderson, 2018). The significance of innovation has additionally been noted by researchers, and research concerning advancement and inventiveness has accrued a lot of consideration from researchers in the last 2030 years (de Jong and lair Hartog, 2010).

Despite the fact that there is a lot of particular evidence in regards to the predecessors of innovative behavior in associations, there is essential for more research on indicators (Hammond et al.,2011). It is especially essential to more voluntarily distinguish the physiological view that are helpful for employee improvement, expanding the information picked up from the executives look into examining authoritative factors. In ongoing review, Anderson et al., (2018) called for more research to extend our comprehension of individual innovativeness in organization. Filling to this gap in the literature, we clarify workers' creative conduct in our investigation.

Employees are the personalities who generate and implement inventive clarifications in organization than consequently their performances are dangerous to organizational innovation. The studies provides indication of some individual innovative antecedents (West, 2002; Hammond et al., 2011) however, recently researcher start working on investigation n the role of personal values in innovative behavior. Because the personal values are the basic principles that are used to give direction t peoples for living (Schwartz,2012), it is essential to study their roles in employees innovation.. It is predominantly encouraging because values are hypothesized as being important factor of actions in organizational settings (Meglino and Ravlin, 2008; Sagiv et al., 2011a). However, practical studies concerning these relationships are scarce.

Given that exploration on epistemic curiosity in the authoritative sciences is a relatively new region of research (Hassan et al., 2015; Litman & Mussel, 2013). It is important to demonstrate that epistemic curiosity can provide unique explanatory power beyond that of already substantiate new constructs (Hardy, Ness, & Mecca, 2017). Epistemic curiosity is the craving to get new information and is relied upon to cultivate scholarly design or wipe out states of information hardship (Litman, 2008).

Since curiosity is depicted as emerging from an apparent absence of information it has been the significant main consideration behind logical research and different orders of human investigation(Litman, 2008). Information and its learning are key ideas identified with epistemic curiosity as depicted more than once in the previous literature. Epistemic Curiosity can animate positive sentiments of intellectual interest related with the expectation of adapting new information or minimize unpleasant encounters of uncertainty, which are related with feeling denied of data(Piotrowski, Litman, & Valkenburg, 2014).

From an individual distinction viewpoint, individuals with more significant altitudes of attribute connected epistemic curiosity will be assured to search out, investigate, and overcome circumstances that are evaluated as novel, complex, and questionable; accordingly, such individuals all the more regularly have practices, for example, data chasing, knowledge, and intellectual, altogether at long last lead to more greater levels of capability (Litman & Mussel, 2013).

Hassan et al., (2015) inspected the connection among behavior and learning whereas the job of trait epistemic curiosity plays the role of mediator in between ongoing learning.(Muis, Chevrier, & Singh, 2018) suggest an expressive impact of epistemic curiosity on personal epistemology and self-regulate learning. First they survey significant precepts of individual epistemology and self-regulate learning and afterward present a model of self-regulate learning. A hypothetical procedure based system connecting epistemic curiosity to lurking and de-lurking behavior conduct in online networks is displayed(Schneider & Jager, 2013).

Eren, (2009) looked at the connection between students achievement goals and epistemic curiosity and furthermore inspect the job of epistemic curiosity as the indicator of students achievement goals. (Mussel, 2010) has been distinguished as a critical variable in various areas and phases of life such as essential for awareness, characteristic knowledgeable commitment and openness for ideas were considered in previous study.

Innovative behavior a various stage process in which an individual recognize an issue for which she or he creates new thoughts and arrangements, attempts to advance and construct support for them, and produces a material model or model for the utilization what's more, advantage of the association or parts inside it (Thurlings, Evers, & Vermeulen, 2015). However, innovative behavior conduct doesn't just incorporate representative's practices related to explorative learning and the generating new ideas and thoughts, but it also additionally contains practices related to different phases of the development procedure. (Escrib-Carda, Balbastre-Benavent, & Teresa,2017)characterized innovative behavior conduct as the capacity of people to produce new thoughts and perspectives, which are forward these lines changed into innovation.

In predicting the antecedents and outcomes of innovative work behaviors, many researchers brought different variables. For example, Some studies predicted innovative work behaviors with the individual level factors as, personality traits, motivation (Hammond, Neff, Farr, Schwall, & Zhao, 2011) psychological safety (West & Altink, 2006)employee reputation, employee satisfaction, perceived organizational support (Yuan & Woodman, 2010) and some related it to contextual factors such as characteristics of the job (Hammond et al., 2011) trust in leaders(Tatan & Davoudi, 2015), supervisor relationship quality, job requirements (Yuan & Woodman, 2010). In predicting the outcomes studies has found that Outcomes of innovative work behavior are job performance (Yuan & Woodman, 2010).

Gu & Schniederjans (2014) supposed that project culture is defined as it is an example of fundamental suppositions that are designed, found, or created by a given gathering as it figures out how to adapt to issues of outside adjustment and inner reconciliation. Such a culture is holistic, historically determined, and socially constructed; moreover, it exists at various levels in the organization and is manifested in virtually all aspects of organizational life (Hofstede, Neuijen, Ohayv, & Sanders, 2011).

Project culture in this manner at last decides how choices are made, and how staff individuals react to the environment (Ajmal & Koskinen, 2008). In the words of (Sanz-Valle & Jimenez-Jimnez, 2018), organizational culture depict the more profound degree of essential presumptions and convictions that are collective by individuals from the association, which work automatically in environment It has been portrayed as a "social power" that persuades individuals to act in a specific way.

Yazici, (2009) returned to the effect of organizational culture on time sensitive assembling and execution. Doolen & Van Aken, (2003) proposed in light of production groups of a Fortune 50 high technology organization specially unit, discovered a meaningful and positive straight connection between team leader viability and team fulfillment and the organizational culture that supports correspondence and participation between groups. Factors used to characterize authoritative culture depended on parameters, for example, the degree to which organizational culture underpins the positive inter-team associations or the mix of the group into the remainder of the association, and the degree to which authoritative culture esteems and supports the groups and cooperation.

In previous literature there are many studies in which organization culture impact on curiosity: for example (Chatman & Jehn, 2004) investigate culture with technology and growth, (Gu et al., 2014) analyze the impact of culture on IT projects performance and elaborate that culture an IT project performance moderated by environmental pressure, (Aycan et al., 2000) linked culture with human resource practices, (Ajmal & Koskinen, 2008) explain the importance of organization culture in projects with knowledge transfer and (Martins & Terblanche, 2003) also present the culture which impress creativity and innovation.

The present study aims to extent by explaining the influence of openness to experience on innovative behavior in which epistemic curiosity as mediator between openness to experience and innovative behavior where project culture moderate the relationship of epistemic curiosity and innovative behavior in projects.

#### 1.2 Gap Analysis

Openness to experience, innovative behavior in projects, epistemic curiosity and project culture are important variables of this study. So far, latest research work emphasizes that openness to experience effect on innovative work behavior in projects, project culture increasing epistemic curiosity and it will increase the innovative wok behavior in projects.

This study challenges is to fill this important gap by investigative the effect of openness to experience on innovative behavior idea development and idea implementation. Furthermore, in light of integrative group processes as central to effective creative/innovative teamwork, a mediator variable, i.e., epistemic curiosity and project culture. The choice of these variables together with personality diversity in predicting team creativity depends on the importance of the integration mechanism in the process of collective creative and innovative performance (Jiang & Chen, 2018).

However, the preset study observe a big hypothetical involvement through examination of the moderating effect of ethical leadership inside the association between openness to experience and innovative work behavior (Javed et al.,2018) "Openness to Experience, Ethical Leadership, and Innovative Work Behavior." So looking in future there could be a research would be conducted with other variables that play an important role as mediator in the relationship of openness to experience and innovative behavior. The examination likewise indicated that workers greater in openness to experience are those representatives who are high in playing out the organizational behavior as a role of relational assisting and individual creative performance. Hossam M. Abu Elanain, (2010) Work Locus of Control and Interactional Justice as Mediators of the Relationship between Openness to Experience and Organizational Citizenship Behavior. but totally ignored how culture impact on the relation of openness to experience and individual behavior.

Whereas the present investigation depended on a great worldview normally utilized in research about on inventive critical problem solving and included a low-loyalty reproduction task. The lab idea of the task and test utilized in the present examination limit our capacity to sum up our findings to real world setting (Hardy, Ness, and Mecca, "Outside the Box.". There is a requirement for future research that imitates the present findings in different direction. Few studies have underlined the need to examine aspects of Innovative behavior separately (idea generation, promotion and realization) as they may be influenced by different antecedently factors (Niu, 2014; Wisse et al., 2015). In this study, we conceptualize and, thus, operationalize Innovative work behavior as both a single and a multi-dimensional construct.

Future research should keep on investigating the connection between the components of epistemic curiosity and innovative behavior. The preset study was composed towards a particular profession and not a big variety of different profession it was just targeted a medical profession. Hassan, Bashir, & Mussel, (2015) present the study on "Personality, Learning, and the Mediating Role of Epistemic Curiosity.", study explain different dimensions of personality and linked it with epistemic curiosity as mediator. In future examinations, specialists might also aspiration to conduct the job of epistemic curiosity as the way to gaining from preparing in different other professions and crosswise over culture Hassan, Bashir, and Mussel(2015).. Based on findings that so far no study has been conducted on these variables in Pakistani context, there this study will contribute significantly towards literature as well as toward research study in Pakistan for project base organization.

#### **1.3** Problem Statement

Practitioners have studied experience and innovation at group, work group on separate level. This study efforts to contribute to the existing literature by explaining the epistemic curiosity as mediator between openness to experience and innovative behavior where project culture moderate the relationship of epistemic curiosity and innovative behavior in projects. However, it is a premeditated fact that most of the research in different context. There are limited studies on related topic, with no significant study which has been conducted yet, with these variables in Pakistani context in IT sectors. It became crucial to investigate the factors effecting the innovative behavior and to provide circumstances to improve this behavior among coworkers. Because innovation and curiosity is the way to bring the uniqueness of the solutions in projects. Discovering and inventing new designs and models is the need of project management that cannot be possible without innovative behavior and epistemic curiosity among team members. Complexity of a project demands open mindedness to a newly emerging complexities of todays era and problem solving. All these factors brings a set of norms and values to respective project culture. In our study the project culture moderates the relationship between openness to experience and Innovative behavior . it may lead to improve the project life cycle process .

#### **1.4 Research Questions**

Based on the above stated problem statement, the present study plans to seek answers for the following research questions:

**Question 1:** What is the relationship between openness to experience and innovative behavior in projects?

Question 2: Does openness to experience influence the epistemic curiosity?

**Question 3:** Does epistemic curiosity influence the innovative behavior in projects? **Question 4:** Does epistemic curiosity mediate the relationship between openness to experience and innovative behavior in projects?

**Question 5:** Does project culture plays a role of moderator between relationship of openness to experience and epistemic curiosity?

#### 1.5 Objective of Research

The main purpose of this research is to develop an integrated model and test to discover the relationship between openness to experience with innovative behavior in projects. Moreover, the project culture has been taken as a moderator on the relation of epistemic curiosity and innovative behavior in projects. More specific objectives of the study are as follows:

**RO1:** To analyze the effect of openness to experience on the innovative behavior in projects.

**RO2:** To find out the influence of openness to experience on the epistemic curiosity.

**RO3:** To examine the effects of epistemic curiosity on innovative behavior in projects.

**RO4:** To investigate the mediating role of epistemic curiosity between openness to experience and innovative behavior?

RO5: To examine the moderating role of project culture on the relationship of openness to experience and epistemic curiosity?

#### **1.6** Significance of the Study

Research on openness to experience on innovative behavior in projects performs new area to be discussed with mediating role of epistemic curiosity and moderation of project culture. Hence developing of a model including determinants and outcomes will hold great significance in theoretical literature of openness to experience. It will add new dimensions in existing literature. The study holds great significance for the project-based organizations to develop such capacity for productive outcomes. This study is very significant because among all organizations manager personality and work behavior is a critical process that will effect on employee behavior.

Due to positive relation of openness to experience on innovative behavior in projects is developed in Pakistan context. In every organization employee behavior is affect due to manager personality. Hence there is need to increase the employee behavior through epistemic curiosity. As Pakistan is an Islamic country with a multicultural society, therefore its a great setting for performing and reporting such an excellent study. It helps to develop social interaction in employees easily for more productive and innovative results.

#### 1.7 Supporting Theory

#### 1.7.1 Theory of Adult Intellectual Development

The way to deal with adult intellectual that is struggling here incorporates the information and abilities that an individual consumes, including Binet and Simon's depiction of the instructive technique, together with ordinary awareness tests which focus on the mental strategy (Ackerman,1996). There are two levels for legitimization for this broader transformation of mind. The primary interests to lay meanings of intelligence (Goodnow, 1980; Stemberg, 1987), where an individual's intelligence is frequently characterized as what things an individual can perform or accomplish. Right now, grown-up's office in performing syllogistic thinking is just an extremely little piece of what might be called intellectual.

The second level for supporting an expanding of the insight develops for grown-ups is gradually specified (Rosch & Warren,1977). It draws on a plenty of subjective psychological examinations concerning the information based and expertise based contrasts among specialists. That is, improvement and expression of expertise in several fields is predicated on long investigation and practice in the advancement of rich, explicit information structures. Unconditionally, previous conversations from other intellectual and scientist researchers have demonstrated that they, as well, have powerful at an information based perspective on vision. As our study focusing on personality trait behavior and culture from theory of adult intellectual development these predictors are relates with this theory.

### Chapter 2

### Literature Review

## 2.1 Openness to Experience and Innovative Behavior in Projects

The investigation of personality disposition was initially started by Allport, "Concepts of Trait and Personality." and proceeded by Cattell during the 1940s and by Tupes, Christal, and Norman during the 1960s. In these studies, different models of personality were introduced but the five-factor model of personality becomes a popular measure of personality. In this model all the five factors were bipolar, and the one pol is for high scores and the other pol is for the low scores. In the five-factor model of personality the openness to experience is first factor and the Extraversion, Neuroticism, Agreeableness and Conscientiousness are the other four factors in measuring the personality. In the description of the openness to experience taxonomy the different anchors were used in the literature for the great marks, inventive, artistic, innovative, wishes diversity, curious, and liberal. Moreover, for the small score, down-to-earth, unproductive, unadventurous, favors routine, uncurious and traditionalist are used in different studies.

Openness to experience recognizes individuals who incline toward a range of tasks from those who have a requirement for conclusion and who addition comfort in their relationship with common place individuals and things. Individuals who reliably search out various and fluctuated encounters would score high on openness to experience. For instance, they appreciate attempting new menu things at a hotel or them like scanning for new and energizing diets. Conversely, individuals who are not open to experience will stay with a recognizable thing, one they realize they will appreciate (Amabile, 2008). Individuals high on openness to experience likewise will in general question conventional qualities, while those low on openness to experience will in general help customary qualities and to protect a fixed style of living. In rundown, individuals are on higher level of openness to experience are commonly innovative, curious, and liberal and have an inclination for range of things. On the other hand, the individuals who score low on openness to experience are normally regular, sensible, preservationist, and ailing in interest.

Innovation normally defined as it is the creation, generation and adoption and implementation of unique and beneficial ideas that are introduced in any organization for the importance of their business success.(Verhees and Meulenberg, 2004; Rosenbusch et al., 2011). In any organization innovation normally included the overview not only for greater philosophies that bring expressively change to the present practices but also for small and and step by step challenges at routine work. (Amabile, 2004; Camisn-Zornoza et al., 2004; Weinberger et al., 2018). Innovation that is on lower level demonstrating themselves in everyday innovative behavior because of unique ideas (Weinberger et al., 2018).

Therefore innovative behavior are included not only in producing novel ideas which are precising for creativity but also for implementing them in organization (Amabile, 2004;Scott and Bruce, 2006). As from literature openness to experience is the first step towards innovation (West and Farr, 2002; Amabile, 2009; Anderson et al., 2014), in the other sections of this thesis we characterized both creativity and innovation to develop our hypothesis.

In the personality literature the concept is described by different scholars differently. The personality researchers usually defined it as the facets of the differences and tendencies in an individual. Personality studies have two main streams in the literature the first stream is dedicated to examining the negative side of the personality and known as dark personality. The other stream of literature is on the positive side of the personality. Extent of literature is available at the negative or dark side of personality because its outcomes are negative (Shalley, Gilson, & Blum, 2009). While the positive side of personality and positive outcomes of personality are rarely examined this study is an attempt to examine a facet of positive side of personality, openness to experience in predicting the innovative behaviors in project related organizations. In rundown, individuals extraordinary on openness to experience are commonly innovative, creative, interested, and generous and have an inclination for range of things. On the other hand, the individuals who score low on openness to experience are normally regular, sensible, preservationist, and ailing in interest (Munir, & Beh, 2019).

Hon & Lui, (2016) argue that there are many dominent theoretical models that are concerning creativity in the organization. There is individual model of creativity proposed (Amabile,2004) and the interactional model of administrative inventiveness of (Woodman et al.,2010). The main purpose of these building blocks is that impact of workplace innovativeness is influenced by the components that could be added to novelty creativity and change in the projects. Three important factors involves to groom personality on individual or team level such as experiments, motivation and level of creative thinking. So important contextual factors those are positively or negatively effects on individual motivation which cause that creative performance and innovation (Amabile, 2007).

In the perspective of employees behavior (Woodman, Sawyer, & Griffin, 2003) highlights that personality is the more important interaction between individual and team level at work places of different organization. At the individual level, individual creativeness is the result of personality cognitive style and ability, meaningful information, precedent situation (biographical variables) motivation, social impacts and contextual impacts (physical environment). At the team level, openness is a resultant of behavior of creativity, the relation between team members and team appearances, team developments, and contextual influences. At the organizational level, innovation is a result of both in individual creativity and team creativity. The practitioner perspective is that openness is one of the greatest frequently used factor in conceptual frameworks that is illuminating the relation

between individual and team factors enhance the innovative behavior at work place (Shalley, Gilson, & Blum, 2009; Yuan & Woodman, 2010).

In addition to the intelligence with the correlation with Openness to Experience and innovative behavior there is adoption from studies that most of the people who have higher level of intelligent scored high level of epenness to exrience. When people have open minded they are on highest level of innovation they know how to bring innovative ideas in their projects which is best for any organization.. In contrast to this, individuals who score low level of Openness to Experience, are not less intelligent, just their openness is narrowed and they are resistant to change which reflects at some points negatively on their performances (Psychometric Success 2013).

Innovative behavior is adopted from origination, advancement and accomplishment of innovative and unique ideas by employees having the open minded. Furthermore, openness to experience increase employee involvement in the innovation processes which leads to their innovative behavior in projects (Javed et al., 2018). In the basis of these entire if employees are innovative and open minded there is the basic need of every project uniqueness. To achieve more uniqueness and innovativeness in projects depends upon the coordination and team members involved in every phase of the any projects. When team members do coordination knowledge is transfer from one person to another and collaboration between team members increased which brings knowledge sharing between them and these factors effect on innovative behavior of employees. On these above stated argument we hypnotized the resulting association.

H1: Openness to experience positively effects on innovative behavior in projects.

## 2.2 Openness to Experience and Epistemic Curiosity

Researchers also made distinction between openness to experience and epistemic curiosity. theoretically, and explain that openness to experience as applied in nature, provide fruitful results in terms of new output, deal with generation and implementation of relatively novel idea, while curiosity is all about just generating entirely novel idea (Anderson, De Dreu, & amp;Nijstad, 2004; de Jong & amp; den Hartog, 2010a; Hammond et al., 2011). In other words, creativity is just exploration and generation of novel idea and innovative work behavior is related to the creativity, championship, and implementation of new idea.

Those factors that will improve the human ability to generate new and adaptive ideas or products have continuously drawn new dimensions of creativity for researchers attention. Personality researcher has explain that few traits are constructive to creativity (Unterrainer, & Fink, 2016, Horng, Hu, Tsai, Yang, & Liu, 2016). Feist (2008) signify that openness phycology and curiosity participate same traits because in openness terminology it examine uniqueness of an individual level to that generate new and unique products while latter thy reflects their unique ideas and behaviors. Among the personality in the Five-Factor Model, openness to expertise has been r found to positive connection with innovativeness (Conner & Silvia, 2015). People who are on higher level of openness have appealing open ended task, they equipped with good consequent skills required more creativity and taking interest in seeking new techniques and different experiences. There is a vast research in this area has imperially supported the positive relationship between openness to experience an epistemic curiosity (Jauk, Benedek, & Neubauer, 2014, Zhang & Bartol, 2010b). In line with the previous literature, openness to experience has been seen as a solid indicator of investing time on creativity.

As such, individuals who are interested and inventive (i.e., high on open to experience) will in generally more progressively and innovative exercises. Likewise, in their assessment of openness to experience are more imaginative, adaptive, curios, vivid and knowledge creators and these characteristics give high rank to epistemic curiosity which is the demand of a project. These types of people are always willing to try out new experiments even they do not know about that but they have power to do new trails (Grosul and Feist 2014). From the expansion of the literature we leads to the hypothesis that openness to experience has positive relationship with epistemic curiosity. H2: Openness to experience positively effects on epistemic curiosity.

## 2.3 Epistemic Curiosity and Innovative Behavior in Projects

Curiosity is a variable which enhances the individual's perception of motivation. More the results of curiosity are knowledge. The variable of curiosity has two dimensions, the first one is epistemic curiosity and the second is perceptual curiosity. The epistemic curiosity is of primary concern for this thesis. Epistemic curiosity has been characterized as a craving for information that motivates examination and experimentation for dispensing with holes in data and tackling scholarly issues, along these lines guaranteeing academic accomplishment and scholarly improvement . Moreover, the epistemic curiosity is aroused with certain questions or unsolved problems. It will at this point be apparent that the drive stimulated by questions and other then related issues are, according to us, a type of epistemic interest. But when the answers to questions are answered satisfactorily, the curiosity touch up the acceptable value.

There have been number of research to explore how people different in their curiosity. Several contemporary trait taxonomies include openness to experience, a heterogeneous higher-order trait. Epistemic Curiosity is much more than innovative behavior (e.g., DeYoung, Peterson, & Higgins, 2005; Woo et al., 2014), but curiosity is distinguished as a one facet in many models, such as the Big Five personality traits (McCrae, 2006), the HEXACO (Ashton & Lee, 2007), and the theoretical intellect framework (Mussel, 2013a).

It is suggested that to adopt new ideas person must have epistemic curiosity as an important of component of his/her personality (Berlyne, 2011). Moreover, literature explore the link between epistemic curiosity with other predictors like learning and job performance etc (Mussel, 2010). Curiosity accelerates and promotes learning and innovation (Kashdan, Rose, & Fincham, 2004) which in turn enhance employee behavior. If curiosity is not promoted in their projects problems are misperceived, all information is not fully fetched and analyzed and only just few ideas are generated which may reason the quality of the creative out will suffer (Zhang, 2010). If the employee more curious he/she find out many interesting things in there project and if they have any problem in their project they will think about it and will invent new novel ideas to improve there project uniqueness (Peterson C. &., 2004). Literature suggest us that curiosity sparks new level of creativity (Berlyne, 2009). To bring new level of creativity in projects there is a need to observe things with different ways, practice them with attentions and step out them with comfort zone (Gill, 2005). Epistemic curiosity will bring more and better building blocks to develop creative solution which energies the soul and drives innovation (Litman & Jimerson, 2004). So on the bases of all these reasons we hypnotized the following hypothesis.

H3: Epistemic curiosity positively effects on innovative behavior in projects.

# 2.4 Mediating Role of Epistemic Curiosity Between Openness to Experience and Innovative Behavior in Projects

Epistemic curiosity is the capability to make various unique and a number of designs to a particular problem different directions. In the literature diverse ideas have been related with openness to new concepts, and curiosity (Vidler and Karan, 2005). Nevertheless, epistemic curiosity is related with innovative performance has been less considered until now. Berlyne (2006) saw epistemic curiosity as a selective individual explicit drive to study, while Litman and Spielberger (2003) saw it as a quality of personality. Since interest is individual explicit, it must be influenced by individual as epistemic curiosity is related with a natural gladness perceiving (Elliot, 2009). In previous investigations, (Mussel 2013) discovered solid relationships between epistemic curiosity and the requirement for discernment, discoveries that are in accordance with the discoveries of prior examinations (Olson, Camp, and Fuller, 2009).

An examination led by (Litman and Spielberger, 2003), specified a moderate relationship among divertive and explicit curiosity, proposing two distinctive measurements that are subdivisions of one hidden epistemic curiosity measurement for example, a initiative to "know" suggested by a gap in information. In addition, curiosity provided off an impression of being to a great degree independent from responsive interest and openness. Curiosity is identified with requirement for understanding, intellectual commitment and openness for new thoughts. Curious individuals naturally appreciate the procedure of confession, learning and thinking (Mussel, 2010), and put productive effort into controlling consideration and self-guideline to participate in complex cognitive (Schmeichel et al., 2003).

In past literature innovation has been defined as it is the process of elaboration and accomplishment of creative and unique ideas within an organization (Scott & Bruce, 2004). Epistemic curiosity is the craving to get new information and new information and is required to stimulated develop intrigue or take out states of informative hardship (Litman, 2008). Since curiosity is represented as developing from an apparent absence of information (Loewenstein, 2004), it has been the significant main thrust behind logical research and different orders of human investigation (Berlyne, 2010; Litman, 2008).

Information and its learning are key thoughts related to epistemic curiosity as portrayed ordinarily in past writing. Berlyne (2000) isolated perceptual enthusiasm from epistemic curiosity, approving the last as bearing principle keys of information. From a single persons qualification viewpoint, individuals with progressively more significant levels of belongings related to epistemic curiosity will certainly look out, research, and overcome conditions that are evaluated as novel, complex, and confusing; right now, people even more normally have practices, for instance, information pursuing, knowledge, and intellectual, all of which finally lead to increasingly noteworthy degrees of wellness (Mussel, 2013b). In general, a few variables are thought to cooperate and add to development: singular, managers, work gathering and atmosphere dynamics. Much investigation has focused the significance of an innovative environment (Kanter, 2008), in any case, the factor at individual level has been generally minimal investigatd (Zwick, 2015). The normal supposition about development in associations is that it is a reaction to a disappointment, strain or outer pressure. At an individual level, experiencing an issue may in this way inspire the expedition for new answers for recover their status, which can quick development (March and Simon, 2008).

Exploration, in any case, displays that a repetitive issue in associations is that advancement is regularly submitted, up till the argument that there is an disaster (Van de Ven, 2006). Most likely, this is somewhat because of the way that in association individuals regularly adjust to progressively improving circumstances and see generally late that their condition has decayed (Helson, 2008). As it may, indicated by (Dewett, 2007) imaginative execution is progressively determined by inherent undertaking inspiration, than by unnecessary inspiration. Curiosity, for example the "desire to know" is maybe the center of this natural inspiration on the grounds that it coordinates effort towards investigation, and permits to connect signals of curiosity with chances to learn, develop and enhance novelty (Kashdan, & Roberts, 2004). As such, more innovative people may search out for new ideas and clarifications, well before the condition has weakened to a crisis level, just because they are essentially curious about understanding and obtaining new knowledge and skills.

Past researches on curiosity presented that newcomers in a project base organization counting high on curiosity adapt earlier (Harrison, Sluss, & Ashforth, 2011). because they are strong knowledge creator and they are more willing to learn from sociali interactions on the work floor (Reio & Wiswell, 2000). Mussel et al. (2012) created and approved an estimation of epistemic curiosity and demonstrated that interest at work area was a positive sign of reliability, associate and self-evaluations of employment execution, and of status regarding aptitude achievement. Curiosity can be widely characterized as a drive for securing new information and concrete encounters that can provoke innovative behavior (Loewenstein, 2004). Curiosity as an individual contrast variable would thus be able to be represented as a desire for information either about generally dynamic ideas or thoughts, or about solid circumstances or items to grow new thoughts and take care of issues. Creative conduct suggested by interest can be explicit, planned for comprehension for instance how a particular complex hardware functions that one has never experienced, or upsetting.

Similarly, (Pulakos, Arad, Donovan, & Plamondon, 2000) noticed that interested people see change and novel circumstances as less unpleasant, and in this way adjust more rapidly than less inquisitive people. In the present paper, we recommend that interest is a piece of an attitude that empowers people towards an experimental reasoning and activity mode (Harrison, Sluss, & Ashforth, 2011). Besides, we suggest that this manner thus might be connected to imaginative execution. Our thinking lays on writing that joins exploratory and cooperative reasoning or example dissimilar speculation to imaginative execution (Lubart, 2001; Runco and Acar, 2012).

Litman & Jimerson, (2004) developed an very interested connction of epitemic curiosity with creativity of employees. They proposed the idea that there are two conditions of curiosity, first employee have interest to find out the new ideas and second is employee has informational deprivation which may leads the curiosity. Curiosity in linked with behavior approach and rewards (Berlyne, 2000). In an organization, when employees get free to work with their own style they participate in all activates and perform with new ideas so for this purpose epistemic curiosity have strong effect and acts as a mechanism between openness to experience and innovative behavior in projects. Previous literature has shown much positive relation with innovation and creativity. So we generalize the hypothesis are as follows:

H4: Epistemic curiosity mediates the relationship between openness to experience and innovative work behavior in projects

#### 2.5 Project Culture as Moderator

An organization culture comprises of the practices, images, qualities, and suspicions that the individuals from the organization share as to proper conduct (Hogan, & Coote, 2014). Such a culture is all including, verifiably decided, and socially built also it exists at different levels in the organization and is showed in for all intentions and purposes all parts of organizational processes (Hofstede, Neuijen, Ohayv, and Sanders, 2010). As per Denison, (2009), a project culture block up in as an establishment for its administration framework and practices. Since the project culture gives standards with respect "to one side" and wrong methods for activity, project culture resolve the company's strategies for activity.

Culture is a broader term and known differently at different levels. Cultural studies examine the culture at different levels. These levels are country level, social level, family level, organizational level and project level. In describing the term of culture different authors give different descriptions of culture. Such as a popular author of culture is defined as the, Combined programming of the minds of the people (Denison, 2010). This collective programing of the minds of the people can be different at different level, so at the country level this programing would be different and at social level, as well as at organizational level this collective programming of the people would be different. This study is focused on the examination of culture in project related organizations, so the concern for this thesis is on culture in project related organization.

Ajmal & Koskinen (2008) examine the impact of organizational culture on the process of of knowledge sharing among the employees and the management in projectized organizations. They highlighted the significance of organizational culture awareness in the informing and exchanging, and application of knowledge. It can also be discussed that domain of culture impact on thee performance of the employees, working in IT projects. Basic suppositions that are designed, revealed or established by a given group as it learns to cope with problems of external adaptation and internal integration. They have worked well enough to be considered valid and, therefore, they are taught to new members as the correct way

to perceive, think, and feel in reference to problems (Gu, Hoffman, & Schniederjans, 2014). As per Martin (2012) perceptions, project culture is a group of basic fundamentals in which individuals come into interaction inside organizations. Research recommends robust project culture enables people to categorize what an organization imagines and how they must perform to get the work done (Deal, & Kennedy, 2002).

Furthermore if project culture is friendly with representative it must bring new thoughts and embrace new systems to accomplish the most significant standard in market. Moreover, project culture that strengthens correspondence and collaboration between groups was fundamentally seen as identify with group imagination and representative behavior (Yazici, 2009). In other literature organizational culture comprises into three categories, for example, creative culture, strong culture, and bureaucratic. Right now, we are concentrating on creative culture in determining organizational accomplishment. Innovative culture mentions to a culture where organization gain from their past beliefs, thoughts, and activities that become motivation to disappointment and attention on the future by utilizing innovative thoughts, risk taking methodologies, arranging as well as performing, testing condition, and innovative culture that is disregarded before. Besides, imaginative culture is considered as a valuable asset for an association that separates your association with others and impacts hierarchical execution. As indicated by (Riaz, Ramzan, Ishaq, Akram, and Karim; 2012), imaginative culture's primary spotlight is on association inward framework and its edge on rivals by urging receptiveness to some new thoughts. A culture supportive of creativity encourages innovative behavior ways of representing problems and findings solution (Martins & Terblanche, 2003). So decanting litireaure as above, it is possible that project culture moderates the relationship between openness to experience and epistemic curiosity such that if when project culture is supportive then there is a positive relationship between openness to experience and epistemic curiosity.

**H5:** Project culture moderates the relationship between openness to experience ad epistemic curiosity, such that if project culture is supportive then there is a positive relationship between openness to experience and epistemic curiosity.

## 2.6 Research Model

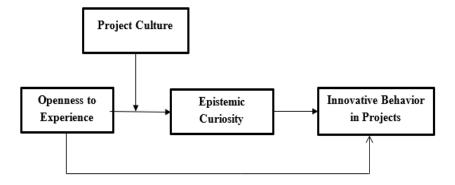


FIGURE 2.1: Research Model

## 2.7 Research Hypotheses

H<sub>1</sub>: Openness to experience positively influences the innovative behavior in projects.

 $H_2$ : Openness to experience positively affects the epistemic curiosity.

 $H_3$ : Epistemic curiosities positively affect the innovative behavior.

**H**<sub>4</sub>: Epistemic curiosity mediates the relationship between openness to experience and innovative behavior in projects.

 $H_5$ : Project culture moderates the relationship between openness to experience and epistemic curiosity, such that if project culture is supportive then there is a positive relationship between openness to experience and epistemic curiosity.

# Chapter 3

# **Research Methodology**

In research methodology, the techniques utilized for directing the investigation are talked about. It clarifies the exploration structure and how this plan stimulated the accumulation of information. It determines the purpose for gathering the populace, explore test, inspecting tactics and collection of data. It also clarifies about the reasons used to complete this investigation. It clarifies the purpose for utilizing of a poll study as a technique for information gathering.

## 3.1 Purpose of the Study

The aim of this research is to analytically examine the relationships of openness to experience Epistemic curiosity, innovative behaviors in projects and project culture.

## 3.2 Types of Investigation

This study is based on survey data collection and in examining the results of the data this study used the causal explanatory approach.

### 3.3 Unit of Analysis

In collecting the data, this thesis distributed questionnaires to the employees of IT sector. In this way the unit of data collection and analysis is individual.

#### 3.4 Population

As the current study follows to highlights on the development sectors of the Pakistan, involving the team of different project based organization. The population that I was targeted in my study was managers and employees of project based organization. As the initial source of inexpensive benefit for Pakistan are the project-based organization, in this way this area is help in a huge mode to attract other foreigners to capitalize in Pakistan, which in response is developing the necessity of innovation and creativeness in the staff and also the esteem of Pakistan round the world as a novel developing and mounting country.

Since research seeks to focus on private sectors. Some of the project base organization are highly concerned with innovative behavior and curiosity including IT sectors, Software Houses, Stairs IT Solutions, The E Media Web Design, Development & IT Company, etc. The sample mainly consists of managerial and operational level of different organizations in Rawalpindi and Islamabad.

#### 3.5 Sampling Design

To adopt on sample size statistical power guides for minimum sample size are required. Furthermore, calculator can be used to calculate minimum sample size (Hair et al, 2014). Hence, by considering the guidelines, the model has one predictor, one mediator and one moderating variable, the effect size is set as small as 0.05 and power needed was 0.95. The required sample size is 210.

### **3.6** Sample and Procedures

Almost 350 questionnaires have been distributed. The distribution of questionnaires was even in all nominated organizations. The insurance letter has openly specified that this study is conducted for the purpose of academic purpose only. Participants were guaranteed of the confidentiality of their replies and anonymity so the respondent can easily fill the questionnaire with any hesitation. Due to time constraint and main purpose of this study being academic in nature, and used convenience sampling technique for data collection. This will be quick, convenient, and less expensive as well as the fact that most easily accessible members are being chosen as subjects. Moreover, questionnaires were distributed among these members to take precise response about the study. It was anticipated that all respondents has given the response openly and correctly up to their own perception and acceptence of the questionnaire. Software Managers, developers, project managers, Operation Managers etc. have been included in it.

## 3.7 Sample Characteristics

For the present research, questionnaire was designed in such a way to get the complete information about the respondents. So demographics were included while designing the questionnaire. Four demographics variable such as gender, age, qualification and experience were included. The detailed sample characteristics are given below in the tables with description.

#### 3.7.1 Gender

TABLE 3.1: Gender Distribution

Gender	Frequency	Percentage
Female Male	47 163	22 78
Total	210	100

Table 3.1 depicts the ratio of male and female respondents. As we can see majority of the respondents were male which shows that 78% (163) of the respondents were male and 42% (22) respondents were female.

#### **3.8** Age

Age	Frequency	Percentage
18-25	43	22
26-34	78	37
35-42	38	18
43-50	29	13
51 +	22	10
Total	210	100

TABLE 3.2: Age Wise Distribution

Table 3.2 shows that most of the respondents were having age between the range of 26-34 years that means 37% of respondents(78) from this group, 18-25 years group were having 22% of (43) respondents, 35-42 that means 18% of (38) respondents, 43-50 years age group (29) respondents were 13% and 51+ above years age group were only 10% of the (22) respondents.

#### 3.8.1 Qualification

		-	
Education	Frequency	Percent	Cumulative Percent
Graduate	94	45	45
Masters	57	27.14	78.8
MS/M. Phil	38	17.61	17.61
PhD	8	4.76	4
Others	13	6.1	6.1
Total	210	100	

TABLE 3.3: Qualification

Table 3.3 shows that the respondents were having Education as Bachelors (94) 45%, Masters (57) 27% and MS/M. Phil(38) 18% and PhD(8) 4% and other professional(13) were 6% from the respondents respectively.

#### 3.8.2 Experience

Experience	Frequency	Percent	Cumulative Percent
0-3 Yrs.	34	16.1	25.4
4-6 Yrs.	85	42	32.4
7-10 Yrs.	68	32.38	8.7
11-15 Yrs.	14	6.66	99.6
15+ years	9	4.28	99.0
Total	210	100	

TABLE 3.4: Frequency by Experience

Table 3.4 displays that maximum number of respondents (34) remained having an experience ranging between less than 3 years were 16%, respondents (85) were having experience between the range 4-6 years, were 42%, respondents (68) were having experience ranging between 7-10 years were 32%, respondents (14) were having experience ranging between 11-15 years were 6% and 15+ years respondents(9) were only 4%. As experience includes gaining knowledge about new procedures, ideas and projects of the organization helps to bring creativity in the tasks, experience is considered as one of the most elective demographics about respondents.

#### 3.9 Time Horizons

This research is founded on cross-sectional records. In this way the time horizon of the thesis is cross sectional also. When a research will be cross-sectional, the examination would be a specific occurrence at a definite time. Cross-sectional reserved frequently consume the survey procedure. These studies might be looking to depict any occurrence to explain how elements are linked in various relations.

#### **3.10** Data Collection Method

This study used the survey data collection method. The survey methodology is typically connected with the deductive methodology. It is a popular method in business and the management sciences. This method is used to answer the, who, what, where, how much and what number of inquiries, questions. Surveys are prominent as they permit the collection of a lot of information from a sizeable population. Survey method is seen as definitive by researchers and is both nearly simple to show and to understand the information.

#### 3.10.1 Pilot Study

It was directed with the goal that it could be guaranteed that poll was substantial. The pilot considers was led on the example size of 60. In the wake of gathering every one of the 60 surveys, factors' unwavering quality was assessed which demonstrated sufficient alpha coefficient esteems. The alpha coefficient estimation of innovative self-viability was 0.50, which was low.

#### 3.11 Instruments

The data is collected through adopted measures from different sources. In measuring the variable of openness to experience a scale developed by (Javed et al., 2018) Openness to Experience, Ethical Leadership, and Innovative Work Behavior. is used in this study. The response will be appointed by using 5 point likert scale whereas 1 shows strongly disagree and 5 shows strongly agree. The sample question is, I have a vivid imagination.

With the intention of measuring the variable of epistemic curiosity a scale developed by (Mussel, Spengler, Litman, & Schuler, 2011) is used in this study. The response will be appointed by using 5 point likert scale whereas 1 shows strongly disagree and 5 shows strongly agree. The sample question is, I enjoy learning about subjects which are unfamiliar. For the purpose of measuring the variable of innovative behavior in projects a scale developed (Radaelli et al., 2014) Knowledge Sharing and Innovative Work Behaviour in Healthcare: A Micro-Level Investigation of Direct and Indirect Effects. is used in this thesis. The response will be appointed by using 5 point likert scale whereas 1 shows strongly disagree and 5 shows strongly agree. The sample question is, I usually introduce small innovations to my practice.

With the aim of measuring the variable of project culture a scale developed by (Sarros et al., 2005) The Organizational Culture Profile Revisited and Revised: An Australian Perspective. is used in this research. The response will be appointed by using 5 point likert scale whereas Likert scale 5 has been used i.e. As a mean to rate the questions, the anchors are, 1= Not at all, 2=Minimally, 3=Moderately, 4=Considerably, 5=Very Much. The sample question is, To what extent is your organization recognized for being distinctivebeing different from others.

TABLE 3.5: Variables/Authors

Variable	Instruments
Openness to experience	(Javed et al., 2018)
Epistemic curiosity	(Mussel, Spengler, Litman, & Schuler, 2011)
Innovative behavior in projects	(Radaelli et al., 2014)
Project culture	(Sarros et al., 2005)

#### 3.11.1 Reliabilities of the Scales

Reliability of scales is used to measure the ability of scale to give strong results when it is being tested for number of time. For the purpose of measuring the reliabilities of the scales, Cronbach's Alpha test was performed on the data.

TABLE 3.6:         Cronbach's Alpl	ha
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Variables	Cronbach's alpha	Items
Openness to Experience	0.694	5
Epistemic Curiosity	0.839	10
Innovative Behavior	0.651	4
Project Culture	0.859	11

In above table the Cronbach alpha of the scale are shown that is used for data collection. Table shows the reliability analysis after completing data collection. The tables shows that the scale of Openness to Experience is consisting of 5 items and Cronbach alpha show the value of alpha is (=.694) so it shows that our scale is reliable to measure the selected variable. Similarly table show that the scale used to measure Epistemic Curiosity having 10 items and Cronbach alpha test shows the value of alpha(=0.839) which is greater than 0.7 and this test recommended the reliability of scale so it shows that the innovative behavior having 4 items Cronbach alpha test shows the value of (=0.651) which is reliable to test the measure the selected variable. The table show that the value of Project culture having 11 items Cronbach alpha test shows the value of alpha (=0.859) which is greater than 0.7 it means that our scale is reliable to measure the selected variable.

#### 3.12 Data Analysis Techniques

After completing the data collection methods that have almost 210 respondents then all the response added to the SPSS software version 20 for analyzing. I have used the following procedure for analysis and they are as follows:

- 1. First of all only the questionnaire with appropriate responses was selected only.
- 2. Only, the coded variables were used and all coded variables were selected for data analysis.
- 3. For explanation of samples characteristics, frequency table were used.
- 4. Descriptive statistics was used.
- 5. Cronbach coefficient alpha was used for the reliability process of all variables.
- 6. To check the relationship of variables under study, correlation was used.

- For checking the relationship of Dependent and Independent variable, Single Linear Regression was made to work. 1
- 8. tem Preacher and Hayes Process were used for conducting mediation and moderation to determine the existence of the role of mediator and moderator between the relationships.
- 9. Through, regression and Preacher and Hayes method, the intended hypotheses were tested to check the rejection and acceptance of the proposed hypothesis

## Chapter 4

# Results

## 4.1 Descriptive Analysis

Descriptive statistics of all variables has been presented here as Openness to Experience-OTE (independent variable) between and Innovative Behavior- IB (dependent variable) where Epistemic Curiosity-EC as (mediated variable) and Project Culture-PC (moderated variable) the relationship of these variables in projects. Descriptive statistics has direct interaction with ideas and methods relating to the detailed aspects of summary and statistical information.

	Ν	Min		Max	Mean	Std. Deviation
OTE	210		1	5	4.54	0.81046
$\mathbf{EC}$	210		1	5	4.81	0.59917
IB	210		1	5	4.23	0.74635
$\mathbf{PC}$	210		1	5	4.15	0.86963

TABLE 4.1: Descriptive Statistics

The table 4.1 displays the realistic visions of the features below investigation. The table shows that the total sample size is 210 for all variables. All variables are Openness to Experience, Innovative Behavior, Epistemic Curiosity and Project Culture were rated by using five point likert scale such as 1 demonstrating "strongly disagree", 2 demonstrating "disagree" 3 means "neutral", 4 was "agree" and 5 demonstrate "strongly agree". Mean and standard deviation values show

the essence of response. Above table shows mean s for OTE=4.54, EC=4.81, IB=4.23 and PC=4.15 respectively. Whereas table show the standard deviation of OTE=0.81046, EC=.59917, IB=0. 74635 and PC=0.86963

#### 4.2 Correlation Analysis

The present study basic aim is to perform correlation analysis to comprehend the link among openness to experience and innovative behavior in projects, the mediating title of employee epistemic curiosity and moderating title of project culture for the purpose of validation of suggested hypothesis Pearson correlation discern the strength and nature of link via correlation that is range from -1 to +1. Correlation analysis is conducted in demand to know about the nature of variation among the 2 variables that if the variables differ with on an other at the similar time or not.

Correlation analysis doesn't involve relationship among two or other than two variables as it is changed from the regression analysis. In correlation analysis, Pearson correlation analysis tells about the strength and nature of the relationship through Pearson correlation range i-e from -0.1 to 0.1. Hence, through magnitude value we can conclude the strength of the relationship between two variables and that magnitude value can generalize by the distance of correlation from zero. If the correlation is greater than  $\pm 1.0$  from zero that means the relation between the two variables are solid and respectively. But if the standards are  $\pm 1.0$  zero that straightly means that there exist no relationship between the understudied variables. Positive and negative sign depicts the nature of the relationship, positive sign means increase in one variable causes increase in the other variable and that increase in one variable will cause decrease in another variable and that would be an indirect relationship.

The correlation analysis explains that Openness to Experience-OTE is positively correlate with EC (r=.406<sup>\*\*</sup>, p< .01), where Epistemic Curiosity-EC having significantly and positively correlated value (r=.189<sup>\*\*</sup>) with Innovative behavior.

Variables	OTE(IV)	EC(MED)	IB(DV)	PC(MOD)
OTE(IV)	1			
$\mathrm{EC}(\mathrm{MED})$	.406**	1		
IB(DV)	.756**	.189**	1	
PC(MOD)	.349**	.356**	.223**	1

 TABLE 4.2:
 Correlation

Project Culture-PC (moderator variable) having significant value (r=.349<sup>\*\*</sup>) and is significant at .01 where p< .01 ,project culture with epistemic curiosity having a positive and significant correlation where (r = .365, p<.01). As correlation analysis for on variable is higher than .5 than we have to perform a collinearity statics.

## 4.3 Collinearity Statistic of all Items

Items	VIF
OTE1	1.694
OTE2	1.698
OTE3	1.016
OTE4	1.038
OTE5	1.694
EC1	1.336
EC2	4.404
EC3	1.083
EC4	2.192
EC5	1.82
EC6	2
EC7	4.09
EC8	1.969
EC9	1.336
EC10	4.404
IB1	1.016
IB2	1.016
IB3	1
IB3	1.017
PC1	5.897
PC2	2.201

TABLE 4.3: Collinearity Statistic of all Items

Items	VIF
PC3	3.376
PC4	3.607
PC5	2.1
PC6	3.41
PC7	4.761
PC8	2.903
PC9	4.5
PC10	2.797
PC11	1.771

TABLE 4.4: Co linearity statistics of Constructs

Construct	VIF
Openness to experience(IV)	1.062
Epistemic curiosity(MED)	1.155
Project $culture(DV)$	1.216

Dependent variable OTE(IV) EC(MED), IB(DV), PC(MOD)

Since, the correlation between openness to experience and innovative behavior in projects. Hence, this might be the openness to experience is the reason of collinearity. Therefore, there might b a chance of collinearity therefore; we have considered the collinearity test for measurement and structure model. The results of table 3.6 and 3.7 indicate that variance inflation values for structural respectively. Since the highest value of variance inflation factor value was (1.062, 1.1555, 1.216) which is the less than 3. Therefore collinearity is not an issue in this study (Hair et al., 2014)

#### 4.4 Regression Analysis

For the analysis of existence of variables the correlation analysis has been performed but this analysis is just for the confirmation of either these variables have relationship with one another or not. So for knowing the dependencies of one variable to another regression analysis has were executed which explain that to which extent one variable depend to another variable. For this purpose preacher and Hayes (2004) has been used for mediation analysis and also used for moderation analysis. There are two types of regression analysis has been performed one is for simple regression and other is multiple regression. When only two variables are there simple regression is conducted and more than two multiple regressions is conducted. Regression analysis has been shown as below:

#### 4.5 Regression Analysis

Relations	β	SE	Т	Sig	Adj $\mathbb{R}^2$
$\begin{array}{c} OTE(IV) \longrightarrow IB(DV) \\ EC(MED) \longrightarrow IB(DV) \end{array}$			$\begin{array}{c} 19.303 \\ 5.734 \end{array}$		$0.641 \\ 0.641$

TABLE 4.5: Regression analysis

In hypothesis 1 we supposed that openness to experience related with innovative behavior. In above table regression results are shown in which  $\beta$  co-efficient is ( $\beta$ =0.838, R<sup>2</sup>=0.641) which demonstrate that the openness to experienced highly effect on innovative behavior. The R<sup>2</sup> value indicates the coefficient of determination while beta value shows the rate of change interpreting the change of 1 unit in openness to experience shows 0.838 unit change in innovative behavior in project.

In hypothesis 3 we supposed that epistemic curiosity related with innovative behavior. In above table regression results are shown in which  $\beta$  co-efficient is ( $\beta$  =0..249, R<sup>2</sup>=0.641) which demonstrate that the epistemic curiosity highly effect on innovative behavior. The R<sup>2</sup> value indicates the coefficient of determination while beta value shows the rate of change interpreting the change of 1 unit in openness to experience shows 0.249 unit change in innovative behavior in project.

Hence, results shows that openness to experience and epistemic curiosity have same value of adjusted  $\mathbb{R}^2$  that indicates the coefficient of determination while beta shows the rate of change interpreting change of 1 unit in openness to experience shows 38% change in innovative behavior and 1 unit of change in epistemic curiosity shows 0.249 unit change in innovative behavior.

#### Hypothesis 2: Openness to Experience and Epistemic Curiosity

		EC		
Predictor	β	Т	$\operatorname{Adj} \mathbb{R}^2$	Sign
OTE(IV)	0.214	4.347	0.079	0.000

TABLE 4.6: Mediated variable EC

In hypothesis 2 we supposed that openness to experience associated with epistemic curiosity. In above table regression results are shown in which  $\beta$  co-efficient is ( $\beta = 0.241$ , R<sup>2</sup>=0.079) which demonstrate that the openness to experienced highly effect on epistemic curiosity. The R<sup>2</sup> value indicates the coefficient of determination while beta value shows the rate of change interpreting the change of 1 unit in openness to experience shows 0.241 unit change in innovative behavior in project.

## 4.6 Mediation Analysis

Mediation analysis is a authentic methodology used to support answers the request in the matter of how some dominant administrator X trades its effect on the outcome variable Y and what is the fundamental instrument through which affiliation stays consistent.

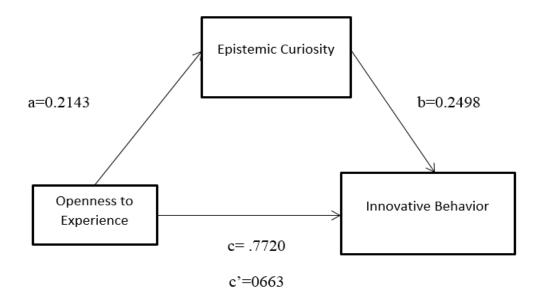


FIGURE 4.1: Mediation Analysis

IV					Bootstrap re- sults or Indirect Effects
IV Openness to Exper- ince	· - /	· - /	(c path)) 0.772	(c path) 0.0663	

TABLE 4.7: Mediation Analysis Results

Hypothesis 4 was suppose that epistemic curiosity mediate the relation between openness to experience and innovative behavior. Above table show that the direct effect of openness to experience on innovative behavior has the lower level confidence interval and upper level confidence interval of .4343 and .4114. Both ULCI and LLCI having a same sign and result show that there is no zero present in between these two values. So we conclude that ec mediates between Openness to Experience and Innovative Behavior and also showing a significant relation. Hence, hypothesis 4 is accepted.

#### 4.7 Moderation Analysis

In order to test the hypothesis H5 which states that project culture moderates the relationship between openness to experience and epistemic curiosity, we used model no 7 of process through SPSS.

TABLE 4.8: Moderation Analysis

Variable $\beta$	SE	Т	$\mathbf{Sig}$	LLCI	ULLC
OTEIV * .20021 PCMOD	0.0446	4.5339	0	2899	1142

Hypothesis 5 is project culture play the role of moderation between openness to experience and epistemic curiosity. Table shows that the results for hypothesis 5. Interaction term for moderation shows the lower limit confidence interval -.2899 values and upper limit confidence interval showing -.1142 both values shows positive sign which means there is no zero lies between these two values. Whereas interaction term showing positive and significant regression and co efficient  $\beta$ =-.20021, P=0000 which mean it moderates the relationship between Openness to Experience and Innovative Behavior and showing the strong positive relation between IV and Mediator. So we concluded that results are sported for moderation. So as per results hypothesis 5 is accepted.

TABLE 4.9: Hypotheses Testing/Results

Statement	Status
H1: Openness to experience positively influences the innovative	Accepted
behavior in project.	
H2: Openness to experience positively affects the epistemic cu-	Accepted
riosity.	
H3: Epistemic curiosity positively affects the innovative behav-	Accepted
ior in projects.	
H4: Epistemic curiosity mediates the relationship between open-	Accepted
ness to experience and innovative behavior in projects.	
H5: Project culture plays a significant moderating role on the re-	Accepted
lationship of openness to experience and epistemic curiosity such	
that if project culture is supportive there is a positive association	
between openness to experience and innovative behavior	

# Chapter 5

# **Discussion and Conclusion**

### 5.1 Discussions

Projects are organizational activities and arise in organizations for several reasons, such as market demands, strategic opportunities or needs, technological advances, and legal requirements. They have a direct effect on the organizations results (Scott-Young & Samson, 2008). The Complex business environment has driven the organization into temporary formats through projects. As indicated by setup hypothesis, associations that are multidimensional in nature speak to unpredictable, bound together ideas of various, reliant, and commonly strengthening hierarchical parts (Ozkan-Canbolat & Beraha, 2016).

The main determination of this research is to examine the association between openness to experience and innovative behavior in projects for project base organizations in the context of Pakistan the study also explore the mediating role of epistemic curiosity between openness to experience and innovative behavior. The moderation effect of project culture between epistemic curiosity and innovative behavior in projects is also been discussed in this research.

The result that has been founded of this study indicate that the openness to experience has a positive effect of innovative behavior in projects that means the openness to experience increase the behavior of employees become more innovative in projects. Therefore, H1, H2, H3, H4, and H5 are accepted developing a link between openness to experience and innovative behavior in projects through mediating role of epistemic curiosity and moderation of project culture. This implies that openness to experience increase flexibility in team which enhance the innovative behavior in projects.

The present study introduced the variable of project culture as a moderator. The analyzed data of moderator with reference to the Pakistani context positively moderates the relationship between epistemic curiosity and innovative behavior in projects for example increases in the effect of epistemic curiosity increases the employee behavior in projects. The comprehensive discussion on each of the hypothesis is as following: The present study is addressing several theoretical and contextual gaps in the literature according to the theoretical research model of the study. In this context each hypothesis has been discussed in the light of previous literature.

#### H1: There is a positive association between openness to experience and innovative behavior in projects.

The results of the study indicates that there is a positive impact of openness to experience on innovative behavior which means it enhance the behavior of employees in projects. The results of the hypothesis are ( $\beta$ =.838, t=19.303) prove the existence of significantly positive relationship between openness to experience and innovative behavior in projects. The t=19.303 value indicates the significant level of openness to experience and innovative behavior. As the value of t=19.303 is greater than 2 means that results are statistically significant. The  $\beta$ =.706 coefficient is .70% which demonstrate that if there is .641 units change in openness to experience then there is a positive change in innovative behavior.

Openness to experience is one element of the five-factor model of personality (Cureu, Ilies, Vrg, Maricuoiu, & Sava, 2019). and is usually pronounced by such words as creative, cultivated, interested, innovative, open-minded, intellectual, and imaginative. Team members with the personality having high in openness to experience are further knowledgeably challenged, inventive, creative, and focused to their own interior impressions. This result displayed that creative personality can help employees to aggressively discover novel work and other unique and convenient ideas related to product innovation. These finding support our findings that based on openness to experience trait employees show more innovative behavior which is the need of every project. Every project has to be unique and if there OTE trait of employee there is the

# H2: There is a positive association between openness to experience an epistemic curiosity.

The results of the study indicates that there is a positive effect of openness to experience on epistemic curiosity behavior which means it increase the creativity of employee. The results of the hypothesis are ( $\beta$ =.241, t=4.347) prove the existence of significantly positive relationship between openness to experience and innovative behavior in projects. The t=.437 value indicates the significant level of retrieve relationship of openness to experience and innovative behavior. As the value of t is greater than 2 means that results are statistically significant. The  $\beta$ =.241 coefficient is .24% which demonstrate that if there is 24% change in openness to experience then there is a positive change in epistemic curiosity.

Openness to experience is much more than curiosity (DeYoung, Peterson, & Higgins, 2005; Woo et al., 2014), but curiosity is identified as a single facet in many models, such as the Big Five personality traits (McCrae, 1996), and the theoretical intellect framework (Mussel, 2013a). The fact that curiosity is nested under openness to experience but positive affect is nested under extraversion (DeYoung, 2015) offers support for the distinction between curiosity and positivity/happiness. Most research on trait curiosity examines curiosity as a lower level facet using scales that target it directly (Grossnickle, 2016). Several models of trait curiosity view it as a general, unitary trait associated with the motivation to explore and learn and a tendency to experience feelings of interest (Spielberger & Starr, 1994).

The key element for reaching higher levels of organizational level is to maintain an appropriate equilibrium between exploration and exploitation. Epistemic curiosity is one of the few important aspects contributing to allow individuals to maintain this balance. Whenever this appropriate balance is achieved between alignment and adaptability only then successful implementation of the projects can be ensured. Keeping in view effects of innovative behavior is considered among the essentials required in ensuring the successful implementation and completion of projects (Lavie and Rosenkopf, 2006), along with project culture in the domain of project management. The current study putting lights the achievement struggles as behavioral process that clarifies curiosity linked outcomes from psychological process more approximately than curiosity itself. The project based organizations of Pakistan entails ambidextrous element both on organizational and individual level and relationship of temporal leadership and organizational ambidexterity is positively and significantly established as results of empirical testing of the hypothesis shows. The findings of the results support positive relation of temporal leadership with organizational ambidexterity in the contextual settings of Pakistan.

#### H3: There is a positive effect of epistemic curiosity on innovative behavior in projects.

In Hypothesis 3, it was proposed that there is positive association between epistemic curiosity and innovative behavior in projects. The results of the hypothesis  $(\beta = 0.249, t = 5.734, p = 0.00)$  proved the existence of significantly positive relationship between epistemic curiosity and innovative behavior in projects. The t value of 5.734 indicates the significant level of relationship between epistemic curiosity and innovative behavior in projects, as the value is of t is greater than 2 means that results are statistically significant. The  $\beta$  co-efficient is 0.249 which demonstrates that if there is 1% unit change in team flexibility then there is a likelihood that innovative behavior in projects would be increased by .641 units.

Researchers also distinction between innovative work behavior and creativity theoretically, and describe innovative work behaviors as applied in nature, provide fruitful results in terms of new output, deal with generation and implementation of relatively novel idea, while creativity is all about just generating entirely novel idea Anderson, De Dreu, and Nijstad, "The Routinization of Innovation Research"; de Jong and den Hartog, "Measuring Innovative Work Behaviour," March 2010; Hammond et al., "Predictors of Individual-Level Innovation at Work.". In other words, creativity is just exploration and generation of novel idea and innovative work behavior is related to the creativity, championship, and implementation of new idea.

In defining the innovative behavior researchers like, (de Jong den Hartog, & March 2010). Description of innovative behavior as the behaviors of an individual regarding the exploration, generation, championing and implementation of useful new ideas, procedures, products or processes in work settings. Therefore, from this definition it can be observed that innovative work behavior is a multi-dimensional concept and, consideration, generation, supporting, and implementation of new ideas are the main four dimensions of the phenomenon.

Project based organizations when endeavor to develop new products or services require creativity through their employees to ensure competencies required to complete projects within constraints and to maintain quality standards. The project based organizational setup in Pakistan entails creativity and innovation element along with the mechanisms of flexibility. The findings of the hypothesis establishes a positive and significant relationship between epistemic curiosity and innovative behavior on the basis of data collected from project based organizations in Pakistan.

# H4 : Epistemic curiosity mediate the relation between openness to experience and innovative behavior in projects.

In hypothesis 4 it was been suppose that epistemic curiosity mediate the association between openness to experience and innovative behavior in projects. The proposed hypothesis has been accepted because the result shows that the significant relationship of epistemic curiosity between openness to experience and innovative behavior in projects. As the results shows that upper limit is 0.4114 and lower limit is .4343 respectively and both limits have positive signs and there is no zero lies between these two limits.

In previous study that has been performed by (Mussel, 2010) the epistemic curiosity has been used as mediator with five big variable and results determines that curiosity strongly correlate with openness to experience but also showed that epistemic curiosity showed as moderator between other dimensions of personality. Previously curiosity was creating to be strongly connected with openness to experience but also moderated correlations with conscientiousness (Mussel, 2010). The present study shows results that such bivariate association by indicating the unintended properties of personality variables on innovative behavior from supportive culture and through curiosity. The study results show that the effect of epistemic curiosity on behavior from supportive culture, collaboration, team work and knowledge sharing is partly increased. However, these results suggest that greater levels of curiosity in personalities high in innovative behavior and openness to experienced are due to their concentration in adopting new ideas and the effort they allocate to obtaining new knowledge which is the basic need of every project.

Furthermore, the contribution of the literature b explaining the epistemic curiosity is not without any purpose it have many goals and achievements, curios employees will bring greater change to achieve their goals and targets and this contribution will make project more innovative and unique. By describing the association of epistemic curiosity as mediator, this research taking an important direction toward expressing the relation of epistemic curiosity enchase the level of expressing employees skill and these two terms increase the behavior of employees of project.

#### H5: Project culture moderate the relationship between epistemic curiosity and innovative behavior.

In Hypothesis 5, it was proposed that project culture as moderates the relationship between openness to experience and innovative behavior in projects. The results of the hypothesis ( $\beta = 0.2002$ , t =4.5339, p = 0.00) proved the existence of significantly positive relationship between epistemic curiosity and innovative behavior in projects. The t value of 4.53 indicates the significant level of relationship between epistemic curiosity and innovative behavior in projects, as the value is greater than 2 means that results are statistically significant. The  $\beta$  co-efficient is 0.2002 which demonstrates that if there is 1% unit change in team flexibility then there is a likelihood that innovative behavior in projects would be increased by .2002 units. Based on the literature, different culture applied on different organization and every organization have different norms and values which gives different results. To encourage these personality traits, there should be a facility that will encourage the employees about project culture where these attributes may encourage the project team for better performance. Members from all level that is, manager , experts , professional and workers should have openness to experience that may create innovative behavior which will make the project unique. The creative team makes the project or project based organizations prominent among competitors. An cognizance of the organizations culture intensifies the probability of learning the tactics becoming a natural process by experiencing in a specific project culture . Thus awareness project culture is crucial to encourage creativity , innovative approach among employees . These factor makes a strong team.

Fundamental suppositions that are imagined, found, or created by a given group as it figures out how to adapt to issues of outer amendment and interior combination. They have performed admirably enough to be viewed as substantial and, in this way, they are instructed to new individuals as the right method to perceive, think, and feel in reference to issues. As in addition, project culture is an collection of components with which people come into contact with their team members and communicate with each other which will make their relations more strong as it lead to work freely with each other. Also, the observation of project culture differs from employee to employee behavior because project-based work often involves different employees that having different skills, different level of expertise, and different experience hence have different levels of liability, and the they will mix up the project uniqueness will becomes grown u that is the need of project organization. So from our findings we can assume it that project culture gives employee skills more strengths which will increase the innovative behavior.

#### 5.2 Conclusion

The results of this study proved the hypotheses related to the research model presented in this study. These findings supported our arguments regarding the connection between Openness to Experience between and Innovative Behavior where Epistemic Curiosity as mediator variable and Project Culture moderator variable. With the existence of a comprehensive model where employees find a appropriate situational background to activate their openness experience personality, therefore an innovative work behavior will increased at the work setting.

The study detections give direction towards knowledge that have functional applications. To start with, the leader of visionary team should be at various stages in the innovative procedure, their team will becomes more creative, imaginative and curious. Second, venture based associations should have inventive groups that think about character organization and guarantee that and guarantee that there is group which have diverse idea, thoughts, inventiveness and creative mind for imaginative conduct.

Third, extraordinary information sharing techniques should be accepted at various stages in the creative procedure. In particular, idea generation depends more individually gathering of information in order to think of idea generation while the idea development stage relies upon individuals' trade to encourage information stream.

#### 5.3 Practical Implications

The study though conducted for the all team members but mangers are responsible for creating a suitable culture for the employees. Our results offer several implications for practicing professionals specially for managers. Creativity is considered as the critical element of project team. The manager should encourage the creative proposed by employees and should make these innovative ideas as the part of strategy if find suitable. Reward and incentive are good ways to bring such attributes of employees to make a stronger team . for this purpose managers shuld know the competencies and level f perception of colleagues .

Our study highlighted the important characteristic epistemic curiosity that built the innovative behavior among team members. We expanded this knowledge by merging these characteristics with openness to experience of novelty, vividness, creativity, professional expertise and market networking. Taken with combination with results it is evident with the statistical tool openness leads to innovation which leads to creativity and uniqueness with shared and strong project culture. The project success then more dependent on the synergized ideas by project team.

#### 5.4 Recommendations

As a topic of the study, this study assumes that companies should provide to encourage the innovative behavior. This is true when same operations are repeated on daily basis then there will be no occurrence of mistake. Openness to experience is also categorized by the acceptance of employees mistakes and risks that can be recorded and used as a means to stimulate particular and proficient development. In such organizational setting in project based organizations, employees are easily feel confident, they are ready to take challenges, are very encouraged to bring change and having risk taking behavior in producing and executing innovative solutions. Though such measures may not transport the anticipated results, the supportive role of project culture cracks out to be a main factor in swaying innovative behavior and further facilitate the development of employees creativity.

As we know that innovation is a healthy sign of growing culture. If project culture characterized by weak innovative behavior in project will lead to less creativity and uniqueness of project which may cause to decline the process of project life cycle towards achieving project goals. In such satiation, employees just focus on their routine work and does not encouraged them to develop extra role behavior to their projects. Because of this reason employees will not participated in extra activities which may slow down the job accomplishment of the employees.

#### 5.5 Limitations

There are some limitations in this study. This study examined the role of as Openness to Experience between and Innovative Work Behavior where Epistemic Curiosity as mediator and Project Culture as moderator in the relationship of these variables in projects. By adding some evidence from previous literature and try to fill some gaps in this current research. There are also some limitations in this study. First, this study is conducted only for the project based organizations of Pakistan and the results may not be applied to other sectors of Pakistan. Only one mediator and one moderator were tested due to time limits. However, future research can use this model to other side and add other mediators to check the results in other context.

Data were collected in small size because the reason behind this is a limited time for this study, the sample size is also a limitation of this study and data is only collected from projectized organizations and IT sectors of Rawalpindi and Islamabad so it is not represented the overall culture on Pakistan whereas the employees who are working in different cities on Pakistan exhibit different behavior due to different environment.

#### 5.6 Future Research

Our findings provide a base to other findings. In this study only one trait of personality has been targeted that is openness to experience with relationship Innovative work behavior, future research could be conducted on the effects of other Big Five personality traits like extraversions and neuroticism with creativity. Leader can groom the employee personality and creativity if leaders are supportive employees creativity will also increase so leadership. This study only have been conducted on specific organizations of Pakistan in future researcher may use these predictor for other construction organization .Can also be used as moderator in future research. Hence, future examiners may also study the role of other mediated or moderated mechanisms like inherent enthusiasm, inclusive of transformational leadership and in the relationship of openness to experience with innovative behavior in other sectors to the appropriate results.

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# Appendix A

#### Dear Respondent,

I am a research degree student of MS Project Management, at Capital University of Sciences & Technology, Islamabad.

I am conducting research on the topic: "impact of openness to experience on innovative behavior in projects with mediating role of epistemic curiosity and moderation of project culture". Openness to experience has positive impact on innovative behavior. Therefore, your participation is important in this survey. This survey approximately takes 8-1 minutes. You can help me by completing the attached questionnaire. I appreciate your participation in my study and I assure that your responses will be held confidential and will only be used for education purposes.

#### Atiqa Jabeen

MS Scholar,

Capital University of Sciences and Technology, Islamabad.

#### Please provide following information.

	1	2	3
Gender	Male	Female	Trans

	1	2	3	4
Age	18-25	2633	34-41	42 and Above

	1	2	3	4	5
Qualification	Matric	FSc	Bachelors	Masters	MPhil and Above

1	2	3	4	5
<b>Experience</b> Less than 1 year	1 5	6 10	11 15	16 and above

Please Tick the relevant choices: 1= Strongly disagree, 2= Disagree, 3= Neutral, 4= Agree, 5=

Strongly Agree

Op	enness to experience					
1	Im interested in learning about the history and politics	1	2	3	4	5
	of other countries.					
2	I would enjoy creating a work of art, such as a novel, a	1	2	3	4	5
	song, or a painting.					
3	If I had the opportunity, I would like to attend a classical	1	2	3	4	5
	music concert.					
4	People have often told me that I have a good imagina-	1	2	3	4	5
	tion.					
5	I like people who have unconventional views.	1	2	3	4	5
Epi	istemic Curiosity					
1	I enjoy learning about subjects which are unfamiliar	1	2	3	4	5
2	I am fascinating to learn new information	1	2	3	4	5
3	I enjoy exploring new ideas.	1	2	3	4	5
4	I learn something new/like to find out more.	1	2	3	4	5
5	I enjoy discussing abstract concepts.	1	2	3	4	5
6	I see a complicated piece of machinery/ask someone how	1	1	3	4	5
	it works.					
7	When I see a new kind of arithmetic problem, I enjoy	1	2	3	4	5
	imagining solutions.					
8	In an incomplete puzzle, I try and imagine the final so-	1	2	3	4	5
	lution.					
9	I am interested in discovering how things work.	1	2	3	4	5
10	In Riddle (), I always interested in trying to solve it					
	Innovative Behavior in Projects					
1	I usually introduce small innovations to my practice.	1	2	3	4	5
2	I often develop new procedures to improve my everyday	1	2	3	4	5
	practice.					
3	I often succeed in transforming my innovative ideas into	1	2	3	4	5
	practical solutions.					
4	I often develop new solutions to solve problems.	1	2	3	4	5

Plea	ase Tick the relevant choices: $1 = Not$ at all, $2 = Minimally$	, 3=	=Mc	oder	ate	ly,
4=0	Considerably, 5=Very Much					
	Project Culture					
1	To what extent is your organization recognized for its	1	2	3	4	5
	emphasis on achievement orientation					
2	To what extent is your organization recognized for its	1	2	3	4	5
	emphasis on quality					
3	To what extent is your organization recognized for being	1	2	3	4	5
	distinctive different from others					
4	To what extent is your organization recognized for its	1	2	3	4	5
	being team-oriented					
5	To what extent is your organization recognized for shar-	1	2	3	4	5
	ing information freely					
6	To what extent is your organization recognized for being	1	2	3	4	5
	people-oriented					
7	To what extent is your organization recognized for col-	1	2	3	4	5
	laboration					
8	To what extent is your organization recognized for hav-	1	2	3	4	5
	ing high expectations for performance					
9	To what extent is your organization recognized for en-	1	2	3	4	5
	thusiasm for the job					
10	To what extent is your organization recognized for being	1	2	3	4	5
	results-oriented					
11	To what extent is your organization recognized for being	1	2	3	4	5
	highly organized					

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