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THE MODERATING ROLE OF GENDER, JOB-NATURE AND JOB-DESIGNATION IN THE RELATIONSHIP BETWEEN PERSONALITY TRAITS AND KNOWLEDGE HOARDING: EVIDENCE FROM PUBLIC SECTOR HIGHER EDUCATION INSTITUTIONS IN PESHAWAR

Yasna Syed[1]
Research Scholar
Institute of Management Sciences
Peshawar, Khyber Pakhtunkhwa, Pakistan
Email: yasnasyed2@gmail.com

Dr. Awais Alam Khan[2]
Assistant Professor
Institute of Management Sciences
Peshawar, Khyber Pakhtunkhwa, Pakistan
Email: awais.alam@imsciences.edu.pk
(Corresponding Author)

Dr. Syed Zulkifal[3]
Assistant Professor
Institute of Management Sciences
Peshawar, Khyber Pakhtunkhwa, Pakistan
Email: zulkifal@imsciences.edu.pk

Maria Ishtiaq[4]
Assistant Professor
Institute of Management Sciences
Peshawar, Khyber Pakhtunkhwa, Pakistan
Email: maria.ishtiaq@imsciences.edu.pk

Abstract

Knowledge has emerged as a coveted asset for organizations, becoming a crucial source of competitive edge. Organizations invest many resources to enhance knowledge sharing among employees to foster creativity and innovation. Despite all these measures, individuals still conceal their knowledge from others in the workplace, and the existing discourse on the body of knowledge indicates a theoretical gap in this area. To address this issue, this study investigates the role of individual personality traits and moderating factors in predicting knowledge-hoarding behavior among faculty members in public-sector higher education institutions. Adopting the positive approach, primary data was collected through structured questionnaires. Results indicate that openness to experience significantly predicts knowledge hoarding, while neuroticism has no significant effect. Importantly, job designation moderates the relationship between openness to experience and knowledge hoarding. These findings contribute to understanding the factors influencing knowledge-sharing behaviors. However, the study's limitations include its focus on academic institutions and a quantitative approach. Future research could benefit from a mixed-method approach and explore other organizational aspects related to knowledge hoarding.

Keywords: Openness to experience, Neuroticism, Knowledge-hoarding, Higher Education Institutions.

Introduction

The competitive dynamics of organizations have shifted from knowledge-based resources to tangible resources at the start of the 20th century (Kerrn & Nielsen, 2008). Knowledge Management (KM) in the workplace is considered a vital resource for organizations to achieve goals and missions (Lapiņa et al., 2014; Agriofoglio et al., 2021). Modern organizations consider

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KM extremely important and strategize it (Mehralian et al., 2013; Wang & Noe, 2010; Agostini et al., 2020). However, there are associated complexities, as knowledge holders decide when and with whom to share knowledge (Jarvenpaa & Staples, 2001; Shirahada & Zhang, 2022). Employee's behavior of knowledge hoarding at their workplace is becoming a huge concern for today's organizations. The concept has recently gained attention from various scholars in KM research (Oliveira et al., 2021; Bilginoğlu, 2019; Zamrudi, 2023). Knowledge hoarding, a category of knowledge withholding, is defined as the intentional concealment of unrequested knowledge (Oliveira et al., 2021). Considering the fact that knowledge is something that resides in an individual brain and no one would ever be able to know about knowledge unless they share it, that indicates that an environment of knowledge sharing and collaboration highly depends on the individual's willingness to share knowledge (Zyngier & Nagpal, 2015; Serenko, 2020). Knowledge hoarding has become a common phenomenon among faculty members and represents a major hurdle to smooth the flow of knowledge exchange among them (Wei Chong et al., 2016). However, from employees' point of view, knowledge hoarding is a rational choice as it facilitates them to protect power, save time, maintain importance and reduce job insecurity (Razmerita et al., 2016; Amusan, 2022).

Moreover, the strength of KM behaviors varies among individuals depending on their personality types (Esmaeelinezhad & Afrazeh, 2018). Researchers (Pan & Zhang, 2018; Gupta, 2008; Akbar et al., 2023) found that personality traits have a significant impact on knowledge-sharing and withholding intentions. Therefore, many scholars have linked personality traits with KM behaviors. One of the most used personality models by researchers is the Big Five personality (BFP) traits (*openness to experience, neuroticism, conscientiousness, extraversion, and agreeableness*) (McCrae & Costa, 1987). These personality traits strongly predict work behavior (Mount et al., 2006). According to Shaukat et al. (2023), personality constitutes a pivotal psychological mechanism that changes human conduct and exerts important influence over an individual behavior to either hide or share knowledge. Among the BFP model, *neuroticism* and *openness to experience* are completely opposing personality traits (Shaukat et al., 2023; Abou-shouk. et al., 2022). *Neuroticism* is an insecure, tense and sad personality trait (Soto, 2018), While *openness to experience* is characterized by curiosity, imagination and a broad range of interests (McCrae & Costa, 1997). These traits are particularly chosen for this research to understand their effect on knowledge hoarding.

It is empirically proven that knowledge transfer significantly improves organizational performance (Argote et al., 2000; Zamfir, 2020; Camargo et al., 2024). However, organizations cannot force their employees to share knowledge; instead, they can motivate them to do so. Organizational culture, systems and every other aspect of the work environment must be considered by organizations to improve knowledge use in the workplace (Kelloway & Barling, 2000; Sawan, 2021).

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Higher Education Institutions (HEIs) have a crucial contribution in driving socio-economic growth by continuously generating and sharing knowledge to propel innovation and develop the intellectual capital pool of any country (Aziz et al., 2024; Gblollie & David, 2014). Researchers (Adamseged & Hong, 2018) consider it a basic requirement for faculty members to respond to and recognize the changes occurring in a knowledge-based society. It contributes to several activities such as training programs, research publications and developing partnerships with business organizations and industries. (Farrukh et al., 2020; Shahid & Naveed, 2020; Ramachandran et al., 2009). Therefore, these universities must be proactively engaged in developing knowledge management strategies and proper management of their knowledge assets. (Fullwood et al., 2013). However, most universities neglect KM, especially in developing countries like Pakistan. (Fullwood et al., 2013) which is a crucial issue for HEIs (Farrukh et al., 2020). Therefore, recently, many researchers highlighted the need to do more research on KM in HEIs (Chedid et al., 2022; Quarchioni et al., 2022).

Over the past few years, knowledge hoarding, its causes and consequences have become an area of interest for many scholars (Wu, 2023; Bilginoğlu, 2019). Studies highlighted its detrimental effects on trust (Holten et al., 2015) and overall organizational performance (Evans et al., 2015). Moreover, the impact of culture (Miminoshvili & Černe, 2021), dark personalities such as Machiavellianism, psychopathy and narcissism (Yang et al., 2024; Karim, 2022), and workplace ostracism (Khalid et al., 2020) on knowledge hoarding has also been studied. However, researchers have investigated the impact of personality traits on knowledge hiding (Iqbal et al., 2020) and knowledge sharing in HEIs (Gupta, 2008). However, there is a noticeable gap regarding the effect of traits on knowledge-hoarding behavior in HEIs.

This study responds to the identified literature gaps regarding the lack of research on the effects of personality traits on knowledge hoarding in HEIs. The research concentrates on individual personalities (openness to experience and neuroticism) and their effect on knowledge-hoarding behavior with a specific focus on faculty members of HEIs, as it was appropriate to conduct this research within an academic context, which mainly deals with knowledge accumulation and utilization. Moreover, demographic variables (i-e., gender, job nature and designation) are selected as moderators to get deeper insights into the research. Because many researchers (Omar & Addruce, 2019; Nagamani & Katyayani, 2013; Grubić-Nešić et al., 2015) discussed that demographic variables significantly impact the knowledge transfer of an individual among academicians. This research attempts to answer the following questions.

Rationale of the study

Knowledge management has emerged as a crucial organizational priority in recent years, especially for institutions of higher learning. To improve performance, encourage innovation, and keep a competitive advantage, these institutions mostly depend on the efficient administration and exchange of knowledge. However, one major obstacle to these objectives is knowledge

hoarding, which is the deliberate withholding of information from others. Developing solutions to lessen the harmful effects of knowledge hoarding requires an understanding of the elements that underlie it, including personality qualities. Knowing how gender, job type, and job designation modify this link could be helpful in the public sector, where resources are frequently scarce, and job functions are more defined.

Problem Statement

Knowledge hoarding is still a frequent problem in higher education institutions, even though the value of sharing knowledge in academic contexts is becoming more widely acknowledged. Certain personality traits, such as neuroticism and conscientiousness, have been associated with higher levels of knowledge hoarding, according to research, which indicates that personality traits might have a substantial impact on knowledge-sharing behaviors. However, little is known about how extrinsic factors—like gender, type of work, and job designation—modify the association between personality traits and knowledge hoarding, particularly in the context of Peshawar's public higher education system. Closing this gap is essential to creating customized plans to promote knowledge exchange and lessen faculty hoarding, which will enhance these institutions' knowledge management procedures overall.

Research Questions

1. What is the effect of Neuroticism on Knowledge Hoarding among faculty members in HEIs?

2. What is the effect of Openness to Experience on Knowledge Hoarding among faculty members in HEIs?

3. Does *gender, job nature* and *job designation* moderate the relationship between *personality traits* (Openness to experience, neuroticism) and *knowledge hoarding* of faculty members in HEIs?

Research Objectives

- To examine the effect of Neuroticism on Knowledge Hoarding among faculty members in HEIs.

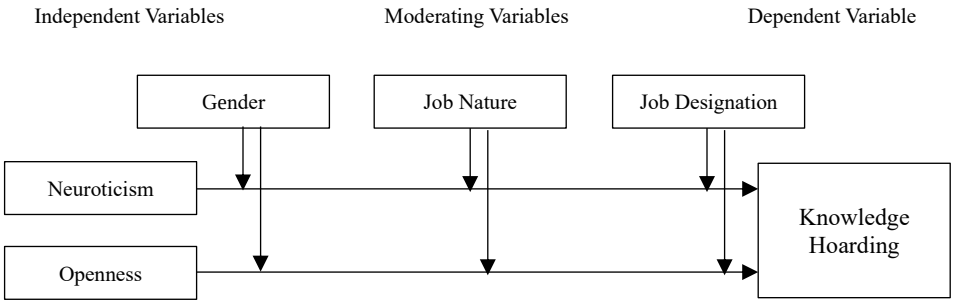
- To examine the effect of Openness to Experience on Knowledge Hoarding among faculty members in HEIs.

- To explore the moderation effect of gender, job nature, and job designation on the relationship of personality traits (Openness to experience, neuroticism) and knowledge hoarding of faculty members in HEIs.

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Theoretical framework

This framework fills a critical gap (Wu, 2023; Bilginoğlu, 2019; Holten et al., 2015; Evans et al., 2015; Miminoshvili & Černe, 2021; Yang et al., 2024; Karim, 2022; Khalid et al., 2020; Iqbal et al., 2020; Gupta, 2008) by enhancing the understanding the effect of personality traits on knowledge hoarding. By adding gender, job nature and job designation as moderators, this framework aims to explore the nuanced interactions that previous research (Gupta, 2008; Shouk et al., 2022; Shaukat et al., 2023; Omar & Addruce, 2019; Nagamani & Katyayani, 2013; Grubić-Nešić et al., 2015) have neglected. This study examines the effect of personality traits (*openness to experience* and *neuroticism*) on knowledge hoarding in public-sector HEIs. It also explains the moderating effects of job nature, job designation, and gender on the relationship between independent and dependent variables to gain in-depth insights into the research. The framework for this study is provided below.



Significance of the study

This research contributes towards clarifying the association of personalities (neuroticism and openness to experience) with knowledge hoarding. The findings of the moderating variables (i-e., gender, job nature, job designation) by which personality traits influence knowledge-hoarding behavior could expand the scope of the literature. Second, it gives faculty members useful insights into how openness to experience and neuroticism impact knowledge hoarding in an academic context. Thirdly, the study explored that the direct effect of openness to experience on knowledge hoarding was stronger with the moderating effect of job designation. So, it suggests that HEIs should pay more attention to job ranks while discussing knowledge-hoarding behavior. This study can guide regulatory bodies for HEIs in developing programs that promote an environment of knowledge sharing and reduce knowledge hoarding behaviors to optimize academic results and the performance of the institutions.

Literature Review

Knowledge Hoarding

Knowledge hoarding refers to the act in which people prefer to keep their information, capabilities, expertise, ideas, and inventions to themselves (Subramanian, 2001). Knowledge hoarding is the intentional concealment of unrequested knowledge (Evans et al., 2015). It occurs across organizations when

employees try to resist knowledge sharing and prefer retaining it (Silva de Garcia et al., 2022). The concept is also viewed as the accumulation of knowledge that may or may not be shared in the future (Hislop, 2003). Knowledge hoarding is practiced due to personal interests, i.e., job security, competitive edge or power and maintains knowledge monopoly (Wu, 2023; Fuller, 2001).

Knowledge hoarding behavior increases when employees perceive knowledge as their asset and believe sharing it will decrease their worth (Muqaddas et al., 2016). Bilginoğlu (2019) argued that knowledge hoarders control critical knowledge to preserve their expertise. This may be due to a lack of trust among employees (Silva de Garcia et al., 2022). Knowledge hoarding is linked with the perception of trust and justice among employees (Holten et al., 2015). According to Muhenda and Lwanga (2014), employees agreed that they would hoard certain knowledge if they knew that they were the only source of it, indicating the desire for power in the workplace.

Other important barriers that lead to knowledge-hoarding behavior are organizational culture (Miminoshvili & Černe, 2021) and several obstacles such as lack of motivation, insecurity, ego, and lack of communication (Amusan, 2022). Moreover, Workplace ostracism and Machiavellianism are considered important aspects of knowledge-hoarding behavior (Khalid et al., 2020 & Yang et al., 2024). Knowledge hoarding adversely affects organizational performance (Evan et al., 2015; AL-Abbadi et al., 2020). Knowledge hoarding leads to a lack of creativity, inefficiency in achieving organizational goals and objectives, and increased conflicts in the workplace (Amusan, 2022).

Researchers believe that knowledge hoarding is more prevalent in public sector organizations (Cong et al., 2007). Research conducted in three public sector universities in Pakistan revealed that the main drivers of knowledge-hoarding behavior among faculty members are the urge to obtain promotion opportunities, greater status, the need to impress superiors and poor link of rewards with knowledge-sharing behavior. The study revealed that faculty members hoard knowledge related to research software such as SPSS, AMOS etc., to retain their competitive edge (Muqadas et al., 2016). Similarly, in other developing countries in the Middle East, Africa, and South America, the knowledge-sharing culture among faculty members of HEIs is insufficient (Ali et al., 2014). However, personality traits can contribute to knowledge hoarding (Pan & Zhang, 2018). Individuals with openness to experience traits are highly opportunistic, while individuals with neurotic personalities have extreme anxiety and stress (Masood et al., 2022 & Soto, 2018). Therefore, Individuals with openness to experience and neuroticism have the possibility of knowledge hoarding (Iqbal et al., 2020; Muqadas et al., 2016).

To overcome knowledge hoarding, a proper reward system in organizations should be developed focusing on physiological rewards by considering a sense of being connected, a sense of self-efficacy, self-confidence, a sense of trust, a sense of accomplishment, sense of being valued, a sense of respect and acknowledgment (Al-Alawi et al., 2007; Cong et al., 2007 & Šajeva,

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2014). Strategies should be addressed to reduce knowledge hoarding in firms, such as introducing rewards or incentives for knowledge sharing, promoting an environment of collaboration, establishing better knowledge management systems, encouraging employees' trust and establishing social-emotional relations (Wu, 2023; Jabbary & Madhoshi, 2015).

Neuroticism

Neuroticism is the broad dimension of personality traits that represents the degree to which an individual finds the outside world frustrating, harmful, and scary (McCrae & John, 1992). According to Soto (2018), highly neurotic people are more likely to experience anxiety, mood swings and sadness. Previous studies (Widiger & Oltmanns, 2017; Lahey, 2009) demonstrated that highly neurotic individuals are dissatisfied and stressed, due to which they are more likely to have some physical and social issues. Ruiz et al. (2022) relate the feeling of guilt with those people who are highly neurotic. Job insecurities among employees increase knowledge-withholding behavior, which reduces an employee's innovative work behavior (Aliane et al., 2023).

Various researchers argue that the neuroticism trait increases an individual's knowledge-hoarding behavior (Esmaeelinezhad & Afrazeh, 2018). Researchers (Gupta, 2008; Shouk et al., 2022; Shaukat et al., 2023) explored the detrimental effects of neuroticism on knowledge sharing within HEIs. Another study revealed that employees serving as faculty members in the academic sector of Pakistan with high neuroticism traits prefer to withhold knowledge (Iqbal et al., 2020). Similarly, Holten et al. (2015) stated that individuals who are insecure and have trust issues have the proclivity to engage in knowledge-hoarding behavior. The fact is that neurotic individuals are tensed at heightened anxiety levels (McCrae & John, 1992). Therefore, the first hypothesis of the present study is proposed as follows.

H_1: Neuroticism has a significant effect on knowledge hoarding among faculty members in HEIs

Openness to Experience

Individuals with openness to experience traits are broad-minded, curious and flexible (Ela, 2019). Individuals with high openness to experience tend to learn critical thinking, a sense of beauty and art, and the ability to come up with fresh ideas and vice versa (Soto, 2018). Openness to Experience includes a range of characteristics, i.e., inventiveness, opportunistic nature and creativity (Masood et al., 2022). Openness to experience increases creativity among individuals, such as radical and incremental creativity, as well as enhances the ability to observe and control their conduct (Tan et al., 2019; Abbasi et al., 2023). There are 3-main conditions: internationalization, digital competence and teaching character, promoting openness to new experiences among teaching staff (Opmane et al., 2023).

Researchers Gupta (2008), Shouk et al. (2022), Shaukat et al. (2022), and Anwar (2016) demonstrated the influence of openness to experience on

knowledge transfer, which indicated that individuals with high openness to experience trait tend toward knowledge-sharing behavior (Iqbal et al., 2020). However, other researchers demonstrated the positive influence of openness to experience on knowledge withholding (Anand & Jain, 2014; Teh et al., 2011). It has also been found that individuals with openness to experience traits are highly opportunistic Masood et al. (2022), increasing the probability of engaging in knowledge-hoarding behavior (Muqadas et al., 2016). Based on this discussion, the second hypothesis of the study is proposed as follows.

H_2: Openness to experience has a significant effect on knowledge hoarding among faculty members in HEIs.

Variations of Knowledge Hoarding Due to Gender

According to previous research, women exhibit higher levels of neuroticism traits as compared to men. At the same time, personality traits like openness to experience have no significant difference across genders Costa et al., (2001). However, aesthetics and feelings are higher in women than men, whereas openness to ideas is higher in men than in women (Weisberg et al., 2011; Costa et al., 2001). These significant differences in personalities due to gender could bring variations in knowledge-sharing intentions. Research conducted by Le Tan and Dai Trang (2017) showed variations in knowledge sharing due to gender. The research explained that males have more tendencies towards knowledge sharing than women. It is also consistent with the findings of research conducted on senior high school teachers in Ghana, which found that male teachers had a higher tendency to share knowledge than female teachers. However, these results are contradictory to the findings of Grubić-Nešić et al. (2015), which revealed that women share more knowledge than men. As evident from the variations of knowledge-sharing intentions due to gender (Choi et al., 2020) in existing literature, it could be assumed that gender could have a significant moderating effect, and this constitutes the third and fourth hypotheses of this research.

H_3: Gender significantly moderates the relationship between neuroticism and knowledge hoarding of faculty members in HEIs.

H_4: Gender significantly moderates the relationship between openness to experience andknowledge hoarding of faculty members in HEIs.

Variations of Knowledge Hoarding Due to Job Designation

Researchers (Nagamani and Katyayani, 2013 and Omar and Adruce, 2019) demonstrate that variations in knowledge-sharing intentions are exhibited among employees having different job titles. Research revealed that professors tend towards knowledge sharing more than associate professors, followed by assistant professors. This is consistent with the findings of Lou et al. (2007), where significant differences in knowledge-sharing intentions were found across different job titles. The differences were based on four knowledge-sharing aspects (situation, behavior, incentive and motive). As evident from the

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variations of knowledge-sharing intentions due to the existing literature on job designation, it could be assumed that job designation could have a significant moderating effect.

H_5: Job designation significantly moderates the relationship between neuroticism and knowledge hoarding of faculty members in HEIs.

H_6: Job designation significantly moderates the relationship between openness to experience and knowledge hoarding of faculty members in HEIs.

Variations of Knowledge Hoarding due to Job Nature

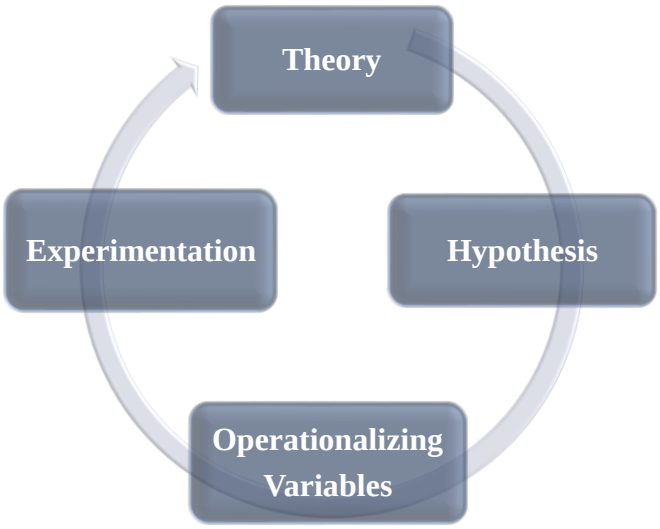
Grubić-Nešić et al. (2015) found significant differences in knowledge-sharing intentions due to an employee's job position. The study found that employees with higher job positions tend to share more knowledge. As evident from the variations of knowledge-sharing intentions due to Job nature in existing literature, it could be assumed that Job nature could have a significant moderating effect.

H_7: Job nature significantly moderates the relationship between neuroticism and knowledge hoarding of faculty members in HEIs.

H_8: Job nature significantly moderates the relationship between openness to experience andknowledge hoarding of faculty members in HEIs.

Research Methodology

In alignment with the research objectives and research questions, this research fits within the positivism paradigm, and a Hypothetico-Deductive Model of Science is adopted to attain the research objectives (Park et al., 2019).



Circular Process

This study was conducted to enhance our understanding of the influence of personality traits n (openness to experience, neuroticism) on knowledge hoarding with moderating effects of demographics. In the light of gaps identified in the existing literature, all hypotheses for the current study were developed. Then, after developing the data collection tool, the study employed survey methodology to collect required data from faculty members serving in highly recognized four public-sector HEIs in Peshawar (Gürbüz, 2017). A quantitative approach was employed in the study. This research found the effect of independent variables on the dependent variables, making it Explanatory Research.

Target Population and Sampling

Faculty members are often engaged in work-related activities and are actively involved in knowledge generation and utilization. Therefore, faculty members of public-sector HEIs were taken as a population. Faculty members serving in the management and computer science departments were specifically selected for the study, as it was convenient to conduct surveys within a limited scope.

The research employed a census technique to collect data from 214 faculty members. As stated by Singh and Masuka (2014), the census technique is more appealing to small populations. Therefore, the entire population comprised professors, assistant professors, associate professors, and lecturers serving in public-sector higher education institutions (HEIs) in Peshawar. Data was collected using a structured questionnaire that reflects the traits and knowledge-hoarding behaviors of individuals. Faculty members of HEIs filled out the questionnaires through in-person visits to ensure maximum validity and reliability of the data. The HEIs included in the research for data collection were the Institute of Management Sciences, University of Agriculture, University of Peshawar, and Islamia University.

Instruments

The inventory used to measure the independent variables was adopted from the 44-item Big Five personality inventory developed by John and Srivastava (1999), from which only two dimensions (openness to experience and neuroticism) were selected for the research. The traits comprised 18 items, with openness to experience including 10 items and neuroticism comprising 8 items. Additionally, the knowledge-hoarding measurement scale was adopted from Evans et al. (2015), which consisted of 4 items to assess how individuals engage in knowledge-hoarding behavior. All questions were measured on a five-point Likert scale.

Data Entry, Cleaning, and Analysis

In the first phase, after entering, cleaning and organizing the collected data in the SPSS software, the descriptive statistics were carried on the data to find out the level of openness to experience, neuroticism and knowledge

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hoarding among faculty members of HEIs. Then, after computing the mean values in the data set, multiple regression analyses were conducted to determine the impact of personality traits (openness to experience, neuroticism) on knowledge hoarding. In the third phase, after creating the moderating interactions, hierarchal multiple regression was carried out to explore those demographic variables, which significantly moderate the relationship between traits and knowledge hoarding.

Analysis and Interpretation

Table 01: The Main Features of the Sample

Demographics		Frequency	Percent
Age	20-30	17	9.4
	31-40	57	31.7
	41-50	91	50.6
	51-60	15	8.3
Gender	Male	99	55
	Female	81	45
Marital Status	Single	32	18.3
	Married	137	78.3
	Others	6	3.4
Education	Bachelor's	7	3.9
	Masters	26	14.4
	MS/M.Phil.	59	32.8
	Ph.D.	88	48.9
Work Experience	1-5 years	11	6.1
	6-10 years	30	16.7
	11-15 years	76	42.2
	More than 15	63	35
Work Experience in Current Organization	1-5 years	25	13.9
	6-10 years	68	37.8
	11-15 years	47	26.1
	More than 15	40	22.2
Nature of Job	Contract	25	13.3
	Permanent	155	86.7
Job Designation	Professor	12	6.7
	Associate Professor	33	18.3
	Assistant Professor	70	38.9
	Lecturer	65	36.1
Department	Management Sciences	91	50.6
	Computer Sciences	89	49.4

Table 1 provides a summary of the main features of the sample. In total, 214 questionnaires were distributed among faculty members of the computer science and management sciences department from all the four public sector HEIs of Peshawar, out of which 180 questionnaires were returned with a response rate of 84%. The response rate from each department was almost equal. The faculty members were classified into four categories based on job ranks, i-

e., professors (response rate of 6.76%), associate professors (response rate of 18.33%), assistant professors (response rate of 38.89%) and lecturers (response rate of 36.11%) in which 55% were male while 45% were female. Further, the highest responses from faculty members were obtained from HEI4 (response rate of 41.67%). Most of the responses were between the ages of 41-50, while the lowest responses obtained were above the age of 50 (response rate of 8.33%). According to the obtained results, faculty members are highly qualified, as 48.89% of the faculty members have a Ph.D., followed by 32.8% of faculty members qualifying for MS/MPHIL. Most faculty members have work experience ranging from 11 to 15 years within their institutes, having permanent jobs. These results clearly indicate that faculty members working in the top four HEIs in Peshawar are highly experienced.

Table 02: Descriptive Statistics Results

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Openness	180	2.10	2.40	4.50	3.589	0.405	0.164
Neuroticism	180	2.25	2.25	4.50	3.297	0.435	0.190
Knowledge Hoarding	180	4.00	1.00	5.00	3.375	0.763	0.583
Valid N (listwise)	180						

Table 02 provides a comprehensive overview of the descriptive statistics for three variables: Openness, Neuroticism, and Knowledge Hoarding. These statistics offer valuable insights into the central tendency, dispersion, and variability of these variables within the dataset. The mean value shown in the above table provides different viewpoints of faculty members in HEIs. The mean value and standard deviation for openness to experience suggest that a majority of faculty members in HEIs mostly exhibit this trait. The mean value and standard deviation for neuroticism and knowledge hoarding showed that faculty members of HEIs are at moderate levels of this trait.

Table 03: Multiple Regression Analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.
1	0.283a	0.080	0.070	0.736	7.726	0.001b

To examine the effect of openness to experience and neuroticism on knowledge hoarding, regression analysis was performed (Table 3). The correlation coefficient R (.283[a]) shows a weak positive correlation between variables. The coefficient of determination R—square indicates that 8% of the variation in knowledge hoarding is explained by neuroticism and openness to experience (Figure 1).

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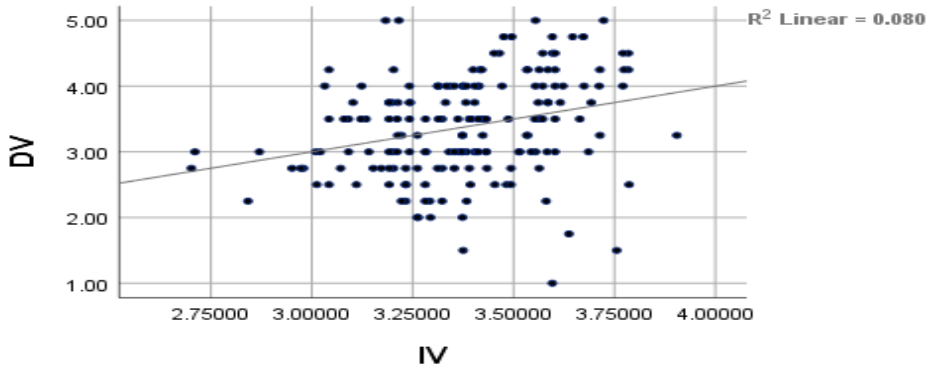


Figure 1: Multiple Regression Analysis Graph

Table 04: Moderation Results					
Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	1.052	0.637		1.648	0.101
Neuroticism	0.158	0.126	0.090	1.248	0.212
Openness	0.503	0.136	0.267	3.701	0.000

According to the results shown in (Table 4), the p-value for openness to experience is less than 0.05, clearly indicating that openness to experience has a significant effect on knowledge hoarding. Hence, hypothesis (H2) is accepted. However, the p-value (0.21) for neuroticism, which is greater than 0.05, indicates that it does not affect knowledge-hoarding behavior in faculty members of public HEIs. Hence, hypothesis (H1) is rejected.

Moderation Analysis

Table 05: Hierarchical Multiple Regression for Moderation Analysis						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.
1	0.421a	0.177	0.123	0.714	3.290	0.000b

a. Predictors: (Constant), Openness, Gender, Job nature, Associate professor, assistant professor, lecture, OE-Gender, OE-Job nature, OE- Associate professor, OE-Assistant professor, OE-lecturer

To examine the moderation effect of three moderators (Gender, Job nature and job designation), hierarchical multiple regression analysis was performed (Table 5). The coefficient of determination adjusted R-square indicates that a 12.3% variation in knowledge hoarding is explained by openness to experience and moderators.

Table 06: Moderation Results					
Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	8.873	2.671		3.321	0.001
Openness	-1.654	0.736	-0.877	-2.246	0.026
Gender	-0.143	0.112	-0.093	-1.275	0.204
Job Nature	0.067	0.171	0.030	.394	0.694
Associate professor	0.509	0.244	0.259	2.087	0.038
Assistant professor	0.389	0.226	0.249	1.718	0.088
Lecturer	0.519	0.231	0.328	2.247	0.026
OE-Gender	-0.205	0.284	-0.066	-0.722	0.471
OE- Job Nature	0.495	0.457	0.246	1.084	0.280
OE- Associate professor	2.089	0.685	0.496	3.051	0.003
OE- Assistant professor	1.579	0.649	0.582	2.434	0.016
OE- Lecturer	2.189	0.675	0.603	3.242	0.001

According to the results in (Table 6), job designation significantly moderates the relationship between openness to experience and knowledge hoarding. The P-value for all academic ranks in job designation is statistically significant, i.e., associate professors (0.*003<0.05*), assistant professors (*0.01 < 0.05*) and lecturer (*0.001 <0.05*) by using the most senior rank (Professor) as the reference category. Hence, H6 is accepted. These results indicate that faculty members with an openness to experience trait serving within three job ranks (associate professor, assistant professor and lecturer) in pubic-sector HEIs of Peshawar tend to hoard more knowledge, as compared to professors, implying that relationship between openness to experience and knowledge hoarding varies among different academic ranks in HEIs. However, P-values for other demographics, i.e., Gender (0.471 > 0.05) and Job nature (0.280> 0.05), do not moderate the relationship between openness to experience and knowledge hoarding. Therefore, H4 and H8 are rejected.

Table 07: Hierarchical Multiple Regression for Moderation Analysis						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.
1	0.258[a]	0.067	0.005	0.761	1.090	0.372[b]

a. Predictors: (Constant), Neuroticism, Gender, Job nature, Associate professor, assistant professor, lecture, N-Gender, N-Job nature, N- Associate professor, N-Assistant professor, N-lecturer

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The coefficient of determination adjusted R-square in (Table 7), indicates that 0.5% variation in knowledge hoarding is explained by neuroticism and moderators.

Table 08: Moderation Results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.612	1.431		1.826	0.070
Neuroticism	0.085	0.429	0.048	0.197	0.844
Gender	-0.221	0.116	-0.145	-1.899	0.059
Job Nature	0.154	0.177	0.069	0.868	0.387
Associate professor	0.501	0.270	0.254	1.854	0.066
Assistant professor	0.387	0.250	0.248	1.547	0.124
Lecturer	0.573	0.257	0.361	2.231	0.027
N-Gender	-0.039	0.275	-0.015	-0.141	0.888
N- Job Nature	0.056	0.453	0.030	0.123	0.902
N- Associate professor	0.040	0.398	0.010	0.102	0.919
N- Assistant professor	0.114	0.324	0.041	0.351	0.726
N- Lecturer	-0.631	0.566	-0.085	-1.113	0.267

According to statistical results provided in (Table 8), all three moderators (i-e., gender, job nature, and job designation) do not moderate the relationship between neuroticism and knowledge hoarding. Hence, H3, H5 and H7 are rejected.

Discussion

The first objective of this research was to study the effect of neuroticism on knowledge hoarding among faculty members in HEIs (H1). The second was to study the effect of openness to experience on knowledge hoarding among faculty members in HEIs (H2). The Third was to identify potential moderating variables among gender, job nature and job designations that strengthen or weakened the relationship between personality traits (openness to experience, neuroticism) and knowledge hoarding among faculty members in HEIs (H3, H4, H5, H6, H7, and H8). Data was collected from 180 faculty members serving in different public HEIs of Peshawar, Pakistan. The results showed that openness to experience has a positive and significant effect on knowledge-hoarding behavior. This means that H2 is accepted. The result indicated that individuals with openness to experience traits hoard knowledge from others. These results are consistent with the findings of researchers (Teh et al., 2011; Anand & Jain., 2014), who argued that individuals with high openness to experience traits have an inverse relationship with knowledge-sharing behavior. Similarly, Different (Bordia et al.,2006; Zhou et al., 2019; Qadir & Farooq, 2018) found that evaluation apprehension can lead to this kind of behavior among

individuals. However, these results are contradictory to the findings of various researchers (Gupta, 2008; Abou-Shouk et al., 2022; Shaukat et al., 2022; Anwar, 2016; Esmaeelinezhad & Afrazeh, 2018). They have explored the positive intentions of sharing knowledge among individuals who have a high level of openness to experience. However, in this research, the reason behind such outcomes might be several organizational aspects, such as competitiveness within organizations generating a constant pursuit of appreciation, resources and career development opportunities. Based on such pressures, faculty members might consider knowledge hoarding a better way to enhance their standing within their institutes. Masood et al. (2022) considered individuals having openness to experience traits highly opportunistic. This supports the possibility of individuals with openness to experience traits to indulge in knowledge hoarding to retain their expertise (Bilginoğlu, 2019) and to utilize several opportunities to achieve their objectives. Wu (2023) stated that personal interests such as job security, competitive edge or power enhance the conduct of knowledge hoarding in organizations. Moreover, the lack of a reward system is one of the reasons for knowledge hoarding among individuals with a high openness to experience traits. Researchers (Earl, 2001; Liebowitz., 1999) considered the reward system an important factor affecting knowledge-sharing behaviors. Al-Alawi et al. (2007) discussed that the alignment of the reward system with sharing is important to enhance the sharing of knowledge within organizations. Hence, this indicates the need to explore potential rewards that lead to an individual's willingness to share knowledge in HEIs. Moreover, various researchers argued that individuals withhold knowledge and feel hesitant to share it due to cultural differences (Raza & Awang, 2020; Miminoshvili & Černe, 2021). This is aligned with Abbassi et al. (2021) findings that in Pakistan, organizational culture impacts knowledge-sharing behavior. The study demonstrated that individual factors (knowledge sharing ability and motivation) and organization factors (formal or informal knowledge governance mechanism, top management support and knowledge sharing opportunity) are important to enhance knowledge sharing behavior of teachers serving in the higher education sector.

Further statistical results of the study showed the insignificant effect of neuroticism on knowledge hoarding, which indicates that H1 is not accepted. This means that faculty members with neurotic personalities within these HEIs do not significantly predict knowledge-hoarding behavior. The reason is unclear, but it might be possible that faculty members serving in HEIs consider neuroticism traits as their emotional state, or maybe they prefer other organizational factors to deal with their anxiety and stress; therefore, statistical results indicate an insignificant relationship. Research conducted by (Teh al. 2011) revealed that individuals with the neuroticism trait are vocal and have the proclivity to engage in knowledge-sharing behavior. Further, this statistical outcome might be due to various factors, such as the level of trust among individuals or an urge to enhance social relationships. By considering neuroticism traits such as anxiety or stress, it could be possible that faculty members having neurotic personalities might prefer knowledge share to optimize social-emotional relationships for obtaining validation and alleviating

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emotional distress. Moreover, the trust among faculty members in these institutions might also be the reason for such a result, indicating the existence of a strong relationship between neuroticism traits and knowledge hoarding. As far as knowledge management behaviors are concerned, trust among employees is considered very important (Silva de Garcia et al., 2022).

The research also analyzed the moderating effects of three demographics (Gender, Job Nature, and Job designation) by using a hierarchal regression model. The research found that within job designation, all ranks (Professor, Associate professor, Assistant professor and lecturer) significantly moderate the relationship between openness to experience and knowledge hoarding. Hence, H6 is accepted. The results indicated that faculty members with lower job ranks (associate professor, assistant professor, and lecturer) tend to hoard more knowledge when they are open to experience, as compared to those with higher job ranks (Professor). The results are debatable, as research conducted by Omar and Addruce (2019) explored that knowledge-sharing intentions vary among individuals with different job ranks. The results showed that in HEIs, lecturers with openness to experience have the highest impact on knowledge hoarding compared to professors, followed by associate professors and assistant professors. All these findings strengthen the relationship between openness to experience and knowledge hoarding. Moreover, other moderators (gender and job nature) failed to moderate the relationship between openness to experience and knowledge hoarding. Hence, H4 and H8 are rejected

Additionally, the statistical results indicated the insignificant effect of neuroticism on knowledge hoarding. However, by considering variations in knowledge-sharing intentions due to different demographic variables (Omar & Addruce, 2019), the moderating analysis on particular demographics (gender, job nature and job designation) between neuroticism and knowledge hoarding has been carried out to explore whether or not these moderating variables bring any improvements in the relationship of neuroticism and knowledge hoarding. The results showed that all moderators (gender, job nature and job designation) failed to moderate the relationship. Hence, H3, H5, H7 are rejected.

Conclusion

The study was conducted on faculty members of management and computer science departments serving in the highly recognized four public sector HEIs of KP, Peshawar region. The study focused on finding the effect of openness to experience and neuroticism on knowledge hoarding. Moreover, three demographic variables (gender, job nature and job designation) were analyzed to find out their moderating effect on the relationship between traits (openness to experience, neuroticism) and knowledge hoarding. The results revealed that openness to experience has a significant effect on knowledge hoarding. However, neuroticism has no significant effect on knowledge hoarding in HEIs. Further, results revealed that only job designations with four categories (professors, assistant professors, associate professors, and lecturers) moderate the relationship between openness to experience and knowledge hoarding. However, other demographics, such as gender and job nature, failed to

moderate the relationship. Similarly, all these demographics failed to moderate the relationship between neuroticism and knowledge hoarding.

Recommendations

Higher education institutes (HEIs) in the Peshawar area are advised to concentrate on increasing faculty members' receptivity to new experiences in order to curb information hoarding tendencies. Faculty members can better appreciate the need of knowledge exchange by participating in training programs that foster creativity, curiosity, and a willingness to share knowledge. Furthermore, as job designations were found to mediate the relationship between personality traits and knowledge hoarding, organizations should take them into account when putting strategies to minimize knowledge hoarding into practice. To promote a culture of information sharing, targeted interventions for lecturers, associate professors, assistant professors, and professors could be created, such as role-specific workshops or reward schemes. Furthermore, the lack of discernible moderating effects from gender and job type indicates that job roles and personality traits, rather than demographics, should be the main target of treatments.

Limitations of the study

The major limitation of this research is that data is solely obtained from academic institutions; however, future studies can also consider other sectors for data collection. Second, the population size was limited to two departments (i-e., management and computer science) within four public-sector HEIs; future studies may also consider other departments. Third, the research was quantitative, and a questionnaire-based data collection technique was used. So, Future studies may use mixed methodologies to gain both objective and subjective insights into the underlying phenomenon. Lastly, future researchers may adopt other organizational aspects of knowledge-hoarding phenomena, such as organizational culture, reward systems, or organizational support.

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