Improving Creativity through Workforce Diversity: A Case of Higher Education Institutions of Khyber Pakhtunkhwa

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Abstract

This study empirically tests the impact of workforce diversity on creativity among teaching faculties of universities in Khyber Pakhtunkhwa. Employing a convenient sampling technique, a sample of 180 employees - Lecturers, Assistant Professors, Associate Professors, and Professors of the universities - is collected from the universities situated in Khyber Pakhtunkhwa. A total of 180 questionnaires were disseminated among the respondents out of which 160 appropriate questionnaires were received forming a percentage of 88.8%. Multiple analyses - descriptive statistics, reliability analysis, correlation analysis and regression analysis – are conducted to make sure the findings are reliable and meet the scientific rigor. The results of the research reveal that workforce diversity as a whole and its dimensions - Age diversity, Gender diversity and Education diversity – have significant impacts on creativity. This implies that the administration of the universities should make sure to induce diversity in their workforce to enhance learning, teaching, and research as well as enrich the students' experience.

Keywords: Workforce Diversity, Age Diversity, Gender Diversity, Education Diversity, Creativity.

Introduction

In today's global, dynamic and ever-competitive environment, workforce diversity has become a reality and plays an imperative part in the success of a firm. This requires organizations to ensure to select and retain employees from different demographic backgrounds (Hingorani, S., 2022), such as different races, gender, ability, occupation, language, beliefs, education and lifestyle (Alesina and Ferrara, 2005; Simonneau et al., 2009).

Workforce diversity plays a vital role in an organization's success (Hingorani, 2022). For example, it drives workplace inclusion directly and employee engagement indirectly through workplace inclusion as well as influences perceptions of employees towards a culture of knowledge sharing (Goswami and Kishor, 2018). Moreover, it has been reported as a strong predictor of problem-solving, creativity, better decision-making, improved productivity and reputation, as well as lowered rates of employee turnover (Saxena, 2014). On the other hand, in the healthcare sector, firms lacking diversity in their workforce has led to challenges for people of color in accessing healthcare services, results, and impartiality (Wilbur, Synder, Essary,

Reddy, Will, and Saxon, 2020). More to the point, the review of the literature confirms its connection with human resource management (Qasim, 2017; Homan, Buengeler, Eckhoff, van Ginkel and Voelpel, 2015; Barta et al., 2012). Similarly, Barta et al., (2012) have proven that it has a strong influence on several factors in an organization including creativity. Likewise, Erasmus et al., (2007) have validated the significant and strong impact of diversity on problem-solving ability.

From the extant literature, we acknowledge that there are a number of studies that report the significant impact of workforce diversity on creativity in different contexts (e.g. Erasmus, 2007; Richard, 2000, 2003; Neibuhr, 2006). In the context of Pakistan, very few studies have tested the association between workforce diversity and creativity/innovation, for instance, Mahmud, Majid Yusof, Foziah, Sabir, Mahmood and Nawal (2020) test the relationship in the banking sector whereas Mushtaq, Haider and Khan (2015) confirm the connection in the telecom sector. Specifically, in the higher education sector, the relationship between the two has not been tested comprehensively at least to the best of the author's knowledge. For instance, in the educational context, Sohail et. al (2012) and Rab et al., (2013) conducted their research in Pakistan, whereas Qasim (2017) tested the relationship in Afghanistan. Hence this study aims to explain the role of workforce diversity as a whole and its dimensions in driving creativity among higher education institutions in Khyber Pakhtunkhwa.

The following section presents a review of the literature on workforce diversity and its association with creativity. which is followed by describing the methodology. Relevant, robust, and rigorous statistical analyses are conducted to ascertain the hypotheses developed in the review of the literature section. Finally, these findings are analyzed and discussed followed by drawing conclusions and discussing profound implications.

Literature Review 7 of Business & Towns

Workforce Diversity

Like a double-edged sword, diversity in the workforce, on one hand, if managed properly, induces enhancing creative performance, making better decisions, and troubleshooting problems in the most effective and efficient ways (Madera, 2013), as well as driving innovative abilities of employees (Mahmud et al., 2020). On the contrary, it leads to initiating discriminatory practices, causing conflicts, stereotyping employees, and inducing inconsistent employment (Madera, 2013). In the case of the group-forming stage, both cognitive processes and emotional responses have been reported as undermined by the presence of diversity in the workforce. Likewise, misunderstanding and lack of getting along among the team members lead to conflict and disappointment that ultimately reflect poor operational and creative performance (Homan et al., 2015).

The nature of diversity in one country is quite different from another country. The reasons for these include the fact that workforce diversity recognizes the reality that many factors come into play such as social, economic, and religious status, ethnicity and orientation, as well as the gender and age of a person that differentiate it from others (Lawler, Chen, Wu, Bae and Bai, 2011).

Workforce Diversity and Creativity

Two theories help explain the relationship between workforce diversity and creativity. One is 'self-categorization' and the other is 'social identity'. These theories advocate that employees label themselves into different groups owing to personality dimensions or associate themselves with groups that they can relate with. Consequently, employees tend to favor their group members against other group members (Kunze et al., 2009).

Several researchers argue that workforce diversity is associated with creativity (Erasmus, 2007; Richard, 2000, 2003; Neibuhr, 2006). In this connection, Richard (2000, 2003) finds a direct link between workforce diversity with creativity. Similarly, Alder (2002) concludes a favorable influence of workforce diversity on the problem-solving skills of the employees. Additionally, Gomez-Mejia et al., (2006) study suggest that workforce diversity plays a vital part in fostering problem-solving and creativity.

Workforce diversity is a blueprint for creativity (Skarzynski and Gibson, 2008; Pinto, 2011). In this regard, Erasmus (2007) concludes a significant association between workforce diversity and problem-solving as well as creativity. Similar results of the significant impact of workforce diversity on the creativity and problem-solving skills of employees have been reported by Sohail et al., (2012). By the same token, Neibuhr (2006) conducted the study in Germany and his results suggest that workforce diversity is a key to creativity.

In academic setup, Rab et al., (2013) have found a positive link between students' performance and diversity in different colleges and universities of the Punjab province. Similarly, Qasim (2017) has investigated the effect on workforce diversity and job performance in the education sector of Jalalabad, Afghanistan and his results reveal that there is a significant association between workforce diversity and employee job performance. The review of literature unfolds many aspects of workforce diversity but the most important include age, gender, and education of employees. Hence we hypothesize as:

H1: workforce diversity has a significant effect on creativity.

Age Diversity

The review of literature reinforces the notion that age diversity drives creativity in the workplace (Wessels, 2008; Florian et al., 2009; Suttle, 2016). In this regard, Suttle (2016) finds a significant correlation between age diversity and creativity. Similarly, Wessels (2008) notes age diversity as a significant and strong predictor of employees' creative performance. Further, he reports that senior employees tend to have a higher level of loyalty to the company, better interpersonal skills and are more hardworking as well as better team players. On the other hand, junior/younger employees exhibit a lower level of creativity and more absenteeism from work.

Age diversity helps foster the work environment by bringing in new assortments of skills set. Moreover, young workers work like disciples or trainees while experienced workers can mentor their younger colleagues. Hence organization needs to have a workforce consisting of newcomers, experienced, and experts in all cadres to exploit their innovative and creative abilities as well as their knowledge and experience (Fin, 2015). Hence we hypothesize as: H2: Age diversity has a significant effect on creativity.

Gender Diversity

Gender Diversity is one of the leading factors that affect creativity (Humphreys et al., 2009). In this connection, Gluck (2015) demonstrates that gender inequality in the workplace results in a loss of creativity. Moreover, Patrick and Kumar (2012), conclude that there are substantial dissimilarities between men and women employees in nurturing creativity and women are more inclined to work in diverse conditions as compared to men. Similarly, Gallego et al., (2010) report that perceptions about gender diversity between man and women employees differ. Specifically, the attitude of women workers toward equality and diversity in the workforce for fostering creativity is more positive than their male colleagues.

Humphreys et al., (2009) report that gender-based injustices in firms are defended and supported by stereotypes and prejudices that pave the way for setting males dominant and influential. Another side of the coin is that firms generally prefer to employ and retain male employees as against female employees for the reasons that they are perceived to contribute significantly by outperforming their female colleagues.

According to Phillips (2012), balanced gender diversity brings more balance to the team and enhances a positive effect on creativity. Similarly, Hoogendoorn et al., (2011) report that teams with a similar number of female and male employees outperform as against male dominant teams in terms of creative performance. By the same token, a team with a lower number of women has lower creativity than a team with having balanced gender mix. Hence we hypothesize as; H3: Gender diversity has a significant effect on creativity.

Education Diversity

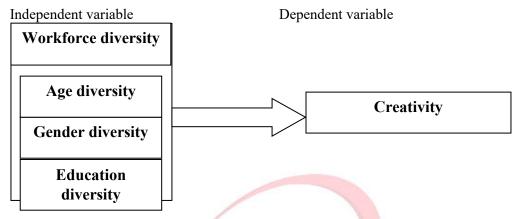
The saying that "knowledge is power" implies that people with knowledge carry out their duties effectively and efficiently as compared to uneducated people. Similarly, an educated person performs better and tends to be more creative as against uneducated people who undergo more challenges and tend to be less creative (Bhargava & Anbazhagan, 2014). In addition, Hoff (2014) notes that in the hiring process, employers do not normally consider those applicants who have inadequate education. Consequently, he argues that education is the key to creativity and employability.

Barrington and Troske (2001) note a significant association between an individual's education level and his/her creativity and productivity. Moreover, Christian et al., (2006) argue that workers with a higher level of education tend to foster a higher level of creativity and the bottom-line of the firm. Similarly, more educated people contribute more to the creativity and economic growth of a country (Inmyxai & Takahashi, 2010). Hence we hypothesize as:

H4: Education diversity has a significant effect on creativity.

From the above discussions below model is developed.

Conceptual model:



Source: Authors own research

Research Methodology

The part explains the research philosophy, approach, strategy, choices of methods, and the time frame of the research. This is followed by how the data has been collected, screened, and analyzed as well discussed. In the end, the conclusions of the research and possible future streams for research have been discussed.

According to Saunders, Lewis, and Thornhill, (2009), the objectives of the study should be in line with the philosophical stance. So, positivism has been adopted for it is more scientific and tests the cause and effect phenomena. This is followed by the adoption of the deductive approach where hypotheses are developed from theories and subsequently tested empirically. Out of the multiple research strategies available such as interviews, case studies, and action research; a survey has been adopted for the collection of cross-sectional data using a mono-method (questionnaire).

Sample and Procedure of Data Collection

Data is collected through Likert Scales Questionnaire from higher education institutions/universities situated in Khyber Pukhtunkhwa. 180 questionnaires are disseminated among the Lecturers, Assistant Professors, Associate Professors and Professors of the universities. Out of 180, 160 filled questionnaires are returned forming a percentage of 88% response rate. Out of 160 returned questionnaires, 10 questionnaires were discarded during the data screening phase of analysis. The table given below shows the break-up of the data.

Table 1: *Break-up of Data*

S#	University	Lecturers	Assistant Professors	Associate Professors	Professors	Total
1	A	10	9	3	1	23
2	В	12	6	4	3	25
3	C	14	8	3	3	28
4	D	11	6	4	1	22
5	E	15	9	3	3	30
6	F	11	7	3	1	22
7		73	45	20	12	150

Source: Developed by authors from the data

Development of Linear Regression Models and Measures

Based on the review of the literature, the following regression models for hypotheses are developed.

Creativity = $\alpha + \beta_1$ Age Diversity + β_2 Gender Diversity + β_3 Education Diversity + ϵ

Creativity

Creativity is an abstract term and has been perceived by a set of five questions adopted from Lee and Choi (2003) using a five-point Likert Scale ranging from strongly disagree to strongly agree to indicate the level of agreement of the respondents.

and useful ideas My organization spends much time in producing novel and useful ideas	S#	Items
and useful ideas My organization spends much time in producing novel and useful ideas My organization considers producing novel and useful ideas as being important activit	1	My organization has produced many novel and useful ideas
4 My organization considers producing novel and useful ideas as being important activit	2	My organization fosters an organization that is conducive to our ability to produce novel and useful ideas
	3	My organization spends much time in producing novel and useful ideas
5 My organization actively produces novel useful ideas	4	My organization considers producing novel and useful ideas as being important activities
	5	My organization actively produces novel useful ideas

Source: (Lee and Choi, 2003)

Workforce Diversity

Workforce Diversity is a second-order latent construct consisting of Age, Gender and Education diversity. It is measured on a five-point Likert Scale ranging from strongly disagree to strongly agree, indicating the level of agreement by the respondents. The scale has been developed from the questionnaires posited by Harrison et al. (2002) and Blau (1977).

Age Diversity

It is an abstract latent construct measured in terms of five items using five points Likert Scale ranging from strongly disagree to strongly agree. It is adapted from the studies of Harrison et a., (2003) and Blau (1977).

S #	Items
1	All members of the team are given a say in solving problem and making decisions
2	I experience low connection with my colleagues with different age at work
3	I get equal opportunities for problem solving in my firm
4	Employees of different ages are treated fairly and equally
5	Employee age diversity influence on innovation of an organization
~	TT 1 (0000) 171 (7077)

Source: Harrison et al. (2002) and Blau (1977).

Gender Diversity

It is an abstract latent construct measured in terms of seven items using five points Likert Scale ranging from strongly disagree to strongly agree. It is adapted from the studies of Harrison et al., (2003) and Blau (1977).

S #	Items				
1	Our organization evaluate gender issues at work				
2	Our organization provide equal opportunities in gender diversity in the workplace				
3	Our organization employee to ensure that all employees are treated equally				
4	Fair treatment to all employees irrespective of their gender				
5	Our organization does not discriminate on the basis of gender in its recruitment and selection processes				
6	Gender diversity influence fully on creativity of our organization				
7	Employee equal gender diversity affect creativity				
8	Our organization employee equal treatment of gender diversity				
9	Man concentrate more at work than the women				

Source: Harrison et al. (2002) and Blau (1977)

Education Diversity

It is an abstract latent construct measured in terms of nine items using five points Likert Scale ranging from strongly disagree to strongly agree. It is adapted from the studies of Harrison et al., (2003) and Blau (1977).

S#	Items			
1	Employees who have been offered on-job-training are more productive as against other graduates			
2	The skills developed in a university has positive influences on an employee's performance in a firm			
3	The employee education level highly influence the creativity of employees			
4	Employee whose experience or education is considered to be insufficient are commonly rejected			
5	higher educated individuals are more creative than lower			
6	Individual creative depends on the level of his)her education			
	H · 1/2002\ 1.D1 /1077\			

Source: Harrison et al. (2002) and Blau (1977).

Data Analyses

It is acknowledged that the multiple regression analyses could be carried out through various advanced Modeling such as Partial Least Square Structural Equation Modeling (PLS-SEM), etc. However, considering the nature of the data and consistent with the objectives of the study, this study employs a linear regression model. Consequently, SPSS version 16 is employed to analyze the Descriptive Statistics, Reliability Analysis, Correlation Analysis and finally Regression Analysis were incorporated to test the impact of workforce diversity on creativity in higher education institutions of Khyber Pukhtunkhwa (Hair, 2011; Saunders et al., 2009).

In this section descriptive statistics, correlation and regression analysis have been conducted to explain workforce diversity with respect to demographics, and find its influence on creativity. In compliance of meeting the scientific rigor and robustness, reliability analyses, and checking the assumptions of regression analysis: data normality, linearity, homoscedasticity, and independence of observations from each other have been thoroughly checked before proceeding to the analysis.

Descriptive Statistics

Table 1 describes the gender-wise distribution of the participants. There are 150 participants in this table of which 82 are males and 68 are females. This finding implies that universities in Khyber Pakhtunkhwa are comparatively male-dominant. The reason for this is probably the cultural values of the region wherein females are expected to take care of household matters. However, with the cultural change due to globalization and modern world demands more females are assuming economic responsibilities.

In terms of age diversity, the most dominant age range in the universities are between 30-39 with 68 participants forming 45 % whereas the least dominant age range is above 50 years old with just 10% of the sample. This finding confirms that the population of Pakistan is dominated by the young and has a comparatively less senior population. The second and third largest age groups are 20-29 and 40-49 with 28 % and 17% respectively. These findings are also commensurate with that of the population of Pakistan.

The diversity of the respondents with respect to their positions in the universities, there are 150 participants among which 73 are Lecturers with a percentage of 48.66%, 45 are Assistant Professors forming 30%, 20 of the participants are Associate Professors having a percentage of 13.33% and finally, 12 of the respondents are Professors forming percentage of 8%. Again, these findings are in line with the university requirements and policies for promotion as well as the level of education and experience in the universities.

The last portion of the table describes the participants' education level. Out of 150 respondents, there are 20 respondents, who have earned their Master's Degrees forming a percentage of 13.33%. while 105 of the participants have an education of MS and MPhil, forming a percentage of 70%. PhD holders among the participants are just 17, forming a percentage of 11.33%. whereas the remaining 8 participants have an education of postdoc, forming a percentage of 5.33%. Again, with the increased efforts of the government to develop the universities' faculty, the majority of the staff has a higher level of education.

Table 1: Descriptive Analysis (N=150)

Participants Gender					
	Frequency		Percent	Valid Percent	Cumulative Percent
Male	82		54.66	54.66	54.66
Female	68		45.33	45.33	100.0
			Age of	the respondents	
20-29 years	42		28.0	28.0	28.0
30-39 years	68		45.33	45.33	73.33
40-49 years	25		16.66	16.66	89.99
Above 50 years	s 15		10.0	10.0	100.0
			Position of	of the respondents	
Lecturers		73	48.66	48.66	48.66
Assistant Profe	ssors	45	30	30	78.66
Associate Profe	essors	20	13.33	13.33	91.99
Professors		12	8.0	8.0	100.0
Education of the respondents				Garre	
Master		20	13.33	13.33	13.33
MS-M-Phil		105	70.0	70.0	83.33
PhD		17	11.33	11.33	94.66
Postdoc		8	5.33	5.33	100.0

Reliability Analyses

Reliability analysis is carried out to confirm that the operational definitions of the factors are consistent and reliable for further analyses. For the purpose of confirming the inter-item consistency, Cronbach's Alpha is employed. Table 2 demonstrates the number of items for Age, Gender, Education and Creativity. There are 21 numbers of items in total for Age, Gender and Education. Whereas creativity contains 5 items and ultimately sums up to 26 items. The

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Cronbach's alpha values for Age, Gender, Education and Creativity are 0.790, 0.80, 0.84, and 0.76 which demonstrate a high level of inter-item consistency.

Table 2: Reliability Analysis

Variable	Cronbach's alpha	No. of items	
Age diversity	0.790	5	
Gender diversity	0.807	9	
Education Diversity	0.843	7	
Creativity	0.763	5	

Correlation Analysis

Correlation analysis among Creativity, Age, Gender and Education Level has been conducted to confirm the association among these factors. Table # 3 depicts a significant correlation among these factors indicating a strong and significant relationship between these factors.

Table 3: Correlation Analysis

1 11010 01 00110	101110111111111111111111111111111111111			
	Creativity	Age	Gender	Education
Creativity	1.000			
Age	.528	1.000		
Gender	.390	.305	1.000	
Education	.462	.595	.505	1.000

^{*.} Correlation is significant at the 0.01 level (2-tailed).

Regression Analysis

To find out the impact of Age, Gender and Education Level on Creativity, Regression Analysis has been conducted. As depicted in Table # 4, Age, Gender and Education are independent variables whilst creativity is the dependent variable. The r-square value the below table describes the strength of the relationship among variables, that is, 62 % variation in the dependent variable (Creativity) is explained by the independent variables (Age, Gender, Education). Adjusted R square explains the extent of variance in the dependent variable due to the independent variable and the value of adjusted R square is 0.421, which suggests that the independent variable explains 42.1 variation in explaining the dependent variable.

The F-statistic shows the statistical significance of the model. F value of 24.301, p=0.000 (p<.05) suggests that the model is statistically highly significant. Additionally, the β value shows the rate of change in the dependent variable due to one unit change in the independent variable. β value is 0.284, 0.364 and 0.276 which means that one unit change in the independent variable enhances change of 0.284, 0.364 and 0.276 units in the dependent variables. 't' value decides the acceptance or rejection of the hypothesis. The value of t in table is 6.211, 5.334 and 3.441, p=.000 (p<.05) which implies that Age diversity, Gender diversity, Education diversity and

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^{*.} Correlation is significant at the 0.05 level (2-tailed).

overall workforce diversity significantly influence creativity. Hence all the hypotheses are accepted.

Table 4: Regression Analysis

	Unstandardiz	ed Coefficients ^a		
Model	β	Std. Error	t-value	Sig.
(Constant)	.830	.231	5.301	.000
Age	.284	.052	6.211	.000
Gender	.364	.062	5.334	.000
Education	.276	.047	3.441	.001
R	.623			
R Square	.426			
Adjusted R Square	.421			
F value	24.301			
F Sig.	.000			

a. Predictors: (Constant), Age, Gender, Education

b. Dependent Variable: Creativity

Findings and Discussion

Results of the research confirm a positive correlation between workforce diversity as well as its dimensions with creativity which is in line with the prior research (e.g. Sohail et al., 2012; Rab et al., 2013; Qasim 2017; Kunze et al., 2009; Fin, 2015; Suttle, 2016; Hoogendoorn et al., 2011; Patrick & Kumar 2012; Gluck, 2015; Christian et al., 2006; Inmyxai & Takahashi, 2010 & Hoff, 2014).

Workforce diversity has a significant influence on creativity. This research is directly associated with the research of Sohail et al., (2012) who suggested that workforce diversity significantly contributes to creativity. Similarly, Rab et al., (2013) and Qasim (2017) reported that workforce diversity has a positive effect on creativity. This finding suggests that firms with diverse workforce would tend to foster more creativity among their employees. In the academic setting, this implies that universities should welcome a workforce that is diverse in terms of age, gender and education level to induce enhanced creativity among its employees that would ultimately lead to advanced teaching and learning processes.

Age diversity has a significant impact on creativity. This study is directly related to the research of Kunze et al., (2009) who report that senior employees contribute better to creativity than their younger/juniors colleagues. By the same token, Fin (2015) reveals that senior employees not only act like mentors in the organization whilst younger employees act like trainees/ protégée but also contribute significantly to creativity. This finding is also in line with that of Suttle (2016). For university administration, it implies that it should employ and retain a workforce well diverse in terms of age because both the young and senior faculty would benefit from each other knowledge, skills, and experiences.

Gender diversity impacts the creativity of employees. This finding confirms the study of Hoogendoorn et al., (2011) who report that equal gender diversity contributes positively to creativity. Similarly, Patrick and Kumar (2012) and Gluck (2015) conclude that gender diversity has a significant effect on creativity. A lesson for the administration of universities is that both the male and female faculty are equally important for creating a working environment where creativity is fostered.

Education diversity has a positive effect on creativity. This finding endorses the results of Christian et al., (2006) who reported that highly educated individuals contribute to creativity. In the same vein, Inmyxai and Takahashi (2010) and Hoff (2014) conclude that education diversity has a significant impact on the creativity of employees. This suggests that universities should not only employ well-qualified faculty but also welcome newcomers with the minimum required qualification to create a diverse workforce where the faculty interact and cooperate with each other leading to more creative and innovative processes and procedures.

Conclusions

Diversity in the workforce must be ensured to enhance the level of creativity of the faculty of the universities, particularly gender diversity followed by age and education. This implies that universities that pay heed to include the female faculty would outdo their competitors in creativity. Similarly, those universities that value and maintain a diverse group of faculty in terms of age and education would outperform in creativity than those that fail to appreciate diversity. It is further implied that a well-diverse faculty would ultimately enhance the learning and teaching process as well as advance the research activities that would primarily profit the students and the general public at large.

Future Work

The same research may be undertaken on the Higher Education institutions of the other provinces of Pakistan. Similarly, more dimensions of workforce diversity may be taken for comprehending the relationship between workforce diversity and creativity. In addition, a more qualitative nature of studies as well as interviews and mixed methods of data collection with advanced multivariate analyses may be carried out to better understand the relationship.

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