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## IMPACTS OF GENDER ON JOB SATISFACTION AND WORK MOTIVATION RELATIONSHIP: A CASE OF TEACHERS IN BALOCHISTAN, PAKISTAN

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### ABSTRACT

This study revealed that teacher's satisfaction, motivation, sense of accomplishment, positive and productive behavior are statistically related concepts in a positive direction. The moderating effect of gender on the relationship of satisfaction with other related concepts was tested using hierarchical regression. It was concluded that in Balochistan, the teacher's gender does not moderate any of the above-mentioned relationships (R-Square change was insignificant in all three models). All required statistical assumptions like the independence of errors, normality of residuals; multicollinearity and heteroscedasticity were tested and found met after possible standardization of variables. This study adds value to the pool of knowledge and helps institutional policymakers in making and implementing policies regarding teacher's satisfaction-motivation relationship and the moderation effect of demographic indicators.

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## 1. INTRODUCTION

Owners, directors, and managers in organizations are very much interested to know whether their employees are satisfied with different aspects of an organization like facilities, policies, financial benefits, and opportunities. Satisfied employees work with more energy and motivation which is very fruitful for the business or organization to flourish. In recent years the substantial increase in the number of females entering the workforce arises an important question of whether gender influences job satisfaction and its related concepts or not.

In Pakistan, females are encouraged to work as teaching faculty for a number of reasons like short working hours, secure workplace and many others. Due to an increased number of females in teaching, it is very necessary to analyze the impact of gender on job satisfaction. This research is an attempt to analyze whether gender moderates the relationship between job satisfaction and

motivation, sense of accomplishment, and positive productive behavior of teachers working at schools, colleges, and universities in Balochistan province of Pakistan.

A teacher is considered as satisfied if he or she is satisfied with certain areas of the job, including working hours, leaves policy, rules, and regulations, current salary, future career-building opportunities, provident fund, life and health insurance, job security and relationship with coworkers, juniors and seniors. The factors mentioned above are considered in while operationalization of satisfaction measurement scale. A motivated teacher would find opportunities to utilize skills and abilities, recommend other teachers and professors to work in his or her institute, feel independence while making decisions, and find new ways to enhance abilities and skills. Similar dimensions are considered while construction of motivation scale.

Positive and productive behavior leads to job satisfaction and vice versa. A successful division of responsibilities, participation in decision making, finding various in work, sharing good experiences, providing professional and moral support and accomplishment of target successfully are the factors considered in developing a scale for positive and productive behavior. Sense of accomplishment derived from teacher's understanding about the level of competence, the confidence of working with more than one department, awareness of expectation from the job and having clear goals and objectives and responsibilities

The most common statistical technique for testing the moderating effect of a variable on a relationship is hierarchical regression analysis. For a successful regression model, it is important to test certain statistical assumptions apply to conduct multiple regression analysis. All necessary regression assumptions are tested.

A number of studies have been conducted on satisfaction, motivation and their related aspects, but a few studies have been found in the selected research topic, i.e. to know the moderation effect of gender on the relationship between teacher's satisfaction and other related concepts. The researchers could not find any study on the same topic on study population from teachers of Balochistan.

## 2. LITERATURE REVIEW

Job satisfaction is an important driver that is derived from different components like motivation, positive and productive behavior, sense of accomplishment and other many more. Jenaibi in his research concluded that an un-satisfied workforce may lead to increased turnover and absenteeism at the place of work. Job satisfaction is composed of various areas of work like active management, communication, facilities, and fringe benefits, salaries, and career future (Jenaibi, 2010).

Danish and Usman (2010) explored that reward and work recognition are the main sources of employee motivation. Motivation and its different dimensions are statistically significant with employee satisfaction. Results of a study (Lipinskiene, 2008) showed a positive and statistically significant relationship between employee job satisfaction and its various aspects. Siddiqi in his doctoral research dissertation (Siddiqi, 2012) explored that Turkish female teachers are more satisfied as compared to male teachers with their physical conditions, wages, organizational climate, and co-working status. Gender found to be a significant factor in teacher satisfaction. Another finding on Turkish teacher's study by Shin and Sak (Sahin & Sak, 2015) revealed the same results that are female

teachers were more satisfied with different dimensions of satisfaction.

Briones et.al. (2010) explored that satisfied and motivated staff from secondary school increase the reputation of their institutions which can lead to increased student learning. A contrary result was evident from Pakistan (Fatima et al., 2015) concluded that male staff members were more satisfied with their jobs, while (Lup, 2017) showed that male and female teachers were equally satisfied until promotion in job occurs.

Sense of accomplishment and job satisfaction are statistically significantly related and gender moderates this relationship (Nasir et al., 2011), the same results were found in another research (Arshad, 2016). The relationship between gender and different statements on attitude to work and job satisfaction are significant (Abeka-Donkor, 2013), while gender does not matter for employees to be satisfied in China (Miao et al., 2017).

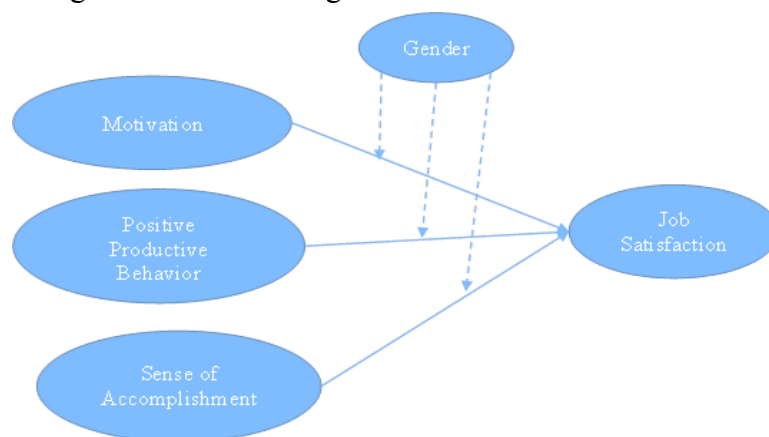
Research from Malaysia (Met & Ali, 2014) showed that male employees are more satisfied with their salaries as compared to female employees while opposite results were derived from other research (Kim et al., 2009).

Amarasena et al. (2013) demonstrated that demographic factors like gender, age, experience, marital status, number of children, and education of employees had no statistically significant differences in teacher's job satisfaction. Results from the study showed that neither gender nor tenure act as moderators in the perceived supervisor support-organizational commitment relationship (Little, 2017). Research showed that gender moderates the relationship between self-esteem and life satisfaction (Zhang & Leung, 2002).

Hayes (2013) devised a hierarchical regression approach to test statistical moderation where the interaction effect of moderating and independent variables is used to test for its significance. Jose in his book explained that there are certain regression assumptions like normality, homoscedasticity, multicollinearity, and independence and error term are major assumptions that should be tested before applying multiple regression analysis (Jose, 2013).

Assumption whose violation can misinterpret the regression coefficient is multicollinearity and may be corrected using standardization technique (Jaccard et al., 1990).

Based on the existing literature following model is devised for the research.



**Figure 1: Model of Research.**

### 3. HYPOTHESES

Based on the above model diagram following hypotheses were derived.

**H#1:** Job satisfaction is related to motivation, sense of accomplishment of teachers.

**H#2:** Job satisfaction would lead to positive and productive behavior.

**H#3:** Gender affects the relationship between satisfaction and motivation

**H#4:** Gender affects the relationship between satisfaction and sense of accomplishment

**H#5:** Gender affects the relationship between satisfaction and positive productive behavior

### 4. RESEARCH METHODOLOGY

A well-structured questionnaire was developed and distributed to school, college and university teachers in Balochistan, Pakistan. A total of 1048 (662 Male and 386 Female) responses were received and recorded for analysis. Based on the concept and understanding of items in the instrument, 12 items were summated for measuring satisfaction, 6 items were summated for measuring motivation, 10 items were summated for measuring positive and productive behavior and 6 items were summated for measuring the sense of accomplishment.

After variable definition, hierarchical regression was run to access the moderating effect of gender on the relationship between job satisfaction and its different aspects, namely motivation, positive and productive behavior, and sense of accomplishment. Post regression assumptions were tested, and possible corrections were made to assess true relationships and effect.

### 5. RESULTS AND DISCUSSION

To test the first hypothesis, which states that “The Job satisfaction is related to motivation, sense of accomplishment of teachers”, correlation analysis was run. Analysis of variable correlations in Table 1, reveals that all correlations are statistically significant at 1% level of significance, which leads to the conclusion that motivation, sense of accomplishment and satisfaction are statistically related.

**Table 1:** Correlation Matrix of research variables

		Job satisfaction	Motivation	Positive and productive behavior	Sense of accomplishment
Job satisfaction	Pearson Correlation	1	0.661**	0.715**	0.455**
	P-value		<0.001	<0.001	<0.001
Motivation	Pearson Correlation		1	0.751**	0.489**
	P-value			<0.001	0.000
Positive and productive behavior	Pearson Correlation			1	0.496**
	P-value				<0.001

\*\* Significant at the 0.01 level

The Second research hypothesis as stated in the previous section requires testing the causal effect of job satisfaction on positive and productive behavior. Analysis in Table 2 and 3 show that teacher satisfaction effect positive and productive behavior of employee positively and significantly.

**Table 2:** Model Summary (Predictors: (Constant), Job satisfaction)

Model	R	R <sup>2</sup>	Adj R <sup>2</sup>	S.E of Estimate
1	0.715 <sup>a</sup>	0.511	.511	0.699

**Table 3:** Coefficients (Dependent Variable: Positive and productive behavior)

	$\beta$	S.E	$\beta^*$	t	P-value
Constant	-9.3E-07	0.022		<0.001	1.000
Job Satisfaction	0.715	0.022	0.715	33.063	<0.001

Table 4, the findings of hierarchical regression showing that the R-Square change in the second model is not significant (P-value > 0.05) stating that gender does not moderate the relationship between motivation and satisfaction of teachers. Table 6, presents that the interaction of gender and motivation is not statistically significant, which is the statistical evidence that gender does not moderate the relationship between teacher motivation and satisfaction. Post regression assumptions were also tested and presented via Durban Watson statistic (independence of error term) in Table 4, VIF and Tolerance statistics (testing multicollinearity) in Table 6, graphical representation of error term and predicted values for testing normality and homoscedasticity. All assumptions are met and fulfilled. It is concluded that Gender does not moderate the relationship between satisfaction and motivation.

**Table 4:** Model Summary (Dependent Variable: Job satisfaction)

Model	R	R <sup>2</sup>	Adj R <sup>2</sup>	S.E of Estimate	Change statistic		$\nu_1$	$\nu_2$	P-value	DW
					R <sup>2</sup> change	F change				
1	0.662 <sup>a</sup>	0.439	0.438	0.74938	0.439	408.452	2	1045	<0.001	
2	0.663 <sup>b</sup>	0.440	0.438	0.74938	0.001	2.417	1	1044	0.120	1.852

a. Predictors: Constant, Gender, Motivation

b. Predictors: Constant, Gender, Motivation, Interaction (Motivation x Gender)

$\nu_1$ ,  $\nu_2$  are a degree of freedoms and DW is Darbin Watson statistics

**Table 5:** ANOVA

MODEL	SS	$\nu$	MS	F	P-value
1					
Regression	459.367	2	229.684	408.452	<0.001 <sup>b</sup>
Residual	587.632	1045	0.562		
Total	1046.999	1047			
2					
Regression	460.725	3	153.575	273.476	<0.001 <sup>c</sup>
Residual	586.274	1044	0.562		
Total	1046.999	1047			

a. Dependent Variable: Job satisfaction

b. Predictors: (Constant), Gender, Motivation

c. Predictors: (Constant), Gender, Motivation, Interaction (Motivation x Gender)

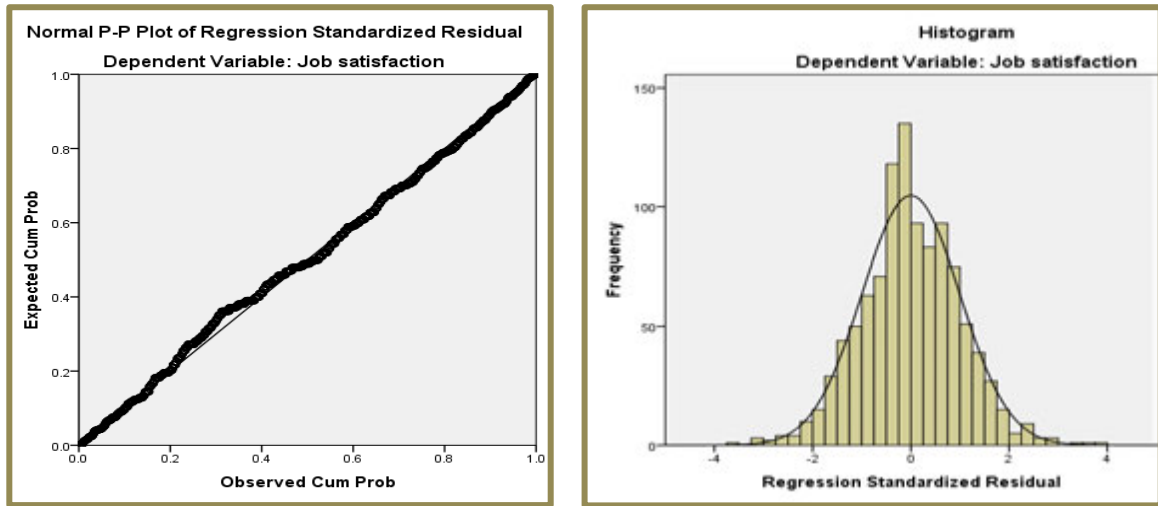
$\nu$ , are degree of freedoms.

**Table 6:** Coefficients

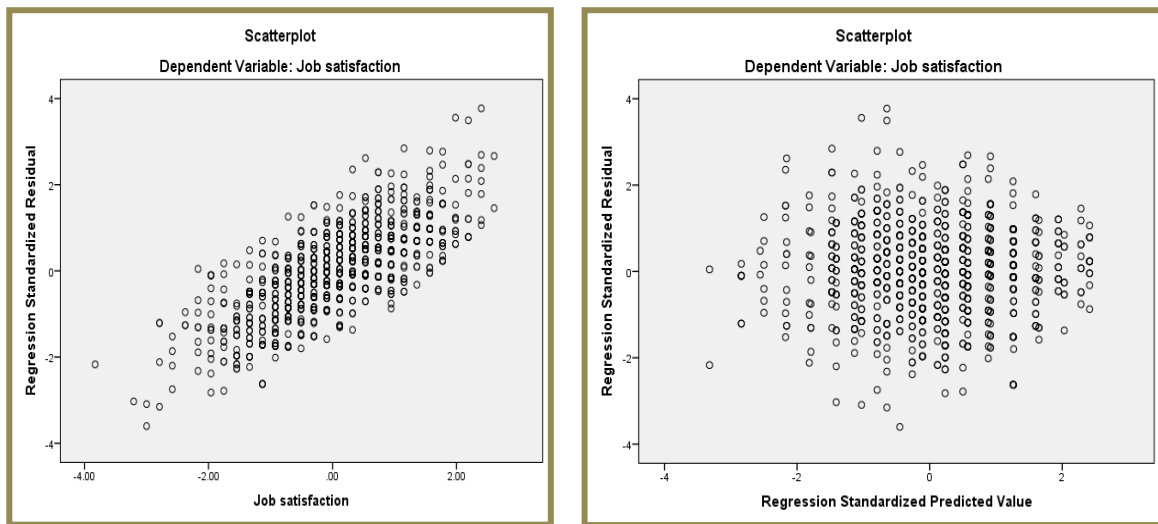
Model	$\beta$	S.E	$\beta^*$	t	P-value	Collinearity Statistics	
						Tolerance	VIF
1 Constant	6.9E-07	0.023		<0.001	1.000		
Motivation	0.663	0.023	0.663	28.575	<0.001	0.998	1.002
Gender	-0.043	0.023	-0.043	-1.838	0.006	0.998	1.002
2 Constant	-0.002	0.023		-0.066	0.947		
Motivation	0.664	0.023	0.664	28.634	<0.001	0.996	1.004
Gender	-0.044	0.023	-0.044	-1.878	0.061	0.998	1.002
Interaction (Motivation x Gender)	0.037	0.023	0.036	1.555	0.120	0.998	1.002

a. Dependent Variable: Job satisfaction

$\beta$ , and S.E are Unstandardized Coefficients,  $\beta^*$  are Standardized coefficients



**Figure 2:** Testing Normality of Error term.



**Figure 3:** Testing Heteroscedasticity and Linearity.

Figure 2 shows the testing normality of error term and Figure 3 exhibits testing heteroscedasticity and linearity. In Table 7, findings of hierarchical regression showing that the R-Square change in the second model is not significant ( $P\text{-value} > 0.05$ ) stating that gender does not moderate the relationship between Positive and Productive Behavior and satisfaction of teachers. Table 9, presents that interaction of gender and Positive and Productive Behavior is not statistically significant, which is the statistical evidence that gender does not moderate the relationship between teacher Positive and Productive Behavior and satisfaction. Post regression assumptions were also tested and presented via Durban Watson statistic (independence of error term) in Table 7, VIF and Tolerance statistics (testing multicollinearity) in Table 9. Graphs of the error term and predicted values for testing normality and homoscedasticity (not shown) also confirm these assumptions., graphical representation of error term and predicted values for testing normality and homoscedasticity. All assumptions are met and fulfilled. It is concluded that Gender does not moderate the relationship between satisfaction and Positive and Productive Behavior.

**Table 7: Model Summary <sup>c</sup>**

Model	R	R <sup>2</sup>	Adj R <sup>2</sup>	S.E of Estimate	Change statistic		v <sub>1</sub>	v <sub>2</sub>	P-value	DW
					R <sup>2</sup> change	F change				
1	0.719 <sup>a</sup>	0.517	0.516	0.6958	0.517	558.797	2	1045	<0.001	
2	0.719 <sup>b</sup>	0.440	0.515	0.6961	0.000	0.183	1	1044	0.669	1.799

a. Predictors: Constant, Gender, Positive and Productive Behavior

b. Predictors: Constant, Gender, Positive and Productive Behavior, Interaction (Positive and Productive Behavior x Gender)

c. Dependent Variable: Job satisfaction

v<sub>1</sub> and v<sub>2</sub> are a degree of freedoms and DW is Darbin Watson statistics

**Table 8: ANOVA**

MODEL		SS	v	MS	F	P-value
1	Regression	541.072	2	270.536	558.797	<0.001 <sup>b</sup>
	Residual	505.927	1045	0.484		
	Total	1046.999				
2	Regression	541.161	3	180.387	372.301	<0.001 <sup>c</sup>
	Residual	505.838	1044	0.485		
	Total	1046.999	1047			

a. Dependent Variable: Job satisfaction

b. Predictors: (Constant), Gender, Positive and Productive Behavior

c. Predictors: (Constant), Gender, Positive and Productive Behavior, Interaction ( Positive and Productive Behavior x Gender)

v, are degree of freedoms.

**Table 9: Coefficients**

Model		$\beta$	S.E	$\beta^*$	t	P-value	Collinearity Statistics	
							Tolerance	VIF
1	Constant	0	0.021	-	<0.001	>0.999		
	Positive and Productive Behavior	0.721	0.022	0.721	33.424	<0.001	0.993	1.007
	Gender	-0.076	0.022	-0.076	-3.532	<0.001	0.993	1.007
2	Constant	0.001	0.022	-	0.037	0.970		
	Positive and Productive Behavior	0.721	0.022	0.721	33.364	<0.001	0.991	1.009
	Gender	-0.076	0.022	-0.076	-3.504	<0.001	0.990	1.010
	Interaction (Positive and Productive Behavior x Gender)	-0.009	0.022	-0.009	-0.428	0.669	0.996	1.004

a. Dependent Variable: Job satisfaction

$\beta$ , and S.E are Unstandardized Coefficients,  $\beta^*$  are Standardized coefficients

**Table 10: Model Summary**

Model	R	R <sup>2</sup>	Adj R <sup>2</sup>	S.E OF Estimate	Change statistic		v <sub>1</sub>	v <sub>2</sub>	P-value	DW
					R <sup>2</sup> change	F change				
1	0.456 <sup>a</sup>	0.208	0.207	0.891	0.208	137.52	2	1045	<0.001	
2	0.458 <sup>b</sup>	0.210	0.208	0.890	0.002	2.37	1	1044	0.124	1.701

a. Predictors: Constant, Gender, Sense of Accomplishment

b. Predictors: Constant, Gender, Sense of Accomplishment, Interaction (Sense of Accomplishment x Gender)

c. Dependent Variable: Job satisfaction

v<sub>1</sub>, v<sub>2</sub> are the degree of freedoms and DW is Darbin Watson statistics

Table 10, findings of hierarchical regression showing that the R-Square change in the second model is not significant (P-value > 0.05) stating that gender does not moderate the relationship between sense of accomplishment and satisfaction of teachers. Table 12 presents that the interaction of gender and is not statistically significant, which is the statistical evidence that gender does not moderate the relationship between teacher sense of accomplishment and satisfaction. Post regression assumptions were also tested and presented via Durban Watson statistic (independence of error term) in Table 10, VIF and Tolerance statistics (testing multicollinearity) in Table 12. Graphs of the error

term and predicted values for testing normality and homoscedasticity (not shown) also confirm these assumptions. All assumptions are met and fulfilled. It is concluded that Gender does not moderate the relationship between satisfaction and positive productive behavior.

**Table 11: ANOVA**

MODEL	SS	$\nu$	MS	F	P-value
1 Regression	218.143	2	109.072	137.515	<0.001 <sup>b</sup>
Residual	828.856	1045	0.793		
Total	1046.999	1047			
2 Regression	220.018	3	73.339	92.585	<0.001 <sup>c</sup>
Residual	826.981	1044	0.792		
Total	1046.999	1047			

a. Dependent Variable: Job satisfaction

b. Predictors: (Constant), Gender, Sense of Accomplishment

c. Predictors: (Constant), Gender, Sense of Accomplishment, Interaction (Sense of Accomplishment x Gender)

$\nu$ , are degree of freedoms.

**Table 12: Coefficients<sup>a</sup>**

Model	$\beta$	S.E	$\beta^*$	t	P-value	Collinearity Statistics	
						Tolerance	VIF
1 Constant	1.447E-06	0.028		<0.001	>0.999		
Sense of Accomplishment	0.457	0.028	0.457	16.575	<0.001	0.998	1.002
Gender	-0.033	0.028	-0.033	-1.183	0.237	0.998	1.002
2 Constant	0.002	.028		0.061	0.952		
Sense of Accomplishment	0.456	0.028	0.456	16.578	0.000	0.998	1.002
Gender	-0.032	0.028	-0.032	-1.150	0.25	0.998	1.002
Interaction (Sense of Accomplishment x Gender)	-0.042	0.028	-0.042	-1.538	0.124	1.000	1.000

a. Dependent Variable: Job satisfaction

$\beta$ , S.E are Unstandardized Coefficients,  $\beta^*$  are standardized coefficients

## 6. CONCLUSION

Based on statistical analysis, motivation, sense of accomplishment and satisfaction of teachers in Balochistan are statistically significantly related at the 1% level of significance. A satisfied teacher leads to positive and productive behavior. Teacher's gender does not moderate the relationship between satisfaction and motivation at educational institutes of Balochistan. Gender does not moderate the relationship between satisfaction and sense of accomplishment at educational institutes of Balochistan. Gender does not moderate the relationship between satisfaction and positive productive behavior at educational institutes of Balochistan.

## 7. Data availability and material

Data involved in this study can be requested to the corresponding author.

## 8. REFERENCES

- [1] Abeka-Donkor, S. (2013). Are Demographic Factors Predictors of Satisfaction? *The International Journal of Business & Management*, 1(3), 4-11.
- [2] Amarasena, T. S. M., R. Ajward, A., & Haque, A. K. M. A. (2013). The Effects of Demographic Factors On Job Satisfaction Of University Faculty Members In Sri Lanka. *International Journal of Academic Research and Reflection*, 3(4), 89-106.



- [3] Arshad, S. H. (2016). Gender Discrimination and Job Satisfaction. *International Journal of scientific research and management*, 4(5), 4136-4150.
- [4] Briones, E., Taberner, C., & Arenas, A. (2010). Job Satisfaction of Secondary School Teachers: Effect of Demographic and Psycho-Social Factors. *Journal of Work and Psychology*, 26(2), 115-123.
- [5] Danish, R. Q., & Usman, A. (2010). Impact of Reward and Recognition on Job Satisfaction and Motivation: An Empirical Study from Pakistan. *International Journal of Business and Management*, 5(2), 159-167.
- [6] Fatima, N., Iqbal, S., Akhwand, S. Y., Suleman, M., & Ibrahim, M. (2015). Effect of gender differences in job satisfaction of the female employees in Pakistan. *Journal of Economics, Finance and Management Sciences*, 3(1), 27-33.
- [7] Hayes, A. F. (2013). Introduction to Mediation, Moderation, and Conditional Process Analysis, First Edition: A Regression-Based Approach (1<sup>st</sup> Ed.).
- [8] Jaccard, J., Wan, C. K., & Turriss, R. (1990). The Detection and Interpretation of Interaction Effects Between Continuous Variables in Multiple Regression. *Multivariate Behavioral Research*, 25(4), 467-478.
- [9] Jenaibi, B. A. (2010). Job Satisfaction: Comparisons Among Diverse Public Organizations in the UAE. *Management Science and Engineering*, 4(3), 60-79.
- [10] Jose, P. E. (2013). Doing Statistical Mediation and Moderation.
- [11] Kim, B. P., Murrmann, S. K., & Lee, G. (2009). Moderating effects of gender and organizational level between role stress and job satisfaction among hotel employees. *International Journal of Hospitality Management*, 28, 612-619.
- [12] Lipinskiene, D. (2008). The Examination of Relationship Between Organizational Commitment and Job Satisfaction of Employees. *Ekonomikairvadyba: aktualijosirperspektyvos*, 4(13), 282-289.
- [13] Little, M. E. (2017). The Moderating Effect of Gender and Tenure on the Relationship between Perceived Supervisor Support and Organizational Commitment. (Master of Science), San Jose State University. (4808)
- [14] Lup, D. (2017). Becoming a Manager Increases Men's Job Satisfaction, But Not Women's. Harvard Business School Publishing Corporation, 1-5.
- [15] Met, M., & Ali, I. (2014). Investigating the Moderating Effect of Demographic Factors on Relationship between Monetary Motivation and Employee's Job Satisfaction at Oil and Gas Offshore Production Facilities in Malaysia. *International Review of Management and Business Research*, 3(2), 788-818.
- [16] Miao, Y., Li, L., & Bian, Y. (2017). Gender differences in job quality and job satisfaction among doctors in rural western China. *BMC Health Services Research*, 17, 1-9. DOI: 10.1186/s12913-017-2786-y
- [17] Nasir, R., Fatimah, O., Mohammadi, M. S., Shahrazad, W. S. W., Khairudin, R., & Halim, F. W. (2011). Demographic Variables as Moderators in the Relationship between Job Satisfaction and Task Performance. *Pertanika J. Soc. Sci. & Hum*, 19(S), 33-40.
- [18] Sahin, F. T., & Sak, R. (2016). A Comparative Study of Male and Female Early Childhood Teachers' Job Satisfaction in Turkey. *Early Childhood Educ J*, 44(5), 473-481.
- [19] Siddiqi, J. (2012). Relationship Between Principals' Sense of Achievement And Teachers' Perceptions Of Their Principals' Leadership Behaviors. (Doctor of Philosophy), Virginia Commonwealth University, VCU Scholars Compass.

[20] Zhang, L., & Leung, J.-P. (2002). Moderating effects of gender and age on the relationship between self-esteem and life satisfaction in mainland Chinese. *International Journal of Psychology*, 37(2), 83-92.

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