ORIGINAL ARTICLE
GENDER DISPARITY IN BIG FIVE FACTORS OF PERSONALITY AND THEIR EFFECT ON ACADEMIC ACHIEVEMENT OF STUDENTS

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Background: Although personality and intelligence both affect the academic achievement, research findings prove that personality has a profound effect on academic achievement of secondary school students. The objectives of the study were; to compare the Big Five Factors (BFF) of personality of male and female students; and to explore the effect of Big Five Factors of personality on academic achievement of students at secondary level. **Methods:** Cross sectional analytical design was used to conduct study at secondary level in Hazara Division, Khyber Pakhtunkhwa, from October, 2013 to March, 2014. A sample of 1438 of Grade 10 students from Hazara Division was selected by using stratified random sampling technique. Information about Personality was collected by adopting 41 items Big Five Factors Personality Inventory. Whereas academic achievement scores of the students were collected from their 9th class annual result of examination. **Results:** Results indicated that male students had higher extraversion ($p<0.01$), conscientiousness ($p<0.01$), and Agreeableness ($p<0.01$) while female students had significantly higher academic achievement ($p<0.01$) scores. Further, Extraversion ($\beta= -17.14$, $p=0.00$) Neuroticism ($\beta= -10.76$, $p=0.02$), and Agreeableness ($\beta= -10.75$, 0.01) were significant negative predictors of academic achievement whereas Conscientiousness ($\beta= 11.59$, $p=0.02$) was significant positive predictor of academic achievement of students at secondary level. **Conclusion:** This study proves male students as social, outgoing, organized, and having a sense of dutifulness, cooperativeness, and straightforwardness. Further, Extraversion Agreeableness, and Neuroticism negatively predicts academic achievement of students. Conscientiousness positively predicts academic achievement.

Keywords: Academic Achievement, Agreeableness, Conscientiousness, Extraversion, Openness, Neuroticism

INTRODUCTION

Past researches have explored the relationship between personality and academic achievements.[1] Despite the fact that intelligence plays the major role in affecting the academic achievement of the students[2], literature claims that academic achievement is the function of both of intelligence and personality[3]. It is because intelligence[4] and motivation[5] affects learning. Thus as a result of this model the individual differences in the performance are highlighted. It is due to the fact that the combination of personality (willingness to do something) and intelligence (ability to do something) affects performance. But despite this fact, research claims that personality has got its own important role in affecting academic achievement. For example, conscientious individuals remain well organized, they work hard, are self disciplined and determined to do something in life prove it as the quality of motivation.[6] Relationship of personality traits and academic achievement is proved from various research findings.[7] Few studies were conducted in Pakistan on the exploration of Big Five Factors of personality of secondary school students and their effect on the academic achievement of those students.

In Pakistani secondary schools, a research[8] concluded that the achievement of students in subjects Chemistry and English was significantly correlated to the students' personality trait 'agreeableness'. There was a significant positive relationship between the academic achievement of tertiary students who have agreeableness and openness characteristics.

Looking at the contradictory results in terms of effect of Big Five Factors of personality on academic achievement, need was felt to explore their effect on academic achievement of students in Pakistan as well. This study focused on the effect of Big Five Factors (BFF) of personality on academic achievement of secondary school students with the following objectives. To compare the Big Five Factors of personality of male and female students, and to explore the effect of Big Five Factors of personality on academic achievement of students at secondary level.

MATERIAL AND METHODS

This study was conducted in secondary schools of Hazara Division, of Pakistan, from October, 2013 to March, 2014. The ethical approval of the study was given by ethical research committee of the University of Haripur. A sample of 1,438 students was selected from three Districts *viz* Abbottabad, Haripur, and Mansehra. The selected students aged from 13 to 18 years. Only those students who appeared in the 9th grade annual examination as regular candidates and promoted to

grade 10 were included in the study. Students who participated in the pilot study were excluded from the study. This sample of students was collected from 84 randomly selected secondary schools. Stratified random sampling technique was used to select the sample of the study. The strata comprised of male/female, science/arts, rural/urban and private/public sector students.

For the purpose of finding the reliability of the instruments, 100 students were selected to conduct a pilot study. The Cronbach reliability coefficient for the Big Five Factors of personality is given as under: Openness=0.79, Neuroticism=0.55, Extraversion=0.68, Conscientiousness=0.63 Agreeableness=0.66. The overall reliability coefficient of the questionnaire was 0.74.

Cross-sectional analytical design was used to conduct the study. It was attempted to empirically find the impact of Big Five Factors (Conscientiousness, Extraversion, Neuroticism, Agreeableness, and Openness) of personality on academic achievement of students. The Big Five Factors of personality were independent variables while academic achievement was the dependent variable in this study.

The 41 items Big Five Factors of personality inventory developed by Dr. Tom Buchanan by taking idea and material of International Personality Item Pool was adopted in order to collect information about the Big Five Factors of personality of students. Formal permission was granted by Tom Buchanan through email. The first part of questionnaire consisted of name of the student, his/her school name, his/her role number, and marks obtained by him/her in grade 9 annual examination. The second part of questionnaire consisted of items related to the Big Five Factors of personality. The personality inventory having 5 point Likert Scale with options 'Very inaccurate', 'Moderately inaccurate', 'Neither Inaccurate nor Accurate', 'Moderately Accurate', 'Very Accurate' on each item was used. Numbers ranging from 5 to 1 were assigned to these options. Number 5 was assigned to 'Very accurate' and number 1 was assigned to 'Very inaccurate'. This numbering was done for positive items of the inventory while the scoring was reversed for negative items of the inventory. 9th class annual examination marks of Board of Intermediate and Secondary Education, Abbottabad consisted of academic achievement scores of students.

The students were approached after the formal consent of the school heads/principals about the purpose and possible time spending on completion of questionnaires. The students were randomly selected and they were ensured that their names will be kept anonymous and information provided by them will be used only for research purpose. Each participant completed the questionnaire in 10–15 minutes. The data was analyzed by using mean, standard deviation, t-test and multiple regression models. Mean and standard deviation were used to explore the Big Five Factors of personality. Then t-test was used to compare the Big Five Factors of personality of male and female students. In the end multiple regression model was used to explore the impact of personality factors on academic achievement of secondary school students. SPSS-20 was used for the data analysis.

RESULTS

The participants of the study selected through stratified random sampling were 1,438 with 713 (49.6%) male and 725 (50.4%) female students (473 of District Abbottabad, 485 of District Haripur, and 480 of District Mansehra). Big Five Factors of personality between males and females are described in Table-1. The coefficients of Big Five Factors of personality along its p-values are described in Table-2.

Table-1: Comparison of BFF between male and female students (Mean±SD)

Variables	Overall Description	Male (n=713)	Female (n=725)	*p*
Openness	3.40±0.59	3.40±0.59	3.40±0.61	<0.99
Extraversion	3.19±0.58	3.24±0.58	3.13±0.57	<0.01*
Conscientiousness	3.58±0.62	3.62±0.61	3.54±0.64	<0.01*
Neuroticism	3.08±0.64	3.06±0.65	3.11±0.63	<0.16
Agreeableness	3.88±0.72	3.94±0.69	3.83±0.74	<0.01*
Academic achievement		318.30 ±117.25	349.50 ±110.94	<0.01*

Table-2: Regression analysis for the effect of BFF of personality on academic achievement

	Coefficients	P-value
Openness	1.89	0.72
Extraversion	-17.14	0.00*
Consciousness	11.59	0.02*
Neuroticism	-10.76	0.02*
Agreeableness	-10.75	0.01*
F value= 4.86 (0.000), R²= 0.017		

DISCUSSION

Of the total survey conducted, on the average, students were extraverts, had high neurotic tendencies, highly conscientious, and higher level of agreeableness. Gender-wise results of the study indicated no significant difference in Openness to experience between male and female students. It means that male and female students have the same level of openness factor of personality. These results are also consistent with the findings of previous study[10]. Other research studies found difference of openness factor of personality among male and female students.[11] Results of this study found that male students have greater Extraversion. These results convey that male students are bold and social as compared to female students. These results are consistent with the results of previous research studies[12] where males had more feelings of excitement. It is also possible that this gender difference may be due to the

difference in social norms where these traits amalgamate with the daily life experiences and thus makes the difference in these traits.

Male students had significantly higher Conscientiousness as compared to female students. These results indicate that male students are more responsible and dutiful as compared to female students. These results imply that due to the difference in social roles, males have to fulfil the responsibilities with planned life style. Although not significant, females had higher level of neuroticism as compared male students. It means that although not significant, female students are more anxious and depressed as compared to male students. This may be because from physiological perspectives, the gender differences in neuroticism do not emerge around the age of fourteen.[13] But in adulthood, women have higher level of depression and anxiety.[14,15] Results further highlighted higher agreeableness factors in male students as compared to female students which indicate that they are more cooperative and obedient as compared to female students. These results are consistent with results of Hyde[16] who found moderate level of difference between male and female in agreeableness. Our results are contradictory to evolutionary and social role theories which regard females as more nurturing as compared to males. This may be due to difference in the social role played by males and females across different cultures.

Contrary to most of the comparative results, female students have significant higher academic achievement as compared to their male counterparts due to exercise of self regulated approach and proved in line with prior study.[17]

It can be implied that significant difference in Big Five Factors of personality between male and female students may stem from psychological adaptation. Some of them may be due to cultural universal gender differences while others may be due to socio-ecological context. Dynamics, institutional conditions, religious, and gender roles also play important role in gender differences. The other possible explanation could be the difference in educational environment of male and female students which makes the difference in their academic achievement.

Results of the study further elaborate the effect of Big Five Factors of personality on academic achievement of students. The results indicate that Openness to experience does not have considerable influence on academic achievement. It means that students who like variety of experiences, have appreciations for art and have unusual ideas, cannot perform better in their academics. These results are in line with previous results where it was claimed that there is no significant effect of Openness to experience factor of personality on academic achievement of students.[18]

Significant negative effect of extraversion factor of personality on academic achievement is explored in the present study. These results show that students who are social and like working in groups face difficulty in academic achievement. These results are consistent with the previous results.[19] Tendency of extraverts to fail or lowering in their academic performance is undoubtedly due to their distractibility, sociability and impulsiveness.[20] Conscientiousness factor has profound positive effect on academic achievement of students. It means that students, who are dutiful and lead an organized life, excel in their academics. These results are consistent with prior work.[21] Conscientious remain both intrinsically and extrinsically motivated. Therefore they are likely to meet the deadlines and complete the tasks in time. These students make hard rules and regulations thus making formal environments for the success in examination. The conscientious students are likely to complete the assignments without any supervision.

Neuroticism negatively predicts the academic performance. The results convey that unnecessarily stressed, anxious and depressed students cannot perform better their academics. These findings are in agreement with the findings of Wagerman and Funder[22]. Similarly it was found that there was a significant negative relationship between the academic achievements of students having neuroticism.[21] Agreeableness negatively predicts the academic performance. Same results were found by Paunonen[23].

Mixed results in previous studies have been found in terms of relationship of agreeableness and GPA. For examples, research studies found that more agreeable a person, the more his GPA will be[24] while others have found no correlation between GPA and Agreeableness[25].

CONCLUSION

This study proves male students as social, outgoing, organized, and having a sense of dutifulness, cooperativeness, and straightforwardness. Further, Extraversion Agreeableness, and Neuroticism negatively predicts academic achievement of students. Conscientiousness positively predicts academic achievement.

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