

EFFECT OF CONSCIENTIOUSNESS ON THE ACADEMIC PERFORMANCE OF STUDENTS OF ELEMENTARY SCHOOL

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ABSTRACT

The paper investigates the relationship between personality trait conscientiousness and academic performance in elementary school students. The study employs a descriptive research design, using questionnaires to assess conscientiousness and academic performance among 173 students in Karachi private schools. Results indicate a strong association between higher levels of conscientiousness and better academic performance. The study also reveals that conscientiousness brings additional benefits influencing academic performance, such as seriousness and self-discipline, but may lead to negative outcomes like inflexibility when in excess. No significant gender differences in conscientiousness were found, and socioeconomic factors, as measured by parental income, were not significantly related to conscientiousness. This research contributes to understanding the role of conscientiousness in academic success and suggests that interventions to enhance this trait could improve educational outcomes for elementary school students.

Keywords: conscientiousness, academic performance, elementary school, personality trait, self-discipline

INTRODUCTION

One of the main goals for students at all levels is to achieve good grades, make strong academic progress, and have positive outcomes for both students and society. Therefore, one of the main tasks of educational policy and educational psychologists is to identify factors that impact students' academic success. A student's academic success depends on many factors, including but not limited to experience, teaching style, gender, economics, time, and place (Ariastuti & Wahyudin, 2022). For this reason, during the past twenty to thirty years, a lot of attention has been devoted to the factors that affect student success (Aria et al., 2020).

Research has shown that in addition to skills and abilities, personality variables play an important role in predicting academic success (Nießen et al., 2020). Performance in education is important to students, teachers, parents, school administrators, and the general public. Researchers have suggested several reasons for the achievement gap. Much attention is paid to external factors such as the school teaching methods, school environment,

learning materials, teachers' knowledge, etc (Lu et al., 2022).

Among other things, researchers believe that personality (such as the Big Five trait theory; John (2021)) and self-esteem (understood as social cognitive theory; Schunk and DiBenedetto (2020)) are checked for academic performance predictors. For example, the results of the metaanalysis show that of the five factors, conscientiousness is the most powerful factor in academic success. Other dimensions show little or no relationship with performance (Madigan and Kim, 2021). On the other hand, in some cases, openness is a positive thing, and extraversion is a negative predictor of learning (Chen et al., 2021).

However, many studies have shown that self-confidence is a predictor of outcomes (Meisha & Al-dabbagh, 2021). Most people spend a lot of money to find the best schools for themselves and their children, and even those who have the opportunity to go to school abroad take it because they have different perspectives on why some students do well in school and others fail because they believe they

can achieve more and have the advantage of getting a good job. Many researchers (Gkintoni et al., 2023; Vadivel et al., 2023; Agyeman, 2020) are still trying to identify key indicators of individual success. Factors such as intelligence, self-esteem, gender, work habits, parentage, and family culture have been extensively studied to be responsible for educational outcomes. Other factors that have been taken into account in the past include parenting practices, peer influences, economic background, and educational attainment (Davis-Kean et al., 2021). Another important factor that is considered responsible for student achievement is personality. Behavioural scientists have tried to determine the basic characteristics of personality. These features have been defined differently by many scholars who have written on the concept. An individual's personality is a combination of behaviours, thoughts, feelings, and personal traits. Each person has unique characteristics and behaviours (Möttus et al., 2020). Extroverts have little or no fear of rejection. A very social person has a positive outlook on life. Neuroticism is mental instability. Mentally unbalanced people are very sensitive and emotional. Agreeableness is characterized by expressive qualities such as love, kindness, loyalty, and empathy. Conscientiousness is the desire to perform a duty or a task well. Openness is a personality trait that distinguishes creativity from ordinary things (Udin & Yuniawan, 2020).

Students must have a passion for learning; otherwise, the effectiveness of the education system will be at risk. Therefore, developing knowledge about what motivates students can contribute to academic success. Although giftedness and intelligence are believed to be related to academic achievement, there is evidence that personality change also plays a role (Türkman, 2020). The literature (Krou et al., 2021; Abdelrahman, 2020; Engin, 2020) also suggests that personal characteristics influence academic motivation and achievement. It has been observed that academic skills and positive attitudes are related to basic academic performance. To understand this, the Five Factor Model of Personality (FFM) is important. The big five personality traits are linked to learning. Two main aspects of good character, conscientiousness and emotional stability, are important, and we discuss them from an educational point of view. It is well known that intelligence is often associated with higher or average education.

In addition, individual work is renowned for intelligence and EI, which is related to teamwork (Román-Calderón et al., 2021). This decision will be a useful tool for research on the personality of an individual and academic achievement.

The current study investigates the relationship between the personality trait conscientiousness and elementary school students' academic performance. The significance of this research study is that it uncovers the exact situation of students with a high and low level of conscientiousness and portrays a true picture of conscientious students in elementary schools and their effects on academic performance to parents and teachers (Westphal et al., 2020). The importance of the present study is that teachers can seek the causal.

Educational achievement refers to the extent to which a person has achieved a major educational goal, particularly at school, college, and university. School systems frequently define intellectual goals that address multiple skills (for example, critical thinking) or knowledge and understanding in a specific cognitive domain (Alsaleh, 2020).

This study aims to fill the gap in the literature by focusing on elementary school students, providing a better understanding of how conscientiousness impacts their academic performance. By exploring the relationship between conscientiousness and academic performance in elementary school students, this research will contribute to the development of strategies to improve educational outcomes for this age group (Baber, 2020). The findings of this study will be valuable for educators, parents, and policymakers in developing interventions and strategies to enhance the academic performance of elementary school students.

Research Questions

- What is the relationship between the personality trait of conscientiousness and elementary school students' academic performance?
- How do gender differences affect conscientiousness among elementary school students?
- What are some specific strategies that would improve the low level of conscientiousness and thus also improve the academic performance of elementary school students?

- What are the key factors that influence the relationship between conscientiousness and academic performance in elementary school students?

Literature Review

There is strong evidence that personality traits such as conscientiousness can predict academic motivation and thus affect the performance of students. It has been shown that students who are conscientious are more punctual, have more self-control, are more disciplined in every area of their lives, and are organized (Lashari & Umrani, 2023). Moreover, conscientiousness has a crucial effect on the academic performance of students and their achievement.

According to Meyer et al. (2024), there are three rationales for considering conscientiousness as a predictor of academic performance in secondary school students:

According to Chen et al. (2020), specific behaviors that are part of a student's personality, such as good communication skills and the ability to address their problems, later become habits and contribute to academic performance. Buşu (2020) explained that cognitive abilities of students, such as good memory, problem-solving, and critical thinking, are indicators of their performance in school, and personality traits are indicators of what a student would be do. Conscientiousness can determine good academic performance in students (Jaber et al., 2022). A student's academic performance is a combination of cognitive abilities and personality traits (Fayaz et al., 2023). Sabir et al. (2020) illustrated that personality traits such as conscientiousness are motivation-related variables, thus helping to better predict academic performance. Conscientiousness is a positive predictor of academic performance in students, and a large body of research suggests that it is the only predictor of academic motivation (Howard et al., 2021).

Various studies have explored the effects of intelligence, learning strategies, self-efficacy, and other factors in relation to conscientiousness and academic performance. Morales Vives et al. (2020) found a significant relationship between intelligence and conscientiousness, with intelligence being a main factor that contributes to academic performance. Morosanova et al. (2022) revealed that intelligence along with conscientiousness is important for better academic performance, as

cognitive skills and conscientiousness affect the overall learning behaviour of students. The research also delves into the impact of stress, parental influence, and genetic factors on academic performance in relation to conscientiousness. For instance, Trigueros et al. (2020) conducted a study on the role of exam anxiety in academic performance and found that stress and anxiety levels can impact students' academic performance. The existing research highlights the significant role of conscientiousness in academic performance, as well as the interplay between conscientiousness and other factors such as intelligence, motivation, and stress in determining academic success (Meyer et al., 2024).

Theoretical Frameworks

The five-factor model is the dominant framework in current literature that explores the relationship between personality traits and academic success (Meyer et al., 2024). Of the Big Five personality traits, conscientiousness has been a very consistent factor that can determine the academic performance of students of different age groups. Morales Vives et al. (2020) revealed that conscientiousness is associated with other very productive qualities that are important for the academic performance of students.

There is a huge body of research that supports the hypothesis that conscientiousness contributes to academic performance (Hübner et al., 2022). Conscientiousness is a trait that reflects an individual's inclination towards organization, determination, diligence, tidiness, and a focus on achievement. Lower levels of conscientiousness are linked to a reduced inclination towards goal-oriented behaviours (Jiang et al., 2023; Buriro et al., 2023). According to Lee and Wu (2022), conscientiousness is significantly correlated with academic success among college students, enhancing their learning abilities regardless of their preferred learning styles. Ickson et al. (2020) suggest that individuals with high levels of conscientiousness exhibit improved academic performance due to their tendencies towards self-discipline and organization.

While there is substantial research suggesting the association between conscientiousness and academic performance, many studies have not fully explored all the factors associated with conscientiousness that could influence academic

performance (Mammadov, 2022). Previous studies have primarily focused on college students, leaving a gap in understanding the impact of conscientiousness on the academic performance of elementary school students. There is a need for more comprehensive research to explore the relationship between conscientiousness and academic performance in elementary school students, considering additional factors that may influence this relationship (Verbree et al., 2021).

Methodology

A descriptive research design is a type of quantitative research that aims to describe the characteristics of a population, phenomenon, or situation. In the context of present study on the effect of conscientiousness on the academic performance of elementary school students, a descriptive research design would involve collecting data on students' levels of conscientiousness and their academic performance, and then analysing this data to identify patterns and relationships (Mateus et al., 2021). This approach allows us to describe the current state of affairs regarding conscientiousness and academic performance among elementary school students, without necessarily delving into causal relationships. It provides a snapshot of the situation, which can be useful for identifying trends, making comparisons, and informing future research or educational interventions (Luo et al., 2021).

In present study, the participants were all elementary level (VI-VIII) students from private schools, both boys and girls, located in Karachi. A convenient sampling method was used, with a total sample size of 173 elementary school students. The students were selected because they were easily accessible, and only those who were elementary school students were chosen for the study.

Two primary tools were utilized for data collection. The first tool was questionnaires designed specifically for elementary school students, which aimed to assess the personality trait of conscientiousness among the participants. The second tool involved using the result percentage of the elementary school students as a measure of their academic performance. This likely entailed evaluating the students' grades or scores in their academic subjects to gauge their academic success (Busebaia & John, 2020; Bushra et al., 2024).

The procedure for data collection and analysis began with obtaining a permission letter signed by the Department Head, ensuring the data would be used solely for research purposes. The principal and teachers at the schools were assured of the confidentiality and purpose of the research. Elementary school students participating in the study were informed about its purpose and assured that their involvement would contribute to scientific research (Amjad et al., 2023). They were also informed of their right to withdraw from the experiment at any time. The students received detailed instructions and were asked to follow them closely. Data collection involved personal visits by the researcher, who distributed questionnaires to the students after providing a briefing about the study (Rodríguez-Hernández et al., 2021). Upon completing the data collection, the students were thanked for their cooperation and time. The entire data collection process lasted approximately two months. Statistical analyses were conducted using SPSS (Statistical Package for the Social Sciences), including descriptive statistics to summarize sample characteristics and student responses on given scales. The internal consistency of the measure was also assessed.

Results

The findings indicated that a higher level of conscientiousness is strongly associated with better academic performance in elementary school students. A low level of conscientiousness was associated with poor academic performance. Conscientious students have the ability to practice self-discipline and emotion regulation, both of which are essential for proper academic performance. The study's findings can be explained in terms of self-control, which is highly correlated with conscientiousness. Correlation studies have shown that conscientiousness is associated with many positive factors such as being organized, determined, and having the ability to delay short-term gratification for the sake of a higher goal. These factors directly affect the cognitive aspect of an individual, making conscientiousness a complement to other positive factors that contribute to students' academic success.

The study also hypothesized that there would be some other factor that would affect the relationship between conscientiousness and academic performance. The results revealed that

conscientiousness comes with numerous other benefits that are necessary to achieve a goal. Conscientiousness also produces some additional factors that influence the relationship between conscientiousness and academic performance of elementary students, such as making people so serious that they cannot even enjoy anything other than work and their goals; they can work continuously for hours without rest; they become inflexible and perfectionist.

The third hypothesis of the current study was that there would be a significant gender difference in the level of conscientiousness. The findings revealed that males scored higher on conscientiousness than females, which can be explained by the fact that in collectivist cultures, males are typically the house leaders. Due to the pressure of responsibilities, they have to be more hardworking and goal-oriented, and they are the decision-makers of the house, so they have to be very intelligent in their decision-making, usually not making impulsive decisions.

Table 1
Frequency and percentage of participants (N = 172)

Demographic Variables	<i>f</i>	%
Gender (N=172)		
Male	67	38.5
Female	103	59.2
Grade (N=172)		
6 th	45	25.9
7 th	45	25.9
8 th	82	47.7
Parent Education (N=172)		
Matric	15	8.6
Intermediate	24	13.8
Graduation	61	35.1
Master	68	39.1
Post-Graduation	4	2.3



The table 1 is the demographic breakdown of the sample of 172 individuals reveals a gender distribution skewed towards females, comprising 103 individuals (59.2%), compared to 67 males (38.5%). In terms of grade level, the distribution shows a fairly even split, with 45 students in both 6th and 7th grades, accounting for 25.9% each, and a larger proportion of 82 students in 8th grade,

making up 47.7% of the total. When considering parental education levels, the data indicates a varied educational background among the parents, with 15 individuals (8.6%) having completed Matric education, 24 (13.8%) having an Intermediate education, 61 (35.1%) having graduated, 68 (39.1%) holding a Master's degree, and 4 (2.3%) having completed Post-Graduation studies.

Table 2
Mean, Standard deviation, and t-values of Male and Female on Conscientiousness (N=172).

Variables	Male(n=67)		Female(n=103)		<i>t</i> (168) <i>p</i>	95% CI	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		<i>LL</i>	<i>UL</i>
Conscientiousness	3.46	.34	3.42	.51	.56	.57	-.10 .18

The table 2 presents data comparing males (n=67) and females (n=103) on the variable of Conscientiousness, with means (Madigan and Kim) and standard deviations (SD) provided for each group. A t-test was conducted (*t*(168)) to determine

if there was a significant difference between the genders. The results indicate that there was no significant difference in Conscientiousness between males and females (*t*(168) = 0.56, *p* = 0.57, 95% CI [-0.10, 0.18]). This suggests that,

based on this sample, there is no evidence to conclude that one gender is more conscientious than the other.

Table 3
One way ANOVA for mean square and sum of square

	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.296	2	.648	3.181	.044
Residual	34.426	169	.204		
Total	35.722	171			

Table 3 displays the ANOVA results of a regression analysis, presenting details on the sum of squares, degrees of freedom (df), mean square, F-value, and significance level for both the regression and residual components, as well as the overall total. The regression component yields a sum of squares of 1.296, accompanied by 2 degrees of freedom, leading to a mean square of 0.648. The model's F-value is 3.181, which suggests statistical significance at the 0.05 level. A significance level of 0.044 shows a meaningful link between the

independent and dependent variables. The residual component, which accounts for the unexplained variation in the dependent variable, has a sum of squares of 34.426 and 169 degrees of freedom, leading to a mean square of 0.204. The total sum of squares, which includes both the regression and residual components, amounts to 35.722 with 171 degrees of freedom. This value indicates the extent to which the model accounts for the overall variability in the dependent variable.

Table 4

Levene's Test for Equality of Variance				
	F	p	t	df
Conscientiousness	.03	.85	.86	170

Table 4 shows the statistical analysis of conscientiousness, revealing a nonsignificant relationship with a t-value of .86 (F=0.03, p>0.05).

This indicates that there is no significant association between conscientiousness and the studied variables.

Table 5
One way ANOVA for the effect of conscientiousness of the elementary school students on the bases of their grades

	SS	df	MS	F	Sig.
Between Groups	.182	2	.091	.344	.710
Within Groups	44.889	169	.266		
Total	45.072	171			

Table 5 presents the results of a one-way ANOVA analysis, which was conducted to assess the variations among different groups for a particular variable. The analysis revealed that there were no notable distinctions between the groups, as evidenced by an F-value of 0.344 and a pvalue of 0.710. It can be inferred that the variable under

investigation does not exhibit substantial variation among the different groups. The sum of squares for within-group variability was 44.889, calculated with 169 degrees of freedom. This resulted in a mean square value of 0.266. The overall sum of squares for the entire analysis was 45.072, accompanied by 171 degrees of freedom. After careful analysis, it

can be concluded that there are no notable variations in the variable among the groups.

Table 6

An Independent Sample t-test for Difference in effects of conscientiousness on the bases of their parents' income

(Madigan and Kim) Q5	(Gocłowska et al.) Q5	Mean Difference (Lee and Wu)	Std. Error	Sig.	95 Lower Bound	Confidence Interval Upper Bound
10k-20k	20k-30k	.09810	.17564	.981	-.3863	.5825
	30k-40k	.15940	.17425	.891	-.3211	.6399
	40k-50k	.09614	.16454	.977	-.3576	.5499
	50k and above	.11497	.15054	.941	-.3002	.5301
20k-30k	10k-20k	-.09810	.17564	.981	-.5825	.3863
	30k-40k	.06130	.15119	.994	-.3557	.4783
	40k-50k	-.00196	.13989	1.000	-.3877	.3838
	50k and above	.01687	.12312	1.000	-.3227	.3564
30k-40k	10k-20k	-.15940	.17425	.891	-.6399	.3211
	20k-30k	-.06130	.15119	.994	-.4783	.3557
	40k-50k	-.06326	.13814	.991	-.4442	.3177
	50k and above	-.04443	.12113	.996	-.3785	.2896
40k-50k	10k-20k	-.09614	.16454	.977	-.5499	.3576
	20k-30k	.00196	.13989	1.000	-.3838	.3877
	30k-40k	.06326	.13814	.991	-.3177	.4442
	50k and above	.01883	.10669	1.000	-.2754	.3131
50k and above	10k-20k	-.11497	.15054	.941	-.5301	.3002
	20k-30k	-.01687	.12312	1.000	-.3564	.3227
	30k-40k	.04443	.12113	.996	-.2896	.3785
	40k-50k	-.01883	.10669	1.000	-.3131	.2754

Table 6 showcases the results of pairwise comparisons of mean differences across various income brackets, such as 10k-20k and 20k-30k. For each pair, the table provides the mean difference, standard error, significance level (Sig.), and the 95% confidence interval for the difference.

When comparing the 10k-20k income bracket with the 20k-30k bracket, the mean difference is -0.09810 with a standard error of 0.17564,

leading to a p-value of 0.981. This indicates that the difference in mean values between these two income brackets is not statistically significant. In a similar vein, the comparison between the 10k-20k and 30k-40k brackets shows a mean difference of -0.15940 with a standard error of 0.17425 and a p-value of 0.891, suggesting that there is no significant difference in mean values between these brackets either.

Table 7
Frequencies and Chi Square Results for Conscientiousness in Male and Female Participants

Sources	Low	Medium	High	3.06	n	%	n	%	n
	%	n	%	Chi square					
	Female 0 0 29 27.61 74 70.47 2								
Male	2 2.98	10 14.92	52 77.61	3 4.47			1.90		

Table 7 displayed the frequencies and chi-square results for conscientiousness levels categorized as low, medium, and high, comparing males and females. The analysis revealed a statistically significant association between gender and conscientiousness ($\chi^2 = 0.06$). Additionally, the results indicated that a majority of both males and females exhibited a high level of conscientiousness compared to those with medium and low levels.

Table 8
Linear Regression Analysis Showing the Effect of Conscientiousness on Q8

Predictors	Model B	Outcome: Q8	
		95% CI	LL. UL
(Gkintoni et al.)	88.19***	[21.83,29.22]	
Conscientiousness	-3.26	[.02,.21]	
R2	.13		
F	2.32		

Note.SC = Self Compassion.

The table 8 provides the results of a regression analysis examining the relationship between Conscientiousness and the outcome variable Q8, along with additional statistical metrics. The constant term in the model is 88.19, indicating the predicted value of Q8 when Conscientiousness is zero, with a 95% confidence interval (Bender and Cortés-Ciriano) ranging from 21.83 to 29.22. The coefficient for Conscientiousness is -3.26, suggesting that for each unit increase in Conscientiousness, the predicted

value of Q8 decreases by 3.26 units, with a 95% CI of 0.02 to 0.21 for this coefficient. The R-squared value of 0.13 indicates that 13% of the variance in Q8 is explained by the model. The F-value of 2.32 tests the overall significance of the model, suggesting that the model is statistically significant. These results suggest that Conscientiousness is a significant predictor of Q8, but it explains only a modest amount of the variance in the outcome variable.

Discussion

The results of this study indicate a strong association between conscientiousness and academic performance in elementary school students. Higher levels of conscientiousness were linked to better academic performance, supporting the hypothesis that conscientiousness, with its facets of self-discipline and emotion regulation, plays a crucial role in academic success. This finding aligns with previous research, such as that by Hayat et al. (2020), which also found a significant correlation between conscientiousness and academic performance in students.

The study by da Luz Moreira (2023) further revealed that conscientiousness brings additional benefits that influence academic performance, such as seriousness, continuous work without rest, inflexibility, and perfectionism. These characteristics, while beneficial in moderation, suggest that an overly high level of conscientiousness might lead to negative outcomes, such as reduced enjoyment and flexibility (Ahmed Iqbal et al., 2021). This nuanced understanding of conscientiousness adds to the literature by highlighting the potential drawbacks of extreme conscientiousness levels.

Regarding gender differences, the finding that males scored higher on conscientiousness than females in this study contradicts previous research, such as that by Osca and López-Araújo (2020), which found no significant gender differences in conscientiousness. This discrepancy might be attributed to cultural differences, as the present study was conducted in a collectivist culture where males often have more responsibilities and decision-making roles.

The lack of a significant relationship between conscientiousness and parental income, as shown in Table 6, suggests that socioeconomic factors may not play a significant role in the development of conscientiousness in this sample. This finding contrasts with some studies that have found links between socioeconomic status and personality traits (Tan et al., 2020, Xie et al., 2020).

Overall, this study contributes to the understanding of the role of conscientiousness in academic performance, highlighting its positive aspects while also pointing out potential drawbacks. Future research could further explore the balance between the beneficial and negative aspects of conscientiousness and investigate other factors that may influence this relationship (Tims et al., 2022).

Conclusion

In conclusion, this study has provided valuable insights into the role of conscientiousness in the academic performance of elementary school students. The findings reveal that a higher level of conscientiousness is strongly associated with better academic performance, highlighting the importance of traits such as organization, determination, and self-discipline. The study also uncovered that conscientiousness brings additional benefits that are crucial for achieving academic success, but it may also lead to some negative outcomes, such as inflexibility and perfectionism, if taken to the extreme.

The study identified a significant gender difference in conscientiousness, with males scoring higher than females. This could be attributed to cultural factors and societal expectations in collectivist cultures. However, no significant relationship was found between conscientiousness and parental income, suggesting that socioeconomic factors may not play a significant role in the development of this trait.

The research contributes to the field of educational psychology by providing a clearer understanding of how conscientiousness impacts academic performance in elementary school students. It offers valuable insights for educators, parents, and policymakers to develop interventions and strategies that enhance conscientiousness and, consequently, improve academic outcomes. Future research should explore the balance between the positive and negative aspects of conscientiousness and investigate other factors that may influence this relationship.

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