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Where Students Come From Matters: Socioeconomic Inequality And Academic Performance In Public Schools

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ABSTRACT

Education plays a vital role in the Sustainable Development Goals. Numerous researchers focused on sustainable development have emphasized the need for investigations in this important domain. This research addresses these calls for further inquiry. The objective of the study is to evaluate significant differences in the academic achievement of male matriculation students in public schools based on various identified socioeconomic and educational factors. The research employed systematic and proportionate sampling methods to choose the participants. A total of three hundred participants were selected. To test the hypotheses of the study, one-way ANOVA and Tukey HSD post hoc tests were applied. The findings indicated a significant variation in academic performance across different categories of parental education, household income, socioeconomic status, and previous performance. The study did not find any significant differences in the academic performance of students across various categories of family size. The study highlights the significance of socioeconomic and educational factors in determining the academic performance of students. It has specific implications for policymakers and education administrators. It also has broad ramifications for sustainable development goals.

Keywords: *Socioeconomic status, parental education, sustainable development goals, public schools, family size.*

INTRODUCTION

The Sustainable Development Goals (SDGs) are greatly advanced by education since they provide inclusive, equitable, high-quality education and encourage opportunities for lifelong learning for all. Education, as a basic human right, enables people to develop the talents, abilities, and knowledge required for sustainable growth on an individual, community, and societal level (Boeve-de Pauw, Gericke, Olsson, & Berglund, 2015). Education increases economic growth, lowers inequality, and promotes social cohesion by fostering literacy, numeracy, critical thinking, and problem-solving abilities. Moreover, one of the important aspects of education that need immediate attention is academic performance. It is important to comprehend the dynamics and variables that affect students' academic performance (Agbedahin, 2019).

Student academic performance is an important field of research with broad implications for educational justice, societal advancement, and individual success. Academic performance is a key determinant of educational success and has a significant impact on future possibilities and social mobility for an individual (Aguirre-Dávila, Morales-Castillo, & Moreno-Vásquez, 2023). Academic achievement is strongly associated with several favorable outcomes, such as greater income levels, better health outcomes, and enhanced civic involvement, in addition to its direct impact on educational trajectories

(X. Chen, Huang, & Huang, 2023). Furthermore, finding and solving gaps in learning outcomes depend on an understanding of the factors that influence academic success. Significant achievement gaps based on economic status, race, ethnicity, and other demographic characteristics have been repeatedly shown by research (Cheng, Armatas, & Wang, 2020). To promote educational fairness and make sure that all young people have access to the tools and support they need to succeed academically, it is critical to investigate the reasons behind these discrepancies. While the importance of education in the SDGs is recognized, limited research explores significant differences in academic performance regarding socioeconomic and prior educational disparities among students.

The current study aims to investigate these factors proposes to find significant differences in academic performance across various categories of socioeconomic and educational factors among male matriculation of public schools. This study is particularly written to examine the relationship of different socioeconomic factors to academic performance such as family size, parental education, family income and the previous academic performance of parents. In the course of this research it is tried to advance the connection between socioeconomic background and the academic achievement in an education system of matriculation level in public schools.

This study is important because it can help shape focused programmes and policies that try to enhance academic performance and lessen gaps in educational attainment. The knowledge of these important socioeconomic factors that affect academic success can enhance the development of potential solutions and strategies to address the underlying causes of educational inequities and improve educational equity. Furthermore, the results of this study have implications for the planning and execution of successful at-risk student support programmes, which will eventually improve the students' prospects of both academic success and development of the socio-economic status.Through an analysis of the effects of parental education, household income, prior educational performance, socioeconomic status, and family size, this research seeks to advance our knowledge of the variables influencing educational outcomes and provide guidance for initiatives that support educational equity and excellence. Additionally, research on academic achievement is critical to advancing educational justice, society advancement, and personal well-being. Through an examination of the socioeconomic factors influencing academic achievement among male students matriculating into public schools, this study aims to advance our knowledge of the variables affecting educational outcomes and provide guidance for the development of a more inclusive and equitable educational system.

LITERATURE REVIEW

Academic performance is a complex construct that is shaped by a range of contextual, familial, and individual factors. This section reviews the body of research on the socioeconomic factors that influence academic performance in the context of public-school matriculation. Specifically, we look at parental education, household income, prior educational attainment, socioeconomic status (SES), and family size.

One of the most reliable indicators of academic success is parental education (Beckmeyer, Troilo, & Markham, 2020; Berkowitz et al., 2021; Bodovski, Munoz, & Apostolescu, 2022; Boonk, Gijselaers, Ritzen, & Brand-Gruwel, 2022). Higher parental education levels are associated with higher academic accomplishment since research continuously shows a positive correlation between parental education levels and children's academic outcomes (Grijalva-Quiñonez, Valdés-Cuervo, Parra-Pérez, & Vazquez, 2020; Guo, Guo, He, Liu, & Luo, 2020; Ibrahim, Musthafa, & Marikar, 2021). Numerous reasons, such as higher parental involvement in school, easier access to educational materials, and the passing down of academic expectations and ideals from parents to children, can be ascribed to this relationship (Panaoura, 2021). A further significant factor influencing academic performance is household income, however, it has varied and intricate consequences. The relationship between household income and academic performance is not always straightforward, but research shows, that more household income is linked to better academic outcomes because of improved access to educational resources and opportunities (Dong, 2022). The association between household income and academic performance can

be moderated by variables like income inequality, neighbourhood features, and access to high-quality schools, which can result in differences in educational results (Y. Liu, Q. Jiang, & F. Chen, 2020a).

Additionally, future academic success is strongly predicted by prior educational performance, which is frequently assessed by grades or results on standardised tests (Kleemola & Hyytinen, 2019; Kleemola, Hyytinen, & Toom, 2023; Kriegbaum, Jansen, Spinath, & differences, 2015). Higher achievers in earlier grades have a greater chance of maintaining or improving their academic standing over time. Furthermore, students' interest and perseverance in studying might be influenced by their past academic success, which can act as a substitute for academic aptitude and motivation. Likewise, academic performance is significantly impacted by socioeconomic status (Arshad, Ahmed, & Tayyab, 2019; Brinkworth, McIntyre, Juraschek, & Gehlbach, 2018). Socioeconomic status (SES) is a person's or family's social and economic status in society, which is usually based on income, education, occupation and access to resources. It includes objective factors (income level, education) as well as subjective feelings of social status and financial stability. SES is frequently used as a measure of the relative disadvantage/disadvantage of a person or household within a particular social context. There is a typical achievement difference between higher and lower SES students, and this achievement gap is, in large part, due to SES differences. The mechanisms underlying the SES-achievement relationship are cultural capital, social networks that affect academic achievement, and access to educational resources (Hu, 2023). Another significant factor associated with academic performance is family size. While it has not been extensively studied concerning academic performance, it is acknowledged as a potential socioeconomic determinant (Usen, 2016). Research indicates that larger family sizes may be associated with less parental resources and attention available for each child, which may harm academic outcomes (Blaabæk, Jæger, & Molitoris, 2020; C. Chen, Terrizzi, Chou, & Lien, 2020). Nevertheless, other factors, such as parental education and socioeconomic status, may mediate the relationship between family size and academic performance (Rodríguez et al., 2019).

Overall, the research indicates that when assessing the academic performance of male matriculation students in public schools, socioeconomic and educational aspects are critical considerations. Therefore, the goal of the study is to look into notable variations in public school matriculation students' academic performance across a range of categories of recognised socioeconomic and educational characteristics. Particularly, this study aims to assess significant differences in academic performance across various categories of parental education, household income, prior educational performance, socioeconomic status, and family size.

MATERIAL AND METHODS

The population of the study was all the 9th grade students of public schools in Faisalabad district. The reason for selecting these students was that they had a complete academic record in the form of result card for 8 class. This was an important card because the study was also to evaluate the effects of the previous academic performance. Target population was the 9th standard male students at all Public schools in Tehsil City, Faisalabad. The sampling method used in this study was multistage sampling. The district of Faisalabad is made up of six tehsils. Simple random sampling was used to choose one sample for the first stage. There were 40 male schools in this tehsil. The District Education Officer's (DEO) Faisalabad office gave a list of the schools. Ten schools were chosen at random from the teacher selection pool for the second stage. Finally, basic random sampling of the students in each class was used to select the participants. Proportionate sampling technique was used to select students. Pupils were chosen from each class. Four hundred and fifty of the students were given questionnaires. 330 surveys were completed. There were 30 questions that were not completed or had some missing value. Consequently, these surveys were not given any thought. Finally, 300 surveys were discovered to be accurate and comprehensive.

The study variables were measured using a structured questionnaire administered to the participants. For mother and father education, respondents were asked to indicate the highest level of education completed by their parents, with options ranging from "Illiterate (No Schooling)" to "Higher Level

(College, University)." Household income was assessed by asking participants to estimate their family's annual income within specified income brackets. Prior performance was self-reported by participants, who rated their academic performance in the previous academic year as "Low performance," "Average performance," or "High performance." Socioeconomic status (SES) was determined based on participants' subjective perceptions of their family's socioeconomic status, categorized as "Low," "Medium," or "High." Family size was determined by asking participants to indicate the number of members in their immediate family, with options for "Small" (1-3 members), "Medium" (4-6 members), or "Large" (7 or more members). These items were carefully chosen to capture key sociodemographic factors that could potentially influence academic performance among the study participants.

In the present study, students' academic performance was operationalized in terms of their scores in the board examination, which represents one of the most commonly used indicators of academic achievement and is particularly relevant to the immediate educational environment in which students' study. The dependent variable was measured using the standardized composite score obtained by each student in the Grade 9 examination conducted annually by the Board of Intermediate and Secondary Education (BISE), Faisalabad. The examination score was treated as an interval-level variable, with total possible scores ranging from 0 to 550. Throughout the study, the terms *academic performance*, *academic achievement*, *educational results*, *academic attainment*, *academic score*, and *academic marks* were used interchangeably to refer to students' examination performance.

Using a cross-sectional and quantitative research approach, the study's hypotheses were evaluated. IBM SPSS for Windows (27 version) was used in the study to administer the One- way ANOVA and post hoc tests. To find out if there are statistically significant differences in a dependent variable across three or more independent groups, a one-way ANOVA test is employed. It evaluates whether score distributions differ amongst groups, providing valuable information regarding potential group distinctions. Tukey HSD tests were used to assess significant differences between the different categories of independent variables after this test.

RESULTS AND DISCUSSIONS

Table 1. Sociodemographic characteristics		
Mother education	**Frequency**	**Percentage**
Illiterate (No Schooling)	64	21.3
Primary Level (I-V)	53	17.7
Secondary Level (VI-X)	110	36.7
Higher Level (College, University)	73	24.3
Father education		
Illiterate (No Schooling)	54	18
Primary Level (I-V)	41	137
Secondary Level (VI-X)	103	34.3
Higher Level (College, University)	102	34
Household income		
less than 10000	64	21.3
10000—29999	80	26.7
30000-49999	59	19.7
50000-69999	61	20.3
70000-89999	24	8.0
More than 90000	12	4.0
Prior performance		
Low performance	102	34.0
Average performance	135	45.0
High performance	63	21.0
SES		

Low	76	25.3
Medium	150	50.0
High	74	24.7
Family size		
Small	88	29.3
Medium	177	59.0
Large	35	11.7

Table 1 presents the sociodemographic characteristics of the study participants. Among the mothers, the highest percentage (36.7%, n = 110) had completed education up to the secondary level (VI-X). This was followed by 24.3% (n = 73) of mothers who had education at a higher level (college or university). A significant portion (21.3%, n = 64) of mothers had no formal schooling, while 17.7% (n = 53) had completed education up to the primary level (I-V).

Table 2. One way ANOVA						
Variables	**mean**	**Sd**	**df**	**F**	**p**	**η2**
Mother education			**3**	**15**	**.000**	**.13**
Illiterate (No Schooling)	297.53	66.577				
Primary Level (I-V)	303.34	66.659				
Secondary Level (VI-X)	339.69	70.067				
Higher Level (College, University)	367.32	72.711				
Father education			3	12.28	.000	.11
Illiterate (No Schooling)	285.09	62.553				
Primary Level (I-V)	326.41	74.429				
Secondary Level (VI-X)	331.48	63.424				
Higher Level (College, University)	356.66	78.462				
Household income			5	11.16	.000	.16
less than 10000	292.64	63.699				
10000--29999	320.36	77.889				
30000-49999	335.92	67.127				
50000-69999	344.89	61.042				
70000-89999	376.75	75.334				
More than 90000	420.17	52.662				
Prior performance			2	74.19	.000	.33
Low performance	285.61	54.852				
Average performance	331.15	60.157				
High performance	404.16	70.336				
SES			2	32.53	.000	.18
Low	296.89	67.298				
Medium	322.83	66.894				
High	382.57	68.375				
Family size			2	1.81	1.5	.01
Small	340.56	70.951				
Medium	329.90	73.930				
large	312.49	80.940				

Regarding fathers' education, the largest proportion (34.3%, n = 103) had education up to the secondary level (VI-X). A third of the respondents (34%, n = 102) received higher education (college or university). A small percentage of fathers (18%, n = 54) were without any formal schooling and a lesser proportion (13.7%, n = 41) had attained only primary level (I-V). Regarding household income, most households were in the 10-29,999 income band with 26.7% (n = 80) of the total participants. About 21.3% (n = 64) of households had an income of less than 10,000, while 20.3% (n = 61) had an income

between 50,000 to 69,999. Relatively fewer households reported higher incomes, with 8.0% (n = 24) earning between 70,000 to 89,999, and 4.0% (n = 12) earning more than 90,000. With respect to their previous academic performance, the majority of the participants (45.0%, n = 135) indicated an average performance and 34.0% (n = 102) indicated low performance and 21.0% (n = 63) indicated high performance. In terms of socioeconomic status (SES), half of the participants (50.0%, n = 150) fell into the medium SES category, while 25.3% (n = 76) were classified as low SES and 24.7% (n = 74) as high SES. Lastly, regarding family size, the majority (59.0%, n = 177) reported a medium-sized family, followed by 29.3% (n = 88) reporting a small family size, and 11.7% (n = 35) reporting a large family size. Table 2 presents the results of one-way ANOVA and Table 3 shows results of Post hoc test of Tukey HSD.

H1: There are significant differences in academic performance across different education levels of mothers.

Hypothesis H1 evaluates if there are significant differences in academic performance across different education levels of mothers. The results of A one-way ANOVA revealed a statistically significant difference in academic performance across different education levels of mothers ($F (3, 296) = 15.00$, $p < .001$, $\eta^2 = .13$), indicating a moderate effect size. Moreover, η^2, also known as eta-squared, is a measure of effect size commonly used in analysis of variance (ANOVA) to quantify the proportion of variance in the dependent variable that is explained by the independent variable(s). In qualitative terms, η^2 indicates the strength or magnitude of the relationship between the independent and dependent variables. Tukey's HSD test for multiple comparisons found significant differences in mean academic performance between illiterate mothers and those with secondary level education ($p = .001$, 95% CI = [-70.35, -13.97]), illiterate mothers and those with higher education ($p < .001$, 95% CI = [-100.49, -39.07]), primary level educated mothers and those with secondary level education ($p = .010$, 95% CI = [-66.34, -6.36]), primary level educated mothers and those with higher education ($p < .001$, 95% CI = [-96.34, -31.61]), and secondary level educated mothers and those with higher education ($p = .044$, 95% CI = [-54.70, -0.55]). This finding is consistent with that of Chung, Phillips, Jensen, and Lanier (2020) who found that a mother's education level makes significant differences in the academic performance of students.

H2: There are significant differences in academic performance across different levels of Father Education.

Hypothesis H2 evaluates if there are significant differences in academic performance across different levels of Father Education. A one-way ANOVA revealed a statistically significant difference in academic performance across different levels of father education ($F (3, 296) = 12.28$, $p < .001$, $\eta^2 = .11$), indicating a moderate effect size. Tukey's HSD test found significant differences in mean academic performance between illiterate fathers and those with primary level education ($p = .025$, 95% CI = [-78.92, -3.72]), illiterate fathers and those with secondary level education ($p = .001$, 95% CI = [-76.88, -15.89]), illiterate fathers and those with higher education ($p < .001$, 95% CI = [-102.11, -41.02]), and between fathers with primary level education and those with no formal schooling ($p = .001$, 95% CI = [15.89, 76.88]). Comparison of this finding with those of other studies confirms that father education is an important factor that affects the academic performance of students (Ibrahim et al., 2021; Kemple Reeves, Domenech Rodríguez, & Vázquez, 2023; Kim & Society, 2020).

H3: There are significant differences in academic performance across different levels of household income

Hypothesis H3 is assessed whether there is any difference in academic performance between the various income levels of the households. The results of the one-way ANOVA showed that the academic performance of students was statistically significantly different among the various income levels ($F(5, 294) = 11.16$, $p < .001$, $\eta^2 = .16$) with a moderate effect size. Tukey's HSD test found significant differences in mean academic performance between households with incomes less than 10,000 and all

other income groups ($p < .007$, 95% CI = [-127.526, -65.68]), and between households with incomes between 10,000-29,999 and those with incomes more than 90,000 ($p < .002$, 95% CI = [-99.804, -38.94]). This implies that students of the lower income group have lower academic performance than those of the upper income group. Also, the effect size suggests that a moderate portion of the variation in academic achievement between male students in public schools who are in matriculation is accounted for by household income.

H4: There are significant differences in academic performance across different levels of Prior educational performance.

H4 is whether or not there are significant differences in academic performance between the different Prior educational performance levels. A one-way ANOVA showed that the performance of students in academic achievement based on their previous educational performance was significantly different with a large effect size ($F (2, 297) = 74.19$, $p < .001$, $\eta^2 = .33$). Tukey's HSD test found significant differences in mean academic performance between low and average-performance groups ($p < .001$, 95% CI = [-64.31, -26.77]), low and high-performance groups ($p < .001$, 95% CI = [-141.48, -95.63]), and average and high-performance groups ($p < .001$, 95% CI = [-94.84, -51.18]). This is also consistent with our previous observations that students' academic performance is affected by their previous education. What students have learned in the past is a capital that can be used in future classes (Alla, 2019; Anane, 2020; Kleemola & Hyytinen, 2019; Kleemola et al., 2023).

H5: There are significant differences in academic performance across different levels of socioeconomic status.

The hypothesis evaluates if *there are significant differences in academic performance across different levels of socioeconomic status*. A one-way ANOVA revealed a statistically significant difference in academic performance across different levels of socioeconomic status ($F(2, 297) = 32.53$, $p < .001$, $\eta^2 = .18$), indicating a large effect size. Tukey's HSD test found significant differences in mean academic performance between low and medium SES groups ($p = .018$, 95% CI = [-48.28, -3.60]), low and high SES groups ($p < .001$, 95% CI = [-111.59, -59.76]), and medium and high SES groups ($p < .001$, 95% CI = [-82.28, -37.19]). To this result, previous studies have demonstrated that SES significant factor that differentiates between academically high performers and low performers (C. Chen et al., 2020; Shen, 2023; Yi, Na, & Lee, 2023).

Table 3. Multiple comparisons				
Groups	**Mean difference**	**95% CI Upper**	**Lower**	**P**
Mother education				
Illiterate-Secondary Level (VI-X)	-42.160*	-70.35	-13.97	.001
Illiterate-Higher Level (College, University)	-69.784*	-100.49	-39.07	.000
Primary-Secondary Level (VI-X)	-36.351*	-66.34	-6.36	.010
Primary-Higher Level (College, University)	-63.975*	-96.34	-31.61	.000
Secondary-Higher Level (College, University)	-27.624*	-54.70	-.55	.044
Father education				
Illiterate (No Schooling)-Primary Level (I-V)	-41.322*	-78.92	-3.72	.025
Illiterate (No Schooling)-Secondary Level (VI-X)	-46.383*	-76.88	-15.89	.001
Illiterate (No Schooling)-Higher Level (College, University)	-71.564*	-102.11	-41.02	.000

Primary Level (I-V)- Illiterate (No Schooling	46.383*	15.89	76.88	.001
Household income				
less than 10000-30000-49999	-43.275*	-78.76	-7.79	.007
less than 10000-50000-69999	-52.245*	-87.42	-17.07	.000
less than 10000-70000-89999	-84.109*	-131.17	-37.05	.000
less than 10000-More than 90000	-127.526*	-189.37	-65.68	.000
10000-29999-70000-89999	-56.388*	-102.14	-10.63	.006
10000-29999-More than 90000	-99.804*	-160.66	-38.94	.000
30000-49999-More than 90000	-84.251*	-146.51	-22.00	.002
Prior performance				
Low-Average performance	-45.540*	-64.31	-26.77	.000
Low-High performance	-118.551*	-141.48	-95.63	.000
Average-High performance	-73.011*	-94.84	51.18	.000
SES				
Low-Medium	-25.939*	-48.28	-3.60	.018
Low-High	-85.673*	-111.59	-59.76	.000
Medium-High	-59.734*	-82.28	-37.19	.000
Family size				
Small-Medium	10.653	12.06	33.36	.03
Small-High	28.071	6.72	62.86	.02
Medium-High	17.418	14.79	49.63	.04

Note: Statistical Test. Tukey HSD
*. The mean difference is significant at the 0.05 level.

H6: There are significant differences in academic performance across different levels of Family size.

Hypothesis H6 evaluates if *there are significant differences in academic performance across different levels of Family size.* A one-way ANOVA did not reveal a statistically significant difference in academic performance across different levels of family size ($F(2, 297) = 1.81$, $p = .5$), indicating a negligible effect size. In contrast to earlier findings, however, no evidence of family size making a difference in the academic performance of students was found (Blaabæk et al., 2020; Liu et al., 2020b). Plausible reasons for this unexpected finding are changes in societal norms, educational policies, or family structures over time. This may influence the relationship between family size and academic performance. Consequently, leading to varying results across studies conducted at different time points.

CONCLUSION

Finally, it concludes with the importance of socioeconomic and educational factors on the academic outcomes of male learners at the end of matriculation in public schools. The results demonstrate significant achievement gaps based on a variety of factors such as family income, family socioeconomic status, parental education, and prior achievement. The findings highlight the need to focus on tackling educational disparities and providing targeted interventions for students from disadvantaged backgrounds. In addition, the implications of this study go beyond the educational context, as they have wider implications for Sustainable Development Goals. Recognizing the interlinkage of education and sustainable development can help policy makers and education administrators design strategies to deliver equitable access to quality education and inclusive learning environments. In conclusion, tackling socioeconomic inequalities in education is crucial for the development and realization of sustainable development. The study is therefore valuable contribution to previous studies since it provides a general picture of academic performance of male grade 9 students in the public schools.

REFERENCES

Agbedahin, A. V. 2019. Sustainable development, Education for Sustainable Development, and the 2030 Agenda for Sustainable Development: Emergence, efficacy, eminence, and future. Sustainable Development *27*: 669-680.

Aguirre-Dávila, E., Morales-Castillo, M., & Moreno-Vásquez, M. 2023. Parenting, autonomy and academic achievement in the adolescence. Journal of Family Studies *29*: 63-76. doi: 10.1080/13229400.2021.1871935

Alla, N. D. 2019. The predictive validity of prior academic achievement as an indicator of medical students' performance at University of Khartoum. Journal of Medical Education *18: 1-13*.

Anane, E. 2020. A Multiple Mediation Analysis of the Effect of Prior Performance on Academic Achievement Through Student Teachers' Motivational Orientations. Higher Education Research *5*:118-130.

Arshad, M., Ahmed, G., & Tayyab, M. 2019. Assessing the effects of school support facilities on academic achievement at Punjab Education Foundation Partner Schools. European Online Journal of Nat 13:124-140

J., & Markham, M. S. 2020. Parental Academic Involvement and Youth Well-Being in Post-Divorce Families. Journal of Divorce & Remarriage *61*: 443-462. doi: 10.1080/10502556.2020.1768491

Berkowitz, R., Astor, R. A., Pineda, D., DePedro, K. T., Weiss, E. L., & Benbenishty, R. J. U. E. 2021. Parental involvement and perceptions of school climate in California *56*: 393-423.

Blaabæk, E. H., Jæger, M. M., & Molitoris, J. J. E. J. o. P. 2020. Family size and educational attainment. Cousins, contexts, and compensation *36*: 575-600.

Bodovski, K., Munoz, I. G., & Apostolescu, R. 2022. Parental Help With Homework in Elementary School: Much Ado About Nothing? Journal of Research in Childhood Education *36*: 631-647. doi: 10.1080/02568543.2022.2027830

Boeve-de Pauw, J., Gericke, N., Olsson, D., & Berglund, T. 2015. The effectiveness of education for sustainable development. Sustainability *7*: 15693-15717.

Boonk, L. M., Gijselaers, H. J. M., Ritzen, H., & Brand-Gruwel, S. 2022. Student-perceived parental involvement as a predictor for academic motivation in vocational education and training (VET). Journal of Vocational Education & Training *74*: 187-209. doi: 10.1080/13636820.2020.1745260

Brinkworth, M. E., McIntyre, J., Juraschek, A. D., & Gehlbach, H. 2018. Teacher-student relationships: The positives and negatives of assessing both perspectives. Journal of Applied Developmental Psychology *55*: 24-38.

Chen, C., Terrizzi, S., Chou, S.-Y., & Lien, H.-M. J. E. E. 2020. The effect of sibship size on the educational attainment of the first born: evidence from three decennial censuses of Taiwan.Empirical Economics 16: 1-32.

Chen, X., Huang, J., & Huang, Y. 2023. Impacts of sibling and gender on supplementary education opportunities in China. Cogent Education *10*: 2166309. doi:10.1080/2331186X.2023.2166309

Cheng, L., Armatas, C., & Wang, J. 2020. The impact of diversity, prior academic achievement and goal orientation on learning performance in group capstone projects. Higher Education Research & Development *39*: 913-925.

Chung, G., Phillips, J., Jensen, T. M., & Lanier, P. J. F. p. 2020. Parental involvement and adolescents' academic achievement: Latent profiles of mother and father warmth as a moderating influence. Family Process *59*: 772-788.

Dong, R. 2022. How Do Household Income and Education Level Affect People's Mental Health Conditions? Journal of Research in Social Science and Humanities *1*: 54-66.

Grijalva-Quiñonez, C. S., Valdés-Cuervo, A. A., Parra-Pérez, L. G., & Vazquez 2020. Parental involvement in Mexican elementary students' homework: Its relation with academic self-efficacy, self-regulated learning, and academic achievement. Psicología Educativa *26*: 129-136.

Guo, X., Guo, L., He, S., Liu, C., & Luo, L. 2020. Mothers' filial piety and children's academic achievement: the indirect effect via mother-child discrepancy in perceived parental expectations. Educational Psychology *40*: 1230-1248. doi: 10.1080/01443410.2020.1749235

Hu, Y. (2023). Private Tutoring Classes and Emotional Well-Being in China: Bidirectional Relationship and the Role of Academic Achievement. Chinese Education & Societ *56*: 173-190. doi:10.1080/10611932.2023.2251848

Ibrahim, M. M., Musthafa, R., & Marikar, F. M. M. T. 2021. Parental Involvement and Academic Achievement in Muslim Minority Communities Living in the United Kingdom and Sri Lanka: Implications for Children's Academic Excellence. Journal of Muslim Minority Affairs *41*: 590-607. doi: 10.1080/13602004.2022.2034679

Kemple Reeves, A. E., Domenech Rodríguez, M. M., & Vázquez, A. L. (2023). The Intergenerational Transmission of Parental Factors that Influence Educational Attainment among Latinxs in the U.S. Journal of Latinos and Education *22*: 826-841. doi: 10.1080/15348431.2020.1843463

Kim, S. W. J. E., & Society, U. 2020. Meta-analysis of parental involvement and achievement in East Asian countries. Education and Urban Society *52*: 312-337.

Kleemola, K., & Hyytinen, H. 2019. Exploring the relationship between law students' prior performance and academic achievement at university. Education Sciences *9*: 236.

Kleemola, K., Hyytinen, H., & Toom, A. 2023. Critical thinking and writing in transition to higher education in Finland: do prior academic performance and socioeconomic background matter? European Journal of Higher Education *13*: 488-508.

Kriegbaum, K., Jansen, M., Spinath, B. J. L., & differences, i. 2015. Motivation: A predictor of PISA's mathematical competence beyond intelligence and prior test achievement. Learning and individual differences *43*:140-148.

Liu, Y., Jiang, Q., & Chen, F. 2020a. Children's gender and parental educational strategies in rural and urban China: The moderating roles of sibship size and family resources. Chinese sociological review *52*: 239-268.

Liu, Y., Jiang, Q., & Chen, F. J. C. S. R. 2020b. Children's gender and parental educational strategies in rural and urban China: The moderating roles of sibship size and family resources *52*: 239-268.

Panaoura, R. 2021. Parental Involvement in Children's Mathematics Learning Before and During the Period of the COVID-19.Social Education Research 16: 65-74.

Rodríguez, S., Núñez, J. C., Valle, A., Freire, C., Ferradás, M. d. M., & Rodríguez-Llorente, C. 2019. Relationship between students' prior academic achievement and homework behavioral engagement: The mediating/moderating role of learning motivation. Frontiers in Psychology *10*: 1047-1070.

Shen, Y. 2023. Academic Performance in Transition to Online Distance Learning: An Assessment from Prior Academic Performance Across Subjects. Journal of Education, Humanities and Social Science *8*: 634-641.

Tanskanen, A. O., Erola, J., & Kallio, J. 2016. Parental resources, sibship size, and educational performance in 20 countries: evidence for the compensation model. Cross-Cultural Research *50*: 452-477.

Usen, O. M. 2016. Teachers' Utilization of School Facilities and Academic Achievement of Student Nurses in Human Biology in Schools of Nursing in Akwa Ibom State, Nigeria. Journal of Education and Practice *7*: 73-80.

Yi, H. S., Na, W., & Lee, C. 2023. Predicting secondary school students' academic achievement from their elementary school performance and learning behaviours: A longitudinal study based on South Korea's national assessment of educational achievement. Asia Pacific Journal of Education *43*: 1031-1048. doi: 10.1080/02188791.2021.1963673