Research Article

The Impact of Teacher and Parental Involvement on Students' Academic Performance: A Statistical Analysis in the Kurdistan Region of Iraq

Shahen Mohammed Faraj [1] iD **, Dana Taha Mohammed Salih** [2,*] iD **, Kosar Othman Azam** [1] iD **, Sarkar Ahmed Saeed** [1] iD **,**
Othman Mohammed Mahmood [3] iD **, Aso Hama Rashid Kareem** [1] iD **,**

[1] Department of International Trade, College of Law and Administration, University of Halabja, Halabja, 46018, Iraq

[2] Computer Science Department, College of Science, University of Halabja, Halabja, 46018, Iraq

[3] Department of Accounting, Halabja Technical Institute, Sulaimani Polytechnic University, Halabja, 46018, Iraq

*Corresponding Author: Dana Taha Mohammed Salih, E-mail: dana.taha@uoh.edu.iq

Article Info	Abstract
	This study examines how collaboration between teachers and parents affects students' academic performance in the Kurdistan Region of Iraq. Data were gathered through questionnaires using simple random sampling. The analysis included descriptive statistics for demographic details and statistical tests like Chi-square, one-way ANOVA, and t-tests to explore relationships between variables. The results showed a strong positive impact of teacher-parent collaboration on students' grades, behavior, motivation, and attitudes toward learning. These findings suggest that fostering partnerships between educators and families can significantly enhance student success, with implications that may apply globally.

1. Introduction

Education is a fundamental pillar for societal development, and student's academic performance is a key indicator of the effectiveness of educational systems. In the Kurdistan Region of Iraq, where education is increasingly recognized as essential for economic growth and social progress, understanding the factors contributing to student success is critical. Among these factors, teacher and parental involvement have emerged as crucial determinants of academic achievement, influencing students' motivation, engagement, and overall performance (Erdem & Kaya, 2020; Hanushek & Woessmann, 2020; Pianta, 2013).

Teacher involvement in students' education encompasses various practices, such as providing tailored

instruction, offering constructive feedback, and fostering a supportive classroom environment. These efforts enhance students' academic skills and boost their confidence and motivation to succeed. The active role of teachers in shaping students' learning experiences has been widely acknowledged as a significant contributor to academic success (Hill & Tyson, 2009; Huot et al., 2024).

Similarly, parental involvement is pivotal in reinforcing the educational foundation teachers establish. Parents who engage in their children's education through activities like monitoring homework, attending school events, and maintaining communication with teachers contribute positively to their children's academic outcomes. The influence of parental involvement is particularly evident in its ability to bridge the gap between home and school, creating a cohesive support system that nurtures students' academic growth (Bunijevac, 2017; Epstein et al., 2018; Hill & Tyson, 2009). The synergy between teacher support and parental involvement creates a robust support system that addresses the diverse needs of students, leading to enhanced academic performance (Wilder, 2023). Work and education mostly determine social standing, security, and income (Robertson, 2014). Although it stands to reason that kids should take the lead in their education, there is no denying the substantial influence that educators and parents have on their children's scholastic performance (Hughes & Kwok, 2007). Relationships between students, teachers, parents and children are especially important during university because this academic period coincides with adolescence, a time when teens may experience emotional difficulties related to identity, autonomy development, and future concerns, which may lead to externalizing behavior (Ansary & Luthar, 2009; Povey et al., 2022).

Working together, parents and teachers can create a supportive learning environment that improves students' academic success. By addressing the many needs of students, this collaboration promotes a holistic approach to education by utilizing the strengths and perspectives of both families and educators (Ghazi et al., 2013). Parents' and teachers' combined efforts can significantly impact a student's academic journey, such as motivation, behavior, and overall accomplishment. Students are more likely to receive better grades and test scores when parents and teachers collaborate. Through this synergy, students are supported and encouraged consistently at home and university, which helps them to achieve their learning and academic objectives (Amponsah et al., 2018; Li et al., 2022).

Students are more likely to remain involved in and dedicated to their education. The network of parents and educators who support one another promotes emotional and cognitive growth. This all-encompassing support facilitates better academic performance and personal development. While a bad relationship with the teacher could hinder a student's academic progress, a good relationship can serve as an extra

resource for the learner. Students' learning and achievement can be impacted by their relationships with teachers in several ways (Bunijevac, 2017).

This paper investigates the significance of teacher-parent involvement and its impact on student's academic performance in universities in the Kurdistan Region of Iraq. Ultimately, teacher-parent involvement is critical to improving students' academic performance. Teachers and parents can work together to provide a consistent and supportive learning environment that meets students' academic and emotional needs. This collaborative effort not only improves academic outcomes but also contributes to students' overall development and well-being, setting them up for future success.

2. Literature review

2.1. Teacher Involvement

Teacher involvement is a crucial determinant of student academic performance (Abdalwahid Ahmed et al., 2022; Pandey & Thapa, 2018; Sharma, 2016). Contemporary research highlights the impact of teacher practices and interactions on student outcomes. Effective teaching practices, including clear feedback and high expectations, are among the most significant factors influencing student achievement (Hattie, 2015; Tomaszewski et al., 2022). The role of teacher-student relationships in fostering academic success is supported by Pianta (2017), who emphasizes that supportive interactions and emotional support from teachers contribute to better student engagement and performance (Pianta, 2017).

Teachers shape students' intellectual and personal development. They participate in various activities and mindsets to help kids succeed, not only teach curriculum. Numerous studies have linked teacher participation to improved academic success (Amponsah et al., 2018; Liu et al., 2020; Wilder, 2023; Xu et al., 2020). Additionally, a meta-analysis by Kunter et al. (2013) finds that teachers' instructional quality and ability to build positive student relationships strongly correlate with academic outcomes. Furthermore, research by Kraft and Papay (2014) shows that teachers' instructional practices and continuous professional development significantly affect student learning gains.

Students can obtain higher results when teachers actively interact with them, give timely feedback, and modify their lesson plans to suit each student's needs. Class participation increases students' enthusiasm for their subjects and love of learning. As mentors and role models, teachers provide crucial social and emotional assistance. This helps students overcome challenges, become more resilient, and learn life skills

(Boonk et al., 2018). Students' academic self-concept is improved when teachers set higher expectations for their performance (De Boer et al., 2018; Kraft & Papay, 2014). Students' perceptions of teachers' social involvement and emotional support, in addition to their educational commitment, boost engagement and academic resilience (Romano et al., 2021).

Teachers' interactions with students can positively or negatively affect students' learning motivations and lifestyles. Teachers who encourage, make students feel safe, and foster empathy is essential for sparking interest and motivation. Passionate teachers connect with their students and add excitement, innovation, challenge, and joy to their work and lessons. Building relationships with students is essential to good teaching, not just giving knowledge (Idris et al., 2020). Great teacher-student interactions boost motivation and learning. When a teacher shows love and creates a joyful learning atmosphere, pupils better respond and learn, allowing them to exhibit their talents (Da Luz, 2015). A supportive and welcoming environment in the classroom is facilitated by teachers who take an active interest in their students' education. Students are encouraged to appreciate one another, work together, and feel a part of the community in this setting (Frenzel et al., 2009).

According to some studies, committed and involved teachers impact beyond the classroom and help students develop into successful, well-rounded people (Anisah, 2023; Ornelas, 2022; Simoni, 2023). They also use techniques and strategies that encourage students and make them feel involved and engaged. Students are aware that having a good rapport with their professors influences their motivation and interest in tertiary education, both of which improve the learning process.

2.2. Parental Involvement

Parental involvement continues to be a key factor influencing student academic success. Research from recent years confirms the positive effects of active parental engagement on student outcomes. According to Hill and Tyson (2009), parental involvement in educational activities, such as homework assistance and school participation, enhances student achievement and behavior. Moreover, a meta-analysis by Utami (2022) demonstrates that various forms of parental involvement, including communication and engagement in school activities, are associated with higher academic performance and improved student attitudes. Furthermore, research by Jeynes (2012) highlights that parental involvement is especially beneficial for students in disadvantaged settings, where additional support can greatly improve educational outcomes.

In addition to acclimating to the social climate of college, most students face greater scholastic challenges. It might be advantageous for young adults to keep a positive relationship with their parents while attending college. When Schwanz et al. (2014) looked at how college students felt about their parents' engagement, they discovered that students sought out different kinds of support from their parents and that these contacts were constructive. Students' academic performance is significantly influenced by their home surroundings and the educational facilities they get (Boonk et al., 2018). According to Chohan and Khan (2010), parents play a crucial role in a child's education, influencing their knowledge, abilities, attitudes, and goals. Students with parents actively involved in their education also tend to do better academically and on tests.

Researchers have focused on examining the correlation between academic achievement and parental involvement for a considerable duration. The findings of prominent meta-analyses in the area consistently indicate a statistically significant relationship between principal investigator participation and academic performance. Positive attitudes toward university and improved behavior are linked to parental participation. When kids witness their parents appreciating education, they are more likely to acquire sound study habits, respect for authority, and a sense of responsibility (Boonk et al., 2018; Erdem & Kaya, 2020; Fatimaningrum, 2021; Jeynes, 2012).

A student's academic success depends on parental support, which boosts learning, motivation, and growth. Active parental participation helps children develop socially and emotionally. According to research, mothers with higher education levels have a stronger influence on their children's academic achievement than fathers. The father's occupation and education level directly impact the family's income, which is strongly correlated with the amenities provided for the kids at home, which is correlated with the kids' academic success. They can offer their kids extra opportunities and facilities, which can positively impact their academic achievement. As they initially introduce kids to the social and intellectual worlds, parents should ultimately take the lead in assisting with their kids' education (Amponsah et al., 2018; Idris et al., 2020).

2.3. Academic Performance

According to Cardino Jr and Cruz (2020), academic results can be improved by adapting teaching strategies to students' unique learning styles. Performance is highly impacted by the degree of academic

preparation one has before starting a new academic phase. A demanding high school curriculum and preparatory programs can give students the abilities and information they need to excel in higher education, as highlighted by (Saeed et al., 2022).

Several studies have demonstrated the multifaceted relationship between children's academic success and parental involvement in education. Parental involvement in education has a favorable effect on classroom instruction and the university climate. Higher academic accomplishment is correlated with active parental involvement in a child's education, such as assisting with homework and attending school events (Fan & Chen, 2001; Utami, 2022).

Educational solutions must offer all-encompassing support, which includes high-quality instruction, a wealth of resources, parental participation, mental health care, and responsible technology use. As students advance through and finish their experience, it is a satisfactory and outstanding level of performance. Studies undervalue this concept, showing repeatedly that most students who drop out of college do so for reasons unrelated to subpar academic performance. Various elements influence students' academic performance, but they differ depending on the academic setting, the students themselves, and the culture to which they belong. Academic success has been found to connect with individual traits such as prior school achievements, academic self-efficacy, or study motivation. Additionally, it has been demonstrated that children's academic performance is positively impacted by their socioeconomic background, particularly when considering the educational attainment of their parents (Amponsah et al., 2018; Ghazi et al., 2013).

3. Methodology

This research employed a variety of statistical methods, including descriptive statistics to determine the percentage of demographic questions, inferential statistics such as the chi-square test to determine the association between variables, independent T-test, one-way ANOVA to determine the relationship between variables, and regression to analyze the impact of the independent variables on the dependent variable. This research includes n=204 respondents, which are undergraduate students of age (18-24 years old), and researchers used a simple random sampling method to collect the data via questionnaire form to test the hypotheses. Data was collected using a questionnaire format by Google form, randomly distributed to students of (Erbil, Halabja, and Sulaimani) in Iraq. The demographic questions included (Gender, Mother's education, Father's education, and Family economic level) and another question about students' opinions

regarding their teachers and parents, including (student's relationship with teachers, their parents' attitude, and their effect on student's academic performance) are pointed in this study research as a first part. The second part includes some variables on a Likert-type scale (Strongly Disagree=1, Disagree=2, Neutral=3, Agree=4 and Strongly Agree=5) that determine the independent variables (Teachers Involvement and Parental Involvement) and dependent variable (Academic Performance) of the study research.

3.1. Reliability Test

A reliability test is used to determine the degree of reliability of the data. Cronbach's alpha (α) value is the most common measure of data reliability, often used when you have several questions in a survey that make up a measure, and you want to know if the measure is reliable. Cronbach's alpha value should be above 0.5; a higher alpha value is better (Blbas & Faraj, 2022). For this purpose, researchers tested the data before starting the overall data collection process, conducted the main study, and distributed 20 forms randomly to conduct a reliability test and confirm the validity of the data (see Table 1).

Table 1. Reliability statistics for all variables

Variables	No. of Items	Alpha (α)
Teacher Involvement	11	0.80
Parental Involvement	10	0.83
Academic Performance	10	0.84
All IDVs	21	0.82
IDV and DVs	31	0.91

Table 1 summarizes the reliability test for our research study; construct reliability was assessed using Cronbach's alpha (α). The results revealed that our two independent variables (teacher involvement and Parental Involvement) scale, with eleven and ten items (α = (0.80 and 0.83)) respectively, were found reliable. Similarly, our dependent variable (Academic Performance) scale, with ten items (α = 0.84), was found reliable. In addition, all independent variables with 21 items (α = 0.82) were also found reliable, and finally, reliability was assessed for our dependent, and all independent variables with 31 items (α = 0.91) were also found reliable.

3.2. Research Model

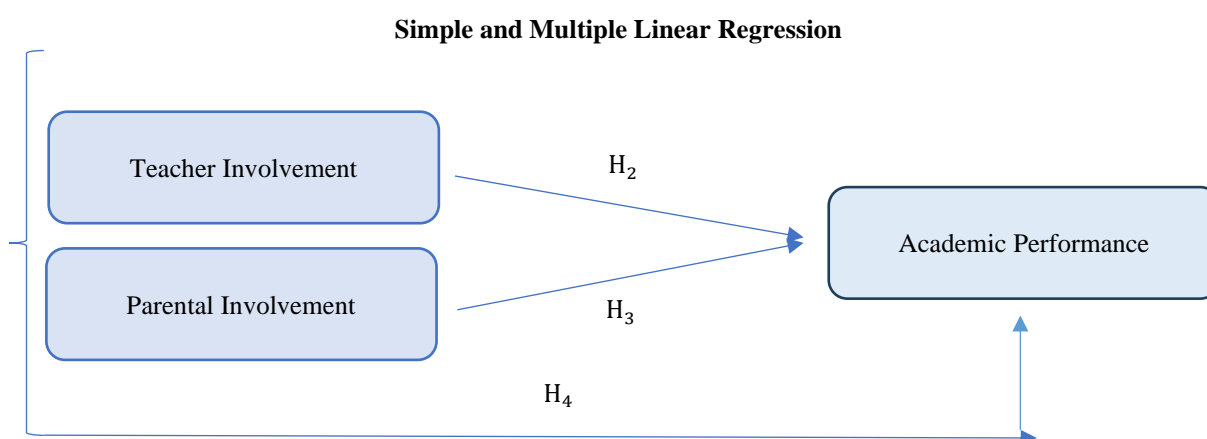The model used in this research is presented below:

Simple and Multiple Linear Regression

Figure 1. Represented research model

3.3. Research Hypotheses

H1: There is a Significant Positive Impact of Teacher Involvement on Academic Performance.

H2: There is a Significant Positive Impact of Parental Involvement on Academic Performance.

H3: There is a Significant Positive Impact of (Teacher Involvement and Parental Involvement on Academic Performance).

3.4. Statistical Instruments

Data was analyzed using SPSS V.26, and researchers considered the descriptive and inferential methodology for this study. Descriptive analysis was used to show the frequency and percentages of our first section of demographic questions. In addition, researchers used the Chi-Square Test of Independence (x^2), independent T-test, one-way ANOVA, and correlation and regression methods were used to show the association and the relationship between variables.

3.4.1. Chi-Square Test of Independence (x^2)

The Chi-square test is a statistical instrument that is used to analyze associations between two categorical or nominal variables. The data is presented in a contingency table where each row represents one type of variable, and each column in the table represents another type of variable (Omer et al., 2023). The critical value for chi-square statistical analysis is generally determined by the alpha significance level (α=0.05) and the degrees of freedom in the chi-square analysis. The chi-square degrees of freedom are (df = (r-1)(c-1)), where (r) is the number of rows and (c) is the number of columns (Faraj & Jafr, 2020; Nicola & Faraj, 2020). For this purpose, researchers examined the association between gender and the (Students'

relationship with teachers, parents' attitudes and their effect on academic performance, feeling motivation regarding parent's attitudes, and thoughts about giving up because of parents' attitudes) (see Table 3).

Here the (null and alternative hypothesis) and the formula of the Chi-Square Test of Independence are expressed (Blbas et al., 2024):

H0: No significant association exists between the categorical variables.

H1: A significant association exists between the categorical variables.

$$x^2 = \sum_{i=1}^{r} \sum_{j=1}^{c} \frac{(O_{ij} - E_{ij})^2}{E_{ij}} \qquad \text{where}$$

$x^2 = \text{Chi} - \text{Square of Independence.}$
$O_{ij} = \text{Observed value of two nominal variables.}$

$E_{ij} = \text{Expected value of two nominal variables.}$

3.4.2. Independent Sample T-test

The independent t-test is a type of inferential statistical test used to detect whether or not there is a statistically significant disparity between the means of two independent groups. In other words, there is either a statistically significant association between variables or not. This test utilizes a continuous variable that follows a normal distribution (referred to as the "Test variable") and a categorical variable with two distinct categories (known as the "Grouping variable") (Blbas & Faraj, 2022; Blbas et al., 2024). In addition, the mean, standard deviation, and sample size of Group 1 and Group 2 will be utilized to calculate the significant level. The independent sample t-test involves the expression of both the null and alternative hypotheses.

H0: There is no statistical difference (relationship) between variables.
H1: There is a statistical difference (relationship) between variables.

In this part, researchers tried to determine whether there is a statistically significant difference (relationship) between the average and (Gender, parents' attitudes and their effect on academic performance, feeling motivation regarding parent's attitudes, and thoughts about giving up because of parent's attitude) (see Table 4).

3.4.3. One-way ANOVA

The one-way ANOVA is a statistical method that is developed based on the independent samples t-test. One-way ANOVA is a statistical method used to compare the means of three or more independent

groups. The term "significant P value" in this context denotes a multiple comparison test used to identify the significant pair(s) (Blbas et al., 2024; Mishra et al., 2019). This test uses a categorical independent variable with at least three categories and a continuous dependent variable. In the one-way ANOVA test, the null and alternative hypotheses are expressed:

H0: There is no statistical relationship between variables.

H1: There is a statistical relationship between variables.

In this study, researchers examined if there is a statistically significant difference (relationship) between the average and (Mother's education, Father's education, Family economic level, and student's relationship with teachers) (see Table 4).

3.4.4. Correlation and Regression Analysis

Correlation analysis is a statistical method for quantifying and characterizing the pattern or relationship between independent variables and a single dependent variable. If two variables move in the same direction, their correlation is positive. Conversely, if they move in opposing directions, the correlation is negative. Correlation coefficients range from -1 (indicating a perfect negative correlation) to +1 (indicating a perfect positive correlation), while a value of 0 indicates no association (Aziz et al., 2022). Simple and multivariate linear regression was employed to determine the predictor (independent) factors, namely Teacher Involvement and Parental Involvement, that may predict the response (dependent) variable, Academic Performance (see Table 5, 6, 7, 8).

4. Result and Discussion

In this section, we present a comprehensive analysis of the data collected from 204 undergraduate students aged 18 to 24, focusing on the impact of teacher and parental involvement on students' academic performance. Utilizing various statistical methods, including descriptive statistics, Chi-square tests, independent t-tests, one-way ANOVA, and regression analysis, the findings aim to elucidate the relationships between demographic variables, students' perceptions of their relationships with teachers and parents, and their academic outcomes. The demographic characteristics of the study participants, including age, gender, education level, and other relevant background information, are presented in Table 2.

Table 2. Descriptive statistics for the demographic questions

| Demographic Questions		Frequency	Percent (%)
Gender	Male	89	43.6%
	Female	115	56.4%
	Total	204	100%
Mother's Education	Illiterate	89	43.6%
	Under diploma	67	32.8%
	Diploma	19	9.3%
	Bachelors	27	13.2%
	Master and above	2	1.0%
	Total	204	100%
Father's education	Illiterate	55	27.0%
	Under diploma	74	36.3%
	Diploma	36	17.6%
	Bachelors	30	14.7%
	Master and above	9	4.4%
	Total	204	100%
Family economic level	Very bad	1	0.5%
	Bad	6	2.9%
	Middle	93	45.6%
	Good	84	41.2%
	Very good	20	9.8%
	Total	204	100%
Student's relationship with teachers	Bad	3	1.5%
	Middle	31	15.2%
	Good	79	38.7%
	Very good	91	44.6%
	Total	204	100%
Parent's attitude and its effect on academic performance	Yes	185	90.7%
	No	19	9.3%
	Total	204	100%
Feeling motivation regarding parent's attitude	Yes	183	89.7%
	No	21	10.3%
	Total	204	100%
Thought about giving up because of parent's attitude	Yes	29	14.2%
	No	175	85.8%
	Total	204	100%
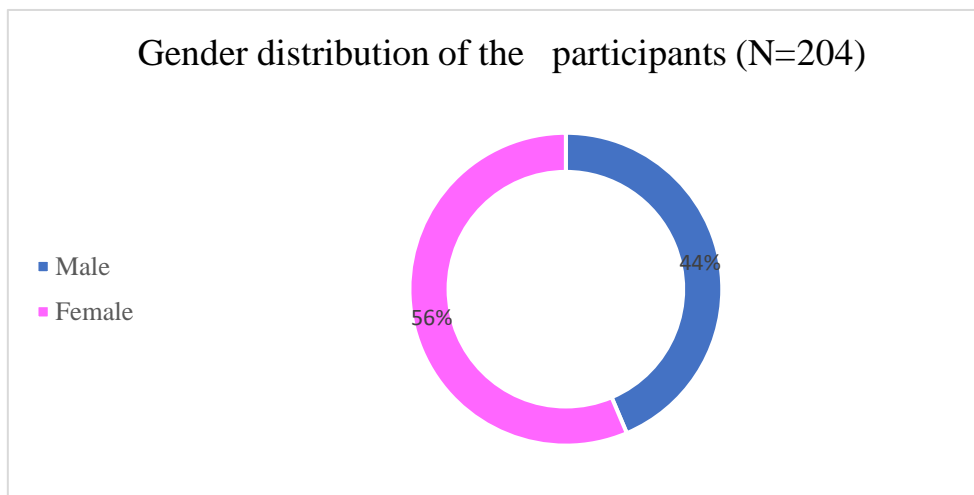
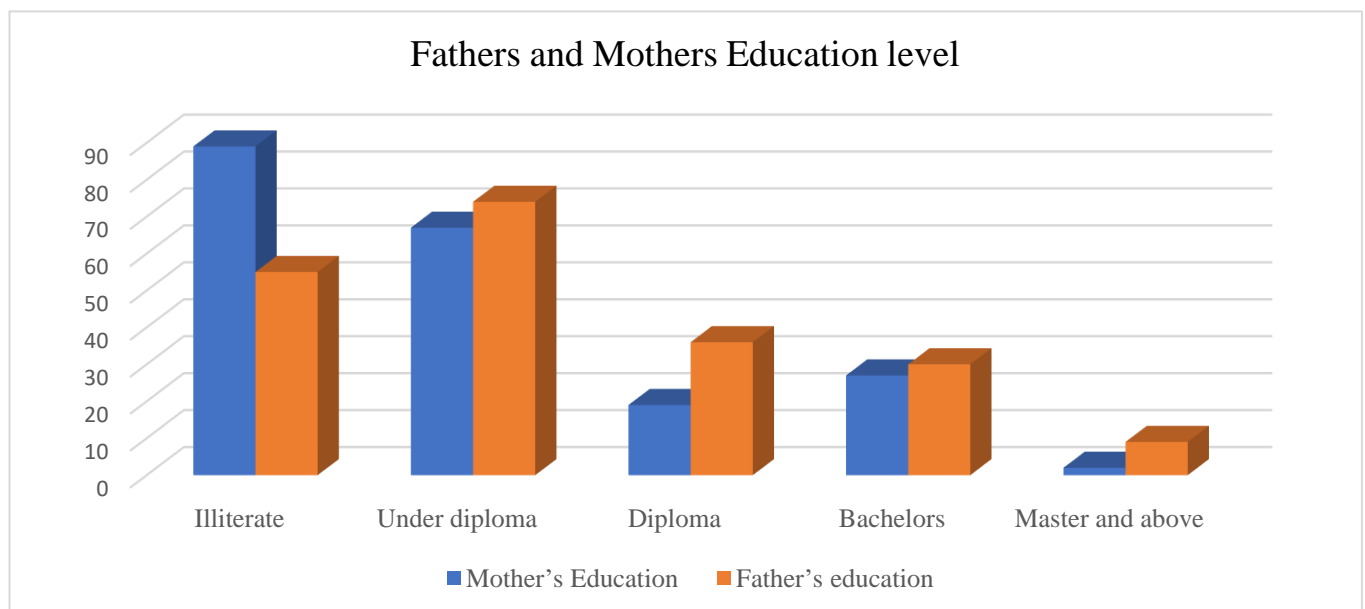**Figure 2.** Gender demographics of the study sample (n=204)

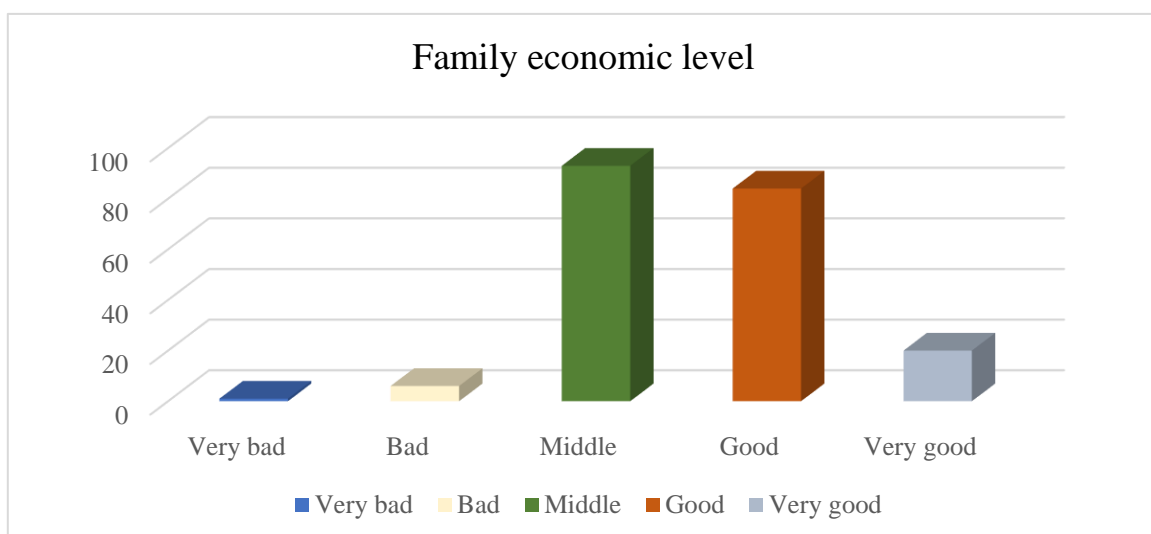**Figure 3.** Distribution of parents' educational attainment (n=204)

Figure 4. Socioeconomic status distribution of sample population (n=204)

From Table 2, we can notice that most of our participants are female, with a rate of 56.4%, which is represented in Figure 2. This is because the number of girls in universities has generally been higher than boys due to the unfavorable employment situation in the Kurdistan Region. From Figure 3, we can notice that most of the student's mothers and fathers have no academic certificate and are illiterate, or their academic degree is under a diploma, with the majority rate of (43.6% and 36.3%) respectively. This is because the parents of this young generation of university students went through very difficult situations, such as Anfal and chemical attacks, and were deprived of education due to displacement. According to Figure 4 and Table 2, in the case of family economic level, most of them pointed out that their economic level was middle with a rate of 45.6%.

On the other hand, the above table shows that most students have a very good relationship with their teachers (44.6%). Regarding the parent's attitude, students pointed out that their parents affected their academic performance and they felt motivated the rate of (90.7% and 89.7%), while a few rated (14.2%) of students, pointed that they thought about giving up because of their parent's attitude. Kurdish families have always supported their children due to their difficult living conditions and have tried to provide them with an easier and more comfortable life and encouraged them to progress even though they have tried to send a mentally healthy generation into society.

Table 3. Impact of gender, teacher relationships, and parental attitudes on academic performance and student motivation

Questions		Gender			Chi-Square Value	-Value
		Male	**Female**	**Total**		
Student's relationship with teachers	Bad	2 (1.0%)	1 (0.5%)	3 (1.5%)		
	Middle	13 (6.4%)	18 (8.8%)	31 (15.2%)		
	Good	37 (18.1%)	42 (20.6%)	79 (38.7%)	1.340	0.720
	Very good	37 (18.1%)	54 (26.5%)	91 (44.6%)		
	Total	89 (43.6%)	115 (56.4%)	204 (100%)		
Parent's attitude and its effect on academic performance	Yes	80 (39.2%)	105 (51.5%)	185 (90.7%)		
	No	9 (4.4%)	10 (4.9%)	19 (9.3%)	0.119	0.730
	Total	89 (43.6%)	115 (56.4%)	204 (100%)		
Felling motivation regarding parent's attitude	Yes	79 (38.7%)	104 (51.0%)	183 (89.7%)		
	No	10 (4.9%)	11 (5.4%)	21 (10.3%)	0.152	0.697
	Total	89 (43.6%)	115 (56.4%)	204 (100%)		
Thought about giving up because of parent's attitude	Yes	17 (8.3%)	12 (5.9%)	29 (14.2%)		
	No	72 (35.3%)	103 (50.5%)	175 (85.8%)	3.090	0.079
	Total	89 (43.6%)	115 (56.4%)	204 (100%)		

Table 3 shows the association between students' gender and relationships with teachers, parents' attitudes and their effect on academic performance, feeling motivation regarding parent's attitudes, and thoughts about giving up because of parents' attitudes. It is clear from Table 2 that there is no relationship between gender and (Student's relationship with teachers, parents' attitude and its effect on academic performance, Feeling motivation regarding parents' attitude, and Thoughts about giving up because of parent's attitude), with a p-value of (0.720, 0.730, 0.697 and 0.079) respectively and because of all those p-values are greater than our choosing significant level ($\alpha = 0.05$), we can accept the null hypotheses H0. The teachers fully support the students and treat them equally; their relationship is very good. On the other hand, parents' treatment of their children is equal, whether they are boys or girls, and gender has not led to more attention being paid to improving their academic performance, and they are trying to motivate them and continue to achieve their goals.

Table 4. Comparison of averages by gender, parental education, economic level, and teacher relationships

Variables		n	Mean	Std. Deviation	T/F-value	p-value
Gender	Male	89	73.55	12.88	-1.086	0.279
	Female	115	80.87	62.50		
Mother's education	Illiterate	89	71.85	11.82	0.683	0.605
	Under diploma	67	83.92	81.55		
	Diploma	19	76.38	8.66		
	Bachelors	27	81.63	12.01		
	Master and above	2	87.00	5.66		
Father's education	Illiterate	55	70.18	13.24	0.553	0.697
	Under diploma	74	82.67	77.61		
	Diploma	36	77.57	10.27		
	Bachelors	30	77.98	10.63		
	Master and above	9	81.79	13.15		
Family economic level	Very bad	1	95.00	-	0.628	0.643
	Bad	6	71.07	12.83		
	Middle	93	72.49	13.01		
	Good	84	83.29	72.67		
	Very good	20	79.35	10.53		
Student's relationship with teachers	Bad	3	58.33	7.77	1.014	0.388
	Middle	31	71.09	10.53		
	Good	79	73.97	8.61		
	Very good	91	83.77	70.43		

As it is clear from Table 4, an independent sample t-test was used to employ the relationship between variables and as we see, there is no statistical relationship between Average and Gender with a p-value of

(0.279) which is greater than our significance interval of $\alpha = 0.05$ with the mean and standard deviation of (73.55±12.88) for male, and (80.87 ± 62.50) for female. For this purpose, we can accept H0. This result shows that the score does not vary by gender, and gender does not affect the score in our study research; this means both males and females tried to achieve their goals and gain a good score.

However, Table 4 investigated the one-way ANOVA test to check whether there is a relationship between a continuous variable and variables with three or more categories. As we see, there is no statistical relationship between the average and (Mother's education, Father's education, Family economic level, and student's relationship with teachers) with p-values of (0.605, 0.697, 0.643, and 0.388) which are greater than our significance interval of $\alpha = 0.05$, so we can accept H0. This reflects the fact that due to the difficult circumstances of the early years that parents have gone through and have not been able to continue their education in the Kurdistan Region, which has affected their livelihoods to some extent, they are now fully supportive of their children and have tried not to let their low level of education and low income affect their children's development. On the other hand, due to the proper upbringing of their families, many students have a very good relationship with their teachers, which has not affected their grades.

4.1. Pearson's Correlation and Regression Analysis

In this part of the research, researchers tried to demonstrate the regression analysis to show the relationship between variables and to analyze the hypothesis. They employed simple and multiple linear regression analysis at 95% confidence intervals.

Table 5. Correlation matrix between independent variables and dependent variables

	Teacher involvement	Parental involvement
Student's academic performance	0.740**	0.624**

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

Table 5 showed a strong positive significant relationship between the independent variables, the teacher's and parents' involvement, and the dependent variable (Student's academic performance) (0.740 and 624), respectively.

Table 6. Simple Linear Regression Analysis between the independent variable (Teacher involvement) and Dependent Variable (Student's academic performance)

	Coefficients			Model Summary		ANOVA	
	B	t	P-Value				
(Constant)	0.349	1.464	0.145	Correlation	R Square	F	P-Value
Teacher involvement	0.891	15.655	0.000	0.740	0.548	245.080	0.000

From Table 6, simple linear regression was used to test whether student's academic performance significantly predicted teacher involvement. From Pearson's correlation analysis, we can notice a strong positive correlation between the independent variable (teacher involvement) and the dependent variable (student's academic performance). The above table shows an ANOVA table for checking the goodness of fit for the predictor variable (teacher involvement) on the response variable (student's academic performance), so the model is appropriate based on (F = 245.080, P-Value < 0.001), Here we can accept the hypothesis (H2).

Table 6 also contains the result of the constant, Slope, t-value, and coefficient of determination (R^2). The regression Coefficient (B) for teacher involvement is 0.891, which means that increasing one unit for teacher involvement will increase the student's academic performance by 0.891. Determination of Coefficient ($R^2 = 0.548$), suggesting that teacher involvement predicts 54.8% of the variation of student's academic performance, and the remaining variation is regarding other factors that affect student's academic performance. That is, teacher support plays a significant role in improving students' knowledge and their academic performance.

Table 7. Simple Linear Regression Analysis between the independent variable (Parental involvement) and Dependent Variable (Student's academic performance)

	Coefficients			Model Summary		ANOVA	
	B	**t**	**P-Value**				
(Constant)	0.789	2.719	0.007	Correlation	R Square	F	P-Value
Parent's involvements	0.769	11.348	0.000	0.624	0.389	128.782	0.000

Table 7 shows that from Pearson's correlation analysis, we can see a strong positive correlation between the independent variable (Parental involvement) and the dependent variable (Student's academic performance). In addition, Table 5 shows an ANOVA table for checking the goodness of fit for the predictor variable (Parental involvement) on the response variable (Student's academic performance), so the model is appropriate based on (F = 128.782, P-Value < 0.001), for this purpose we accept the hypothesis (H3).

The above table also represents the result of the constant, Slope, t-value, and coefficient of determination (R^2). The regression Coefficient (B) for parental involvement is 0.769, which means that increasing one unit for parental involvement will increase the student's academic performance by 0.769. Determination of Coefficient ($R^2 = 0.389$), suggesting that 38.9% of the variation in students' academic performance is

predicted by parental involvement, and the remaining variation is regarding other factors that affect students' academic performance. It certainly reflects that supporting parents plays a significant role in improving students' academic performance.

Table 8. Multiple Linear Regression Analysis between the independent variables (Teacher involvement and Parental involvement) and Dependent Variable (Student's academic performance)

	Coefficients			Model Summary		ANOVA	
	B	**t**	**P-Value**				
(Constant)	-0.283	-1.097	0.274	Correlation	R Square	F	P-Value
Teacher involvement	0.688	10.260	0.000	0.774	0.599	150.266	0.000
Parental involvements	0.374	5.060	0.000				

Table 8 shows a strong positive correlation between the independent variables (Teacher and Parental involvement) and the dependent variable (Student's academic performance) from Pearson's correlation analysis. In addition, Table 8 shows an ANOVA table for checking the goodness of fit for the predictor variables (Teacher involvement and Parental involvement) on the response variable (Student's academic performance), so the model is appropriate based on (F= 150.266, P-Value < 0.001), so we easily can accept the hypothesis (H4).

The above table also represents the result of the constant, Slope, t-value, and coefficient of determination (R^2). The regression Coefficient (B) for teacher involvement is 0.688, and for parental involvement is 0.374, which means that increasing one unit for teacher involvement will increase the student's academic performance by 0.688, and increasing one unit for parental involvement will increase the student's academic performance. Determination of Coefficient ($R^2 = 0.599$), suggesting that 59.9% of the variation in students' academic performance is predicted by both (teacher involvement and parental involvement) and the remaining variation is regarding other factors that affect students' academic performance. This means that supporting teachers and parents is equally important in students' academic lives and significantly improves students' academic performance.

5. Conclusion

This study emphasizes the crucial role of teacher and parental involvement in enhancing students' academic performance. It identifies a strong positive correlation between active engagement from teachers and parents and improved student outcomes. The findings highlight that effective collaboration between

educators and families fosters motivation, improves behavior, and cultivates a positive attitude toward learning. Research in the Kurdistan Region of Iraq demonstrates that students who perceive strong support from teachers and parents are more likely to succeed academically.

The study also underscores the importance of tailored strategies to address individual student needs. Collaborative efforts between teachers and parents create a holistic environment supporting academic achievement and personal development. However, the study's reliance on self-reported data and its specific demographic context may limit generalizability. Future research should explore these dynamics further through diverse methodologies. Practical recommendations include workshops, mentorship programs, and digital tools to strengthen parent-teacher partnerships.

Declaration of Competing Interest: The authors declare they have no known competing interests.

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