International Journal of Innovative Research and Scientific Studies, 8(2) 2025, pages: 506-516

IJIRSS
International Journal of Innovative Research & Scientific Studies

ISSN: 2617-6548

URL: www.ijirss.com

An investigation of variables affecting parental involvement in education: The case of Kosovo

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Abstract

This study examines the factors influencing parental involvement in children's education in Kosovo. The research evaluates the impact of variables such as ethnicity, gender, parents' education level, number of children, and the child's education level on parental involvement. Based on Epstein's parental involvement theory, the role of these factors in the educational process is analyzed. The study includes 1,469 Turkish and Albanian parents with children at the primary and secondary school levels in Kosovo. Data were collected using a 48-item scale based on the Epstein model, assessing parental involvement across six dimensions: parenting, communication, home learning, volunteering, decision-making, and community collaboration. Multivariate analysis of variance (MANOVA) was used for data analysis. The findings indicate that parental involvement is significantly influenced by demographic and cultural factors. Turkish mothers were found to play a more prominent role in the child-rearing process compared to Albanian mothers. Additionally, due to Kosovo's social structure and traditional family roles, gender-based differences in parental involvement were observed. Accordingly, it is recommended that educational policies be developed to encourage more active participation of fathers and parents with lower education levels in the process.

Keywords: Education level, Ethnicity, Parental involvement, Teachers.

DOI: 10.53894/ijirss.v8i2.5202
Funding: This study received no specific financial support.
History: Received: 23 January 2025 / **Revised:** 24 February 2025 / **Accepted**: 3 March 2025 / **Published:** 7 March 2025

Competing Interests: The authors declare that they have no competing interests.
Authors' Contributions: All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.
Transparency: The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.
Publisher: Innovative Research Publishing

1. Introduction

Kosovo is one of the most unique regions in the Balkans, with its multicultural structure. In this land, where Turks, Albanians, and other ethnic groups live together, education is not only an individual process but also an important tool for the transmission of societal values [1, 2]. The participation of Turkish and Albanian families in the educational process in Kosovo is remarkable in terms of reflecting cultural diversity in education. It is known that family involvement in education positively affects not only children's academic success but also their social and emotional development [3, 4].

In this context, the framework provided by Epstein's [3] Theory forms an important basis for understanding the roles of parents and school-family cooperation in Kosovo's multicultural structure. The theory comprehensively analyzes the effects of parents' attitudes, communication styles, and support mechanisms in their relationships with their children on children's developmental processes [3, 5]. In the case of Kosovo, examining the differences in the participation of Turkish and Albanian parents in their children's educational processes from both ethnic and gender perspectives will help us better understand the region's educational structure.

Although the education system in Kosovo has witnessed various initiatives to develop school-family cooperation, significant differences are observed in the levels and forms of family participation. The cultural, economic, and social factors affecting the participation of Turkish and Albanian parents in their children's education form one of the focal points of this research. This situation necessitates a deeper examination of the scope of the support provided by parents to their children and its impact on children's developmental processes [4, 6].

In this study, based on the six key dimensions (parenting, communication, home learning, volunteering, decision-making, and community collaboration) proposed by Epstein's Theory, the levels of participation of Turkish and Albanian parents in their children's education in Kosovo will be analyzed. The aim of the study is to determine whether parental involvement in the educational process varies according to ethnic origin and gender. Additionally, the study will thoroughly examine how school-family cooperation is shaped within Kosovo's multicultural structure and the contributions of this process to children's education.

2. Literature Review

Parental involvement in education plays a crucial role in children's academic success and overall development, making it a widely studied topic. Epstein's [3] "Six Types of Parental Involvement" framework has become one of the most effective models for understanding how parents can engage in their children's education. Epstein defines six dimensions of parental involvement: parenting, communication, volunteering, learning at home, decision-making, and community collaboration. These dimensions have been used in numerous studies to assess the impact of parental involvement on children's academic achievements and overall well-being.

Many studies have shown that parental involvement positively influences children's academic performance. Hornby [4] emphasizes that parental involvement not only strengthens children's academic success but also enhances their social and emotional skills. This involvement becomes even more critical in contexts where cultural diversity and differences are present, as families with different backgrounds may face distinct challenges and opportunities in supporting their children's education. Research conducted in multicultural environments like Kosovo has revealed that parental involvement can vary significantly depending on ethnic, cultural, and socio-economic factors [1, 2]. Kosovo, with its multicultural society consisting of Albanians, Turks, and other ethnic groups, presents a complex dynamic in understanding parental involvement. Studies have shown that ethnic and cultural differences influence how parents engage with the education system [6]. For example, the educational values, practices, and expectations of Turkish and Albanian families may shape their involvement in their children's education. Additionally, gender plays an important role in this context, as research has demonstrated that mothers and fathers may have different levels of involvement in education, influenced by cultural norms and gender roles [3, 5].

Socio-economic factors, particularly parents' education levels and the number of children in the family have also been extensively discussed in the literature as key determinants of parental involvement. Research has shown that parents with higher levels of education tend to be more involved in their children's education and provide better support for their academic and social development [4]. Likewise, the number of children in a family can affect parental involvement, as parents with multiple children may face challenges in participating in their children's education due to time and resource constraints [6]. In this context, the relationship between socio-economic status and parental involvement is also a significant area of research.

The role of school-family collaboration has been emphasized in the literature as a crucial factor in improving educational outcomes. Studies have shown that effective communication and collaboration between schools and families create a more supportive learning environment that enhances students' academic performance and personal development [1, 2]. Although various initiatives have been undertaken in Kosovo to improve school-family collaboration, significant differences in participation levels between ethnic groups remain a major challenge.

In conclusion, parental involvement is crucial, especially in multicultural contexts like Kosovo. Understanding the ethnic, gender, and socio-economic factors that influence parental involvement plays a key role in strengthening school-family collaboration and ensuring better educational outcomes for all students. This study aims to explore how these factors impact parental involvement in Kosovo's education system, particularly focusing on Turkish and Albanian families.

3. Methodology

3.1. Sample and Data Collection

This study was conducted with the parents of students attending primary education (elementary and middle school) in Kosovo, where at least two ethnic groups (Turkish and Albanian) predominantly reside. The study was carried out at the end of the 2024 academic year, during which schools were visited, and the registration addresses of parents of students attending these schools were collected. The schools visited offered education in two languages (Turkish and Albanian). After collecting the registrations of the parents from the school, home visits were made to explain the purpose of the study, and parents were asked if they would like to participate. Data were collected from the parents who volunteered to take part in the study.

A total of 678 (46.2%) Turkish parents and 791 (53.8%) Albanian parents participated in the study. Of these, 1,132 (77.1%) were female and 337 (22.9%) were male. The ages of the parents ranged from 20 to 60 years, with an average age

of 34. The number of children the parents had varied from 1 to 8, with 3 parents (0.2%) having 8 children, while 687 (46.8%) parents reported having 2 children, which was the most common number.

3.2. Data Collection Tool

The data collection tool used to determine the involvement of parents in the educational process is a scale developed by Erkan and Saban [7] and adapted to the Kosovo culture by Morina, et al. [8]. The scale was adapted into both Turkish and Albanian languages by Morina, et al. [8] for use in Kosovo. The original scale and its adaptation to the Kosovo culture consist of 48 items and a 6-factor structure. The distribution of factors and items is as follows: 11 items for Communication, 10 items for Parenthood, 9 items for Learning at Home, 9 items for Decision Making, 5 items for Volunteering, and 4 items for Collaborating with the Community. It was determined that this structure remains the same for both Turkish and Albanian parents in the Kosovo culture. The scale is rated on a 4-point Likert scale: 4 = Always, 3 = Mostly, 2 = Rarely, and 1 = Never.

In the reliability analysis of the scale, the overall Cronbach's Alpha coefficient was 0.90, with the lowest being 0.65 for the Parenthood dimension and the highest being 0.82 for the Communication dimension. The Cronbach's Alpha values for the other dimensions fell within this range. The research data were collected by the researchers through face-to-face administration of the scale during home visits to the parents.

3.3. Analyzing of Data

To determine whether the involvement of parents in their children's education differs based on ethnicity (Turkish and Albanian) and gender, a multivariate analysis of variance (MANOVA) was conducted after analyzing the assumptions of MANOVA. Initially, correlations among the dependent variables were examined for multicollinearity. Positive moderate-level correlations were found between the following variables: Volunteering and Learning at Home ($r = 0.57$, $p < 0.05$), Volunteering and Decision Making ($r = 0.58$, $p < 0.05$), Volunteering and Parenthood ($r = 0.52$, $p < 0.05$), Volunteering and Communication ($r = 0.50$, $p < 0.05$), and Volunteering and Collaborating with the Community ($r = 0.37$, $p < 0.05$). A positive moderate-level correlation was also observed between Learning at Home and Decision Making ($r = 0.64$, $p < 0.05$), Learning at Home and Parenthood ($r = 0.59$, $p < 0.05$), Learning at Home and Communication ($r = 0.57$, $p < 0.05$), and Learning at Home and Collaborating with the Community ($r = 0.43$, $p < 0.05$). Positive moderate-level correlations were found between Decision Making and Parenthood ($r = 0.63$, $p < 0.05$), Decision Making and Communication ($r = 0.63$, $p < 0.05$), and Decision Making and Collaborating with the Community ($r = 0.48$, $p < 0.05$). A positive moderate-level correlation was also found between Parenthood and Communication ($r = 0.67$, $p < 0.05$), and between Parenthood and Collaborating with the Community ($r = 0.48$, $p < 0.05$). A positive moderate-level correlation ($r = 0.57$, $p < 0.05$) was observed between Communication and Collaborating with the Community.

Additionally, the Bartlett's Test of Sphericity for the correlation among the dependent variables was significant (Approx. Chi-Square = 5256.524, df = 20, p = .000). A scatterplot matrix was drawn to examine linearity for each independent variable (gender, ethnicity, etc.). Univariate and multivariate normality were checked using Q-Q plots and Mahalanobis Distance. Skewness and kurtosis values for each independent variable were also examined. The skewness and kurtosis values were found to be well below ±1 for each independent variable. To detect outliers, a box plot was examined. As a result, only two data points were identified as outliers, and their Mahalanobis distance was found to be below 0.001. These data points were removed from the dataset. After this, the data were rechecked for MANOVA assumptions. The analysis confirmed that there was no multicollinearity problem, linearity among variables, normal distribution of data, and no outliers.

Given that the sample size was sufficiently large (n = 1469), it was concluded that the violation of multivariate normality had a minimal effect on Type I error, and the F-test was robust to deviations from normality, assuming multivariate normality. To check for covariance equality, Box's M test results were reanalyzed. Wilks' Lambda was applied under equality, and Pillai's Trace was applied under inequality. Levene's Test was used to analyze the homogeneity of variances for each variable. Furthermore, when differences were found between independent variables, Tukey's test was applied as a post-hoc analysis to identify the source of the differences. When the interaction between independent variables was significant (e.g., gender * ethnicity), a simple effect analysis was performed [9]. Discriminant analysis was applied for each factor. To determine which dependent variable contributed to group differences, structure coefficients and standardized function coefficients were examined [10]. The research data were analyzed using IBM SPSS 24.0 and Jamovi 2.3.8 software.

Table 1.
Mean and standard deviation by parents' gender, ethnicity, education, and number of children.

		N	Volunteering M(SD)	Learning at Home M(SD)	Decision Making M(SD)	Parenting M(SD)	Contact Us M (SD)	Social Cooperation M(SD)
Gender	Female	1132	3.33(0.41)	3.20(.41)	3.29(0.38)	3.59(0.29)	3.31(.44)	2.94(0.65)
	Male	337	2.77(.40)	2.71(.45)	3.45(0.43)	3.11(0.30)	3.13(.43)	2.02(0.59)
Ethnicity	Turkish	678	3.40(0.44)	3.23(0.47)	3.47(0.36)	3.63(0.31)	3.46(.41)	3.10(0.66)
	Albanian	791	3.33(0.43)	2.96(0.42)	3.42(0.42)	3.35(0.33)	3.12(.41)	2.41(0.66)
Parent Education Level	a) Primary education	213	3.06(0.47)	2.89(0.49)	3.18(0.39)	3.34(0.37)	3.16(.46)	2.47(0.71)
	b) Secondary Education	630	3.11(0.45)	3.03(0.44)	3.26(0.38)	3.44(0.35)	3.21(.45)	2.60(0.70)
	c) Associate's Degree	183	3.18(0.45)	3.03(0.47)	3.33(0.37)	3.46(0.32)	3.26(.43)	2.73(0.73)
	d) Bachelor's Degree	309	3.39(0.44)	3.28(0.42)	3.48(0.38)	3.61(0.32)	3.42(.40)	3.04(0.72)
	e) Postgraduate	134	3.41(0.45)	3.32(0.43)	3.53(0.37)	3.62(0.33)	3.43(.41)	3.06(0.71)
Number of Children	a) 1	86	3.53(0.47)	3.40(0.44)	3.49(0.39)	3.72(0.31)	3.58(.40)	3.23 (0.74)
	b) 2	687	3.26(0.44)	3.15(0.45)	3.38(0.36)	3.52(0.33)	3.33(.39)	2.82(0.70)
	c) 3	535	3.13(0.46)	3.03(0.46)	3.30(0.40)	3.44(0.35)	3.25(.41)	2.65(0.73)
	d) 4 and above	161	2.97(0.47)	2.85(0.45)	3.09(0.42)	3.30(0.36)	2.94(.43)	2.35(0.72)
Child's Education Level	1. Level (Primary School)	1126	3.29(0.45)	3.19(0.43)	3.42(0.36)	3.54(0.34)	3.34(0.43)	2.87(0.71)
	2. Level (Secondary School)	343	2.90(0.41)	2.76(0.44)	3.03(0.36)	3.29(0.33)	3.05(0.42)	2.27(0.66)
Overall		1469	3.20(0.47)	3.09(0.47)	3.33(0.40)	3.48(0.35)	3.27(0.45)	2.73(0.74)

Table 2.
Discriminant analysis for females and males according to ethnicity.

	Function at Group Centroids			CC	SCDF(SM)					
	f	Turkish	Albanian		Volunteering	Learning at Home	Decision Making	Parenting	Communication	Community Collaboration
Female	1	0.744	-0.804	0.612	0.289(0.676)	0.139(0.597)	0.322(0.563)	0.185(0.563)	0.225(0.543)	0.516(0.501)
Male	1	-1.315	0.479	0.623	-0.213(0.670)	0.538(0.362)	0.853 (-0.262)	-0.220(-0.219)	-0.579(-0.206)	-0.117(0.042)

Note: *f*=Function CC= Canonical Correlation; SCDF= Standardized Canonical Discriminant Function Coefficients, SM=Structure Matrix.

4. Findings/Results

4.1. Descriptive Analysis

The results of the descriptive analysis regarding parents' levels of school involvement are presented in Table 1.

According to the analysis results, the highest mean (M=3.48, Sd=.35) was observed in the Parenthood dimension. The lowest mean (M=2.73, Sd=.74) was observed in the Community Collaboration dimension. The Community Collaboration dimension has the lowest mean across all independent variables. Regarding gender, the highest mean was observed in the Parenthood dimension for females (M=3.59, SD=.29) and in the Decision-Making dimension for males (M=3.48, SD=.41). The lowest mean for both female (M=2.94, SD=.65) and male (M=2.02, SD=.59) parents was observed in the Community Collaboration dimension. In terms of ethnicity, Turkish parents (M=3.63, SD=.31) and Albanian parents (M=3.35, SD=.33) had the highest mean in the Parenthood dimension. Regarding education level, the highest mean in the Parenthood dimension was observed across all educational backgrounds: Primary education (M=3.34, SD=.37), Secondary education (M=3.44, SD=.35), Associate degree (M=3.46, SD=.32), Bachelor's degree (M=3.61, SD=.35), and Graduate Education (M=3.62, SD=.35). In terms of the number of children parents have, the highest mean was also in the Parenthood dimension. The lowest mean across all independent variables was found in the Community Collaboration dimension.

4.2. Analysis with Respect to the Mutual Effect of Both Ethnicity and Gender

A Multivariate Analysis of Variance (MANOVA) was conducted to determine whether the level of parental involvement in their children's education differs based on ethnicity and gender (Ethnicity x Gender). According to the Box M results (Box M = 66.190, F = 1.037, p > .05), it was observed that the covariance matrices between groups were equal. Levene's Test was performed to check the homogeneity of variances for the dependent variables. The homogeneity of variances was found for each subscale: Volunteering (F = .336, p > .05), Learning at Home (F = 2.009, p > .05), Decision Making (F = 1.362, p > .05), Parenthood (F = 2.468, p > .05), Communication (F = 2.311, p > .05), and Community Collaboration (F = 1.002, p > .05). Due to the equality of covariance matrices and the homogeneity of variances, Wilks' Lambda (λ) was applied. Using the Wilks criterion, it was found that the dependent variables were affected by ethnicity (Wilks λ = .831, F(6, 1460.0) = 49.386, p = .000, Η^2 = .169), gender (Wilks λ = .532, F(6, 1464.0) = 214.012, p = .000, Η^2 = .468), and the Ethnicity x Gender interaction (Wilks λ = .822, F(6, 1464.0) = 52.762, p = .000, Η^2 = .178). Since the Partial Eta Square values were sufficiently large (Denis, et al. [11]), the MANOVA analysis continued.

In the MANOVA analysis, no differences were observed in the Learning at Home subscale based on ethnicity. In the Decision-Making dimension, the mean score of Turkish parents was lower than that of Albanian parents. However, Turkish parents had higher mean scores in the Volunteering, Parenthood, Communication, and Community Collaboration dimensions. Regarding gender, in the Decision-Making dimension, males had a higher mean, while females had higher mean scores in all other dimensions.

A significant interaction between ethnicity and gender was observed across all dimensions. We conducted a one-way discriminant analysis for males and a separate one-way discriminant analysis for females, with ethnicity as the single factor. Descriptive Discriminant Analysis (DDA) was applied to identify group differences. The DDA results for both males and females according to ethnicity are shown in Table 2.

A Descriptive Discriminant Analysis (DDA) was conducted to determine group differences. The DDA results for both females and males are shown in Table X. For females, function 1 was found to be significant (λ=.625, p<.05), and for males, function 1 was also significant (λ=.612, p<.05). When the canonical correlation was converted into percentages, it was found to be 37% for females and 39% for males.

Upon examining the standardized coefficients, it was determined that for females, the most important variable was Community Collaboration, followed by Decision Making. For males, the most important variable was Decision Making, followed by Learning at Home. This shows that these factors contributed the most to ethnic differentiation in the ratings.

When analyzing the group centroids, it was observed that Turkish female parents had the highest mean, followed by Albanian female parents. Turkish male parents, on the other hand, had the lowest mean.

Analysis Results Based on Parents' Gender and the Educational Level of the Student

A Multivariate Analysis of Variance (MANOVA) was conducted to determine whether the level of parental involvement in children's education varies based on the interaction between the parent's gender and the educational level of the student (Parent's Gender x Student's Educational Level).

According to the Box M results (Box M = 82.315, F = 1.290, p > .05), the covariance matrices between the groups were found to be equal. Levene's Test was conducted to check the homogeneity of variances for the dependent variables. The results showed that variances were homogeneous for all subscales: Volunteering (F = .628, p > .05), Learning at Home (F = 2.371, p > .05), Decision Making (F = 1.352, p > .05), Parenthood (F = .891, p > .05), Communication (F = .432, p > .05), and Community Collaboration (F = 2.273, p > .05).

Due to the equality of covariance matrices and the homogeneity of variances, Wilks' Lambda (λ) was applied. The Wilks' criterion revealed that the dependent variables were significantly affected by gender (Wilks λ= .578, F(6, 1460.0)=177.740, p=.000, Η^2=.422), the educational level of the student (Wilks λ=.771, F(6, 1464.0) = 72.196, p=.000, Η^2=.229), and the interaction between Parent's Gender x Child's Educational Level (Wilks λ= .946, F(6, 1464.0)=13.949, p=.000, Η^2=.056). Since the Partial Eta Squared values were sufficiently large (Denis, et al. [11]), the MANOVA analysis continued.

The results of the MANOVA showed significant differences across all subscales based on gender. For the Decision-Making subscale, the average score of male parents was higher than that of female parents, while for all other subscales, female parents had higher average scores. The effect size for the Communication subscale (Η^2=.004) was low, but the effect size for all other subscales was high.

Regarding the educational level of the students, significant differences were observed across all subscales. Parents of children in Primary Education (ISCDE 1: Grades 1-5) had higher average scores on all subscales compared to parents of children in Secondary Education (ISCDE 2: Grades 6-8). The effect sizes for Parenthood (Ƞ^2=.027) and Communication (Ƞ^2=.033) were low, but medium effect sizes were observed for the other subscales.

The interaction between parents' gender and children's educational level showed significant differences across all subscales, except for decision making.

To further investigate group differences, a one-way discriminant analysis was run separately for Primary Education (ISCDE 1) and Secondary Education (ISCDE 2), using parent's gender as a single factor. Descriptive Discriminant Analysis (DDA) was applied to identify group differences. The DDA results for both ISCDE 1 (Primary Education) and ISCDE 2 (Secondary Education) according to parent's gender are shown in Table 4.

Table 3.
Discriminant Analysis for ISCDE 1 and ISCDE 2 According to Gender.

	Function at Group Centroids				**SCDF(SM)**				
	f	**Female**	**Male**	**CC**	**Volunteering**	**Learning at home**	**Parenting**	**Communication**	**Community Collaboration**
SCDE 1	1	0.464	-0.804	0.694	0.335(0.741)	0.201 (0.688)	0.549(0.604)	-0.261(0.471)	0.509(0.208)
SCDE 2	1	-2.004	0.479	0.592	0.198 (0.726)	0.420(0.503)	0.661(0.487)	-0.560(0.457)	0.333(-0.113)

Note: f=Function CC= Canonical Correlation; SCDF= Standardized Canonical Discriminant Function Coefficients, SM=Structure Matrix.

Discriminant Analysis (DDA) was performed to determine group differences. The DDA results for both ISCDE 1 (Primary Education: Primary School) and ISCDE 2 (Secondary Education) are presented in Table 3. The DDA for ISCDE 1 (Primary School) showed that Function 1 ($\lambda = .518$, $p < .05$) was significant, and for ISCDE 2 (Secondary Education), Function 1 ($\lambda = .649$, $p < .05$) was also significant. When converted to canonical correlation percentages, ISCDE 1 was 48%, and ISCDE 2 was 35%.

When examining the standardized coefficients, it was found that for parents with children in primary school (ISCDE 1), the most important variables were, in order: Parenthood, Community Collaboration, and Volunteering. For parents with children in secondary education (ISCDE 2), the most important variable was Parenthood, followed by Communication and Learning at Home. These findings show that the ratings for these factors made the greatest contribution to the gender-based differences. When analyzing Group Centroids, it was observed that female parents with children in primary school (ISCDE 1) had the highest average, while male parents with children in secondary education (ISCDE 2) had the lowest average.

4.3. Analysis with Respect to the Level of Parent Education

MANOVA was conducted to determine whether parent involvement in education changes with respect to education level. Firstly, covariance equality was checked (Box's M = 94.878, $p > .05$), and the covariances were found to be equal. Levene's Test was applied for group variances. Homogeneity of variances for the dependent variables was checked using Levene's Test. The results showed homogeneity for all subscales: Volunteering ($F = .785$, $p > .05$), Home Learning ($F = 1.581$, $p > .05$), Decision Making ($F = .057$, $p > .05$), Parenting ($F = 2.126$, $p > .05$), Communication ($F = 1.749$, $p > .05$), and Social Collaboration ($F = .358$, $p > .05$). Since the covariance matrices between groups were not equal, Wilks' Lambda was applied. Using Wilks' Lambda, it was found that the dependent variables were significantly affected by parents' education level (Wilks $\lambda = .808$, $F(24, 5091.053) = 13.374$, $p = .000$, Ƞ^2 = .06). To identify where the differences occurred, a follow-up test using the Univariate F-test, Post Hoc Tukey test, and Discriminant Analysis was conducted. Additionally, for Type I error inflation, Bonferroni correction with a critical value of 0.008 (.05/6) was applied. The results of the Univariate test and Discriminant Analysis are shown in Table 4.

The analysis results indicated that parents' education level had a significant effect on all dimensions: Volunteering ($F(4, 1464) = 31.604$, $p = 0.001$), Home Learning ($F(4, 1464) = 37.187$, $p = 0.001$), Decision Making ($F(4, 1464) = 32.979$, $p = 0.001$), Parenting ($F(4, 1464) = 25.220$, $p = 0.001$), Communication ($F(4, 1468) = 19.427$, $p = 0.001$), and Social Collaboration ($F(4, 1464) = 33.902$, $p = 0.001$).

Table 4.
Univariate F-test and discriminant analysis results.

DVs	**MS**	**F**	**Sig.**	**η^2**	**Tukey**	**SCDF1(SM1)**	**SCDF2(SM2)**	**SCDF3(SM3)**	**SCDF4(SM4)**	**CC**
Volunteering	6.546	31.604	0.000*	0.08	e,d>c,b,a	0.166(0.667)	0.779(-0.457)	-0.647(-.552)	0.210(-0.012)	0.426
Learning at Home	7.538	37.187	0.000*	0.09	e,d>c,b>a	0.290(0.644)	-0.846(0.203)	-0.604(0.187)	-0.384(0.429)	0.102
Decision Making	4.894	32.979	0.000*	0.09	e,d>c,b,a	0.579(0.636)	0.018(0.060)	0.521(0.255)	-0.602(-0.574)	0.04
Parenting	3.015	25.22	0.000*	0.07	e,d>c,b,a	0.110(0.619)	-0.702(0.286)	0.519(-0.507)	0.730(0.373)	0.024
Communication	3.777	19.427	0.000*	0.05	e,d>c,b,a	-0.018(.487)	0.420(.194)	-0.298(-0.214)	0.130(0.167)	
Community Collaboration	17.307	33.902	0.000*	0.09	e,d>c,b,a	0.442(0.551)	0.394(-0.326)	0.514(0.087)	0.068(.726)	

Note: MS=Mean Square CC= Canonical Correlation; SCDF= Standardized Canonical Discriminant Function Coefficients, SM=Structure Matrix *p<.008.

The results showed that the education level had a significant effect on all dimensions. After applying the Bonferroni correction (i.e., $\alpha = .05/6 = .008$), significant differences were observed in all dimensions. In the Volunteering, Home Learning, and Decision-Making dimensions, graduate and undergraduate degree holders had higher averages compared to associate degree, primary, and secondary education graduates. In the Home Learning dimension, graduate and undergraduate degree holders had higher averages than associate degree and secondary education graduates, while primary education graduates had the lowest averages. The effect size was close to moderate across all dimensions.

Descriptive Discriminant Analysis (DDA) revealed that only one of the four functions (Function 1 through 4) was significant ($\lambda = .808$, $p < .05$). To further evaluate the parent involvement scale scores, the standardized discriminant function coefficients and structure coefficients were examined (Table 4). According to Table 4, the best independent variables for predicting the dependent variable in Function 1 were Decision Making (.579), Community Collaboration (.442), and Home Learning (.290), indicating that ratings on these factors made the largest contributions in discriminating between parent education levels. Furthermore, the square of the canonical correlation ($.426^2$) for Function 1, when converted to a percentage, indicates that about 18% of the variation in Function 1 is explained by the education level.

4.4. Analysis Results According to the Number of Children Parents Have

MANOVA was conducted to determine whether parental involvement in education changes with respect to the number of children. Firstly, covariance equality was checked (Box's $M = 78.825$, $p > .05$), and covariances were found to be equal. Levene's Test was conducted to assess the homogeneity of variances for the dependent variables. Homogeneity of variances was observed for each subscale: Volunteering ($F = .789$, $p > .05$), Learning at Home ($F = .279$, $p > .05$), Decision Making ($F = 2.209$, $p > .05$), Parenting ($F = 2.080$, $p > .05$), Communication ($F = 2.312$, $p > .05$), and Community Collaboration ($F = 2.347$, $p > .05$). Due to the equality of covariances between groups and the homogeneity of variances, Wilks' Lambda (λ) was applied.

Using Wilks' criterion, it was found that the dependent variables were significantly affected by the number of children (Wilks $\lambda = .830$, $F(18, 4141.303) = 15.682$, $p = .000$, $\eta^2 = .06$). To determine in which dimensions the differences occurred, a univariate F-test was conducted as a follow-up test, and Tukey and discriminant analyses were applied as post hoc tests. Additionally, a Bonferroni correction for Type I error inflation was applied, with a critical value of 0.008 (.05/6).

The results of the univariate tests and discriminant analyses are presented in Table 4. The analysis results indicated significant differences in all dimensions based on the number of children: Volunteering ($F(3, 1469) = 34.417$, $p = 0.001$), Learning at Home ($F(3, 1469) = 34.795$, $p = 0.001$), Decision Making ($F(3, 1469) = 37.165$, $p = 0.001$), Parenting ($F(3, 1469) = 37.937$, $p = 0.001$), Communication ($F(3, 1469) = 54.326$, $p = 0.001$), and Community Collaboration ($F(3, 1469) = 47.771$, $p = 0.001$).

Table 5.
Univariate F-Test and Discriminant Analysis Results.

DVs	MS	F	Sig.	η^2	Tukey	SCDF1(SM1)	SCDF2(SM2)	SCDF3(SM3)	CC
Volunteering	7.618	34.417	0.000*	0.07	a>b>c>d	0.128(0.756)	0.296(-0.256)	0.340(-0.289)	0.402
Learning at Home	7.328	34.795	0.000*	0.07	a>b>c>d	0.079(0.702)	0.442(0.507)	0.530(-0.429)	0.084
Decision making	5.557	37.164	0.000*	0.08	a>b>c>d	0.436(0.631)	-0.598(0.295)	0.418 (0.145)	0.054
Parenting	4.523	37.937	0.000*	0.06	a>b>c>d	0.194(0.615)	-0.054(-0.611)	0.339(-0.338)	
Communication	9.085	54.326	0.000*	0.10	a>b>c>d	0.286(0.599)	-0.456(0.434)	0.624(0.374)	
Community Collaboration	23.624	47.771	0.000*	0.09	a>b>c>d	0.385(0.597)	0.434(.414)	-0.739(0.335)	

Note: MS= Mean Square, CC= Canonical Correlation; SCDF= Standardized Canonical Discriminant Function Coefficients, SM=Structure Matrix *p<.008.

The results indicated that the number of children has a significant effect on all dimensions. When the Bonferroni correction was applied ($\alpha = 0.05/6 = 0.008$), it was observed that as the number of children increases, the average parental involvement decreases across all dimensions. The highest average was found among parents with one child, while the lowest average was observed among parents with four or more children. The effect size was moderate across all dimensions.

The relative importance of independent variables in predicting the number of children was assessed. According to Table 5, the best independent variables in predicting the dependent variable are noted in Function 1: Decision Making (.436), Community Collaboration (.385), and Communication (.286). These factors made the largest contributions to discriminating between parents based on the number of children.

Furthermore, the square of the canonical correlation (0.402^2) for Function 1, when converted to a percentage, indicates that approximately 16% of the variation in Function 1 is attributable to the number of children of parents.

5. Discussion and Conclusion

This study aimed to determine the participation of parents in their children's education, examining it in terms of parents' ethnicity, gender, education level, number of children, and the educational stage their children attend. The study was conducted with 1,469 parents. The scale used in the study was originally developed by Erkan and Saban [7] and adapted to Kosovar culture by Morina, et al. [8].

The findings of the study revealed that the highest mean score in terms of ethnicity belonged to Turkish parents. Regarding gender, women had higher mean scores than men in all dimensions except for the Decision-Making dimension. In terms of education level, parents with postgraduate degrees had the highest mean scores. Concerning the number of

children, parents with one child had the highest mean scores, while parental involvement averages decreased as the number of children increased. Regarding the educational stage of the children, parents whose children attended primary school had higher mean scores for educational involvement.

When examining the general averages of parental involvement in education, parenting scores were the highest, followed by decision-making, communication, and volunteering. The lowest mean score was observed in the community collaboration dimension. Overall, parental involvement in education was found to be high. The MANOVA analysis examining the combined effects of ethnicity and gender revealed that Turkish female parents scored significantly higher than both male and Albanian male and female parents. The DDA results indicated that the decision-making dimension was the most effective variable in differentiating gender and country, followed by community collaboration and home learning dimensions.

The finding that men scored higher than women in Decision-Making, while women scored higher in Parenting, Communication, and other dimensions, may reflect the patriarchal family structure prevalent in Kosovar culture. Sheng [12] highlighted the controlling role of fathers and the serving role of mothers in patriarchal families. The gender differences observed in Decision-Making and other dimensions, such as Parenting and Communication, may also explain the controlling nature of men in relation to ethnicity. Shu, et al. [13] found similar results in their study conducted in China, where spouses specializing in certain areas or economic matters deferred decisions to their partners. Richmond [14] emphasized that power relations within the family shape decision-making and division of labor.

The utility-maximization theory suggests that decision-making in families is dominated by the spouse with greater knowledge and expertise on the matter [15]. Family structure (e.g., patriarchal), intra-family roles Walker, et al. [16] cultural structure Rosales [17], and parental ethnic characteristics Anderson and Minke [18] and Griffith [19] have been shown to influence parental involvement in education. Sandler [20] emphasized that family attitudes, expectations, and beliefs are significant factors in educational involvement and noted that these expectations vary across cultures and communities.

Denessen, et al. [21] and Lee and Bowen [22] found that parents' socioeconomic status and ethnicity are significant factors in educational involvement. Driessen, et al. [23] highlighted that the lower involvement of parents from ethnic minorities and lower socioeconomic backgrounds could be due to the barriers created by negative experiences Hornby and Blackwell [24] and Hornby and Lafaele [25]. Clark [26] also pointed out that parents' expectations for their children play an important role in parental involvement.

This study demonstrates that factors such as expectations, power, and family roles may influence differences in involvement among ethnic groups and genders within the same culture. Studies by Williams, et al. [27]; Bæck [28], and Bæck [29] also found that women have higher involvement in education, consistent with the findings of this study. Research by McKay, et al. [30] showed similar results regarding parental involvement in education across ethnic groups.

For example, Chavkin and Williams [31] found that although parental participation in school was low, many children reported that their parents helped with homework at home. This suggests that cultural differences may also account for the variations in school involvement among different ethnic groups. Studies in various cultures Bæck [29]; Chun and Devall [32]; Garcia Coll, et al. [33]; Reay, et al. [34]; Sheng [12], and Upright [35] have shown that mothers take greater responsibility for raising children.

The results of this study shed light on the impact of factors such as social differentiationAdkins [36] and Krais [37] family power relations, cultural roles, perceived benefits, and expectations on the gender differences in involvement among different ethnic groups.

Another finding of the study concerns the relationship between parents' gender and the educational stage their children attend. As the educational level of the students decreases, parental involvement in education increases. In other words, parents of children in primary school are more involved in education than parents of children in secondary school.

Regarding the combined effect of parental gender and the child's educational stage, differences were observed beyond the Decision-Making dimension. Female parents of children in ISCED 1 (primary education - grades 1-5) had higher mean scores across all dimensions. Conversely, male parents of children in ISCED 2 (lower secondary education - grades 6-9) had the lowest mean scores.

The DDA results indicate that the Parenting, Communication, and Home Learning dimensions contributed significantly to the differentiation of parental gender and the educational stage of their children. Although the effect size for Communication and Parenting was low, it can be said that the child's educational stage is an important factor in parents' involvement in education. Furthermore, while the combined effect of parental gender and the child's educational stage on parental involvement was not high, the interaction of these two variables was found to be significant.

Vogels [38] also reported that parental involvement is higher in primary education than in secondary education. Similar findings are supported by studies in the literature [39-41]. Parents of children in primary school (ISCED 1) tend to be more involved because their children are at the beginning of their educational journey, acquiring fundamental knowledge and skills, and are less experienced during this period.

This interpretation is reinforced by the stronger predictive power of the "Parenting" dimension. At the primary education level, children are less experienced in their educational and school lives and require more support. It is evident that they need additional help not only with cognitive tasks but also with psychomotor skills to complete their assignments. This study highlights that parents particularly mothers, are more involved in and supportive of their children's education at the primary school level.

Another result of the study is the effect of parents' education levels on their involvement in education. It can be said that as parents' education levels increase, their level of involvement also rises. Parents with undergraduate and postgraduate degrees had higher mean scores across all dimensions compared to those with primary and secondary education levels.

The DDA analysis revealed that only Function 1 among the four functions was significant. Accordingly, the Decision-Making variable was found to be the most distinctive factor in explaining differences in parents' education levels regarding their involvement in their children's education. This was followed by the dimensions of Collaboration and Home Learning. The results indicate that as parents' education levels increase, their involvement in education also increases. The effect size in each dimension was found to be moderate.

Based on the DDA results, Decision-Making, Collaboration, and Home Learning were the most influential dimensions in differentiating parents based on their education levels. Therefore, it can be said that these dimensions are the most effective predictors of the dependent variable.

The findings of this study align with previous research indicating that parents' education levels are significant factors in the process of educational involvement [22, 29, 42, 43]. It can be argued that parents with higher education levels are more informed about how they can be involved in the educational process and have a better understanding of the school and the education it provides [29].

Hornby and Blackwell [24] pointed out that parents with lower education levels tend to be less willing to interact with schools and that negative experiences related to education can adversely affect their involvement. Conversely, parents with higher education levels often have higher expectations for their children's education Englund, et al. [44] positive experiences with education, and a better understanding of how to participate in their children's learning Fan and Chen [45] and Lee and Bowen [22].

Lareau [46] emphasized that parents whose life experiences, lifestyles, and perspectives align with school culture are more likely to be involved in education, and this alignment increases as education levels rise. Chavkin and Williams [31] highlighted that parents with lower education levels often do not know how to participate in the educational process. Therefore, as education levels increase, parents become more knowledgeable about how to engage with their children's education.

Additionally, parents with higher education levels tend to develop more accurate and realistic perceptions of their children's academic achievements. This, in turn, leads to greater involvement in education, the development of realistic expectations, and healthier communication with schools. These factors collectively contribute to a more effective and constructive parental involvement process.

The study also highlights the significant impact of the number of children on parents' involvement in education. Results indicate that as the number of children increases, parents' involvement in education decreases. Parents with only one child demonstrate higher levels of involvement.

The DDA analysis revealed that only one of the three functions was significant. The results indicate that differences in Decision-Making, Social Collaboration, and Communication dimensions are more influential in explaining variations in parents' involvement based on the number of children. The effect size was found to be of moderate importance across all factors.

Parents with more children may have lower expectations from education, which negatively impacts their involvement. Considering that education is a critical pathway for social mobility, it appears that families with many children may not perceive education as a mechanism for transitioning to higher social strata. In contrast, parents with fewer children seem to expect more from education, hoping their child can achieve the social mobility they could not.

Parents with fewer children are better positioned to allocate time, money, and effort toward their children's education, which explains their higher levels of involvement. Economic constraints associated with raising multiple children may reduce parents' expectations of education and their ability to participate actively.

For instance, Piagkou, et al. [47] and Vellymalay [43] found that parents from low socioeconomic backgrounds are less involved in their children's education. This is often because families with more children in lower-income groups are preoccupied with financial survival, leaving less time and resources for education-related activities.

Several studies in the literature emphasize the influence of economic conditions on parental involvement [48-51]. Theoretical perspectives, such as Lareau's [52] view on socioeconomic status and Bourdieu's [53] cultural capital theory, also support the notion that parents with more children and lower socioeconomic status are less likely to participate in their children's education. This is because limited financial resources and time are primarily devoted to meeting basic needs.

Parental involvement is crucial for enhancing students' success in school (Gonzalez-Pienda, et al. [54] and Jeynes [55]) and enriching educational programs [39]. Identifying variables that influence parental involvement can help address the challenges parents face, thereby enabling teachers and school administrators to develop a better understanding of these difficulties [3, 56-58].

The findings indicate that demographic factors such as parents' ethnicity, gender, education level, number of children, and the educational level of their children are significant in determining parental involvement. In Kosovo, mothers and parents with higher education levels have a more pronounced impact on their children's education. The cultural role of mothers as primary transmitters of education is more evident in this context.

Additionally, the study found that Turkish mothers demonstrate higher involvement in child-rearing compared to Albanian female teachers. In both ethnic groups, fathers show lower levels of involvement across all dimensions except Decision-Making, highlighting cultural differences and role distinctions in child-rearing and education in Kosovo.

The study faced limitations, such as the small sample size of male parents and parents with only one child, which restricted the analysis of the combined effects of gender and the number of children with other variables (e.g., parents' age or children's gender). Furthermore, other ethnic groups in Kosovo were not included due to the small number of children from these groups enrolled in schools, which represents a significant limitation.

Future research involving parents from different ethnic groups within the same country could provide valuable insights into the factors influencing parental involvement in education.

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