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Adjustment map of secondary schools in Türkiye: examining the adjustment of secondary school students to school in terms of gender, class and region *

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Abstract

The aim of this study is to examine the school adjustment of middle school students in Türkiye based on gender, class and region. The population of the research consists of secondary school students studying in public schools in Türkiye. The sample consists of 26,962 students selected from 24 provinces and 104 schools, representing 12 regions according to Türkiye's NUTS. The School Adjustment Scale for Secondary School Students developed by Gençtanırım Kurt et al. (2023) was used to measure the adjustment of secondary school students to school. Factorial ANOVA was applied to the comparisons made by taking into account the gender, grade level and region of residence of the secondary school students. Data analysis was carried out with the Jamovi statistical package program. The results of the research revealed that secondary school students' total school adjustment scores and the academic, social and behavioral adjustment scores, which are the sub-dimensions of school adjustment, showed significant differences according to gender, grade level and statistical regions. Accordingly, the highest average in terms of academic adjustment dimension is in the

Keywords

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Northeastern Anatolia Region; the lowest average is in the Eastern Marmara Region; the highest average in the social adjustment dimension is in the Western Black Sea Region; the lowest average is in the Central Anatolia Region; it was determined that the highest average in the behavioral adjustment dimension was in the Western Anatolia Region and the lowest average was in the Istanbul Region. When looked at by region in terms of school adjustment total scores, it is seen that the highest average is in the Northeastern Anatolia Region and the lowest average is in the Western Marmara Region. To reduce these disparities, it is recommended to expand psychosocial support programs for students, particularly in regions with low levels of adjustment, and to strengthen the training processes of teachers so that they can develop sensitive and inclusive educational strategies for students.

Introduction

In accordance with the current legislation in Türkiye, 12 years of compulsory education — covering primary, secondary, and high school levels, ensures that most children between the ages of 6-18 are included in the education system, thereby offering equal educational opportunities for all. The secondary school level, which often covers the age range of 10-14, constitutes the second stage of compulsory education and covers the transition from primary school to high school. This process is considered as a critical period in which students form their academic identity and shape their future educational life (National Middle School Association [NMSA], 2003). At this level, 5,524,117 students are studying in a total of 18,907 educational institutions and 32.5% of the students attending compulsory education are secondary school students (Ministry of National Education [MoNE], 2023). These figures provide a significant indicator of the scope and prevalence of lower secondary education.

Secondary school students, who are often between the ages of 10-14, make critical and complex choices that shape their lives to a large extent during this period. Secondary school period plays an important role in students' social, emotional and career development. In this period, children's personality formation and social-emotional development accelerate, while their career expectations begin to take shape (Gökdeniz, 2008; Oğuz Duran & Kaya Memiş, 2017). Students attempt to adjust to the school environment as a reflection of their academic and career development. In this process, which progresses with the difficulties brought by adolescence, the fact that secondary school has different characteristics from primary school and the difficulties adolescents experience in meeting their needs can lead to various problems including academic failure, violence, bullying or other behavioral issues as well as school adjustment problems (Kingery et al., 2011). In this context, it is important to focus on the causes of the difficulties experienced by students in the process of school adjustment in order to formulate educational policies. Therefore, the concept of 'school adjustment', described as a multidimensional phenomenon involving the match between the expectations of the educational environment and the student's ability to meet these expectations, becomes remarkable (Craighead & Nemeoff, 2001).

School Adjustment in Secondary School

Examining school adjustment in secondary school is essential for understanding the challenges mentioned above and for developing effective solutions. This is because middle school is a **critical period** when children are at risk of disengaging from education (OECD, 2021). It is also a stage during which problem behaviors—such as smoking, alcohol and substance use, and antisocial conduct—emerge and increase (Jessor, 1998), often leading to socially and developmentally undesirable outcomes. Furthermore, this period is associated with elevated levels of depressive symptoms and school-related difficulties (Fite et al., 2019). Given these challenges, focusing on studies related to school adjustment during middle school is considered significant in the literature. Supporting students' adjustment to

school should be a priority during this phase, as such adjustment positively influences both their academic achievement (Rydell Altermatt, 2011) and psychosocial well-being (Park & Kang, 2011).

When the studies conducted in Türkiye on school adjustment are analysed; it is seen that it is mostly focused on pre-school (Arabacıoğlu & Bağçeli Kahraman, 2021; Çelik, 2021; Erten, 2012; Gülay, 2011; Gülay & Erten, 2011; Göktaş & Gülay-Ogelman, 2019; Güler, 2016; Kar, 2022; Şebitçi Sarıbaş & Gültekin Akduman, 2019; Yalçın, 2016) and primary school period (Demirtaş-Zorbaz & Ergene, 2019; Kurtuluş Çalışkan & Canbulat, 2023; Özaslan & Baba-Öztürk, 2022; Özer et al, 2022; Temel & Sapsağlam, 2018; Yoleri & Tanış, 2014). In contrast, relatively fewer studies have been conducted with high school students (Aslan & Küçüker, 2022; Durnalı et al., 2018; Kaynak, 2021; Makas, 2020; Makas & Düşünceli, 2021; Özbilen et al., 2018), while recent years have seen increasing interest in adjustment during higher education (Avcı, 2019; Erzen, 2018; Karakuş & Akay, 2020; Öktem, 2023; Savaşan & Meriç, 2021). Although research has largely concentrated on early educational levels, school adjustment in middle school—an important transitional period with unique academic and developmental challenges—has received limited scholarly attention (Demirkalp Kaya, 2022; Gençtanırım Kurt, 2022; Usta et al., 2021).

In recent years, it is observed that studies have been carried out by MoNE in Türkiye to support the school adjustment of first-grade students, especially in the transition phase (MoNE, 2024), and when it comes to school adjustment, orientation services offered to new students are emphasised. In the literature, the transition to secondary school is accepted as a period of increased risk for students' academic, behavioural and social adjustment difficulties (Dawes et al., 2021). At the same time, it has been observed that the transition from primary to secondary school causes significant decreases in academic achievement and this effect continues in the following grade levels (Rockoff & Lockwood, 2010). For this reason, school adjustment studies are considered necessary not only for students in transition but also for all students in the education system to ensure their emotional, social and cognitive development and to increase their academic success. At this point, there is a need for a comprehensive and accurate definition of the concept of school adjustment, which has a complex structure (Reich & Flanagan, 2010). Tomás et al. (2020) defined school adjustment as actively participating in school activities, adapting to school rules, and establishing positive social relationships with friends, teachers and other employees in the school. Adeyemo (2005), on the other hand, defines school adjustment as coping with some academic and social difficulties faced in the school climate and performing the behaviours expected to be fulfilled at school in an academically and socially appropriate manner. Juvonen and Wentzel (1996) also draw attention to the diversity and complexity in the definition of this term and divide the components of school adjustment into two as academic-related and social-personal-related. Therefore, there is no single agreed upon definition of school adjustment, and each researcher emphasises different aspects of school adjustment. At this point, the explanations of Demirtaş Zorbaz (2016), who addresses different aspects of school adjustment holistically, draw attention. This explanation, which deals with the three dimensions of school adjustment as academic adjustment, social adjustment and behavioural adjustment together, is guiding in explaining school adjustment in a multidimensional way.

In order to understand student's school adjustment process, it is important to evaluate academic, social and behavioural adjustment levels as an integrated whole. These dimensions are interrelated and form an inseparable structure (Demirtaş Zorbaz, 2016). For instance, academic adjustment is built upon the school's expectations and students' learning needs. In contrast, social adjustment refers to student's ability to communicate effectively with teachers or friends in the school environment and to express themselves (Erten Sarıkaya, 2020; Valka, 2015). In addition, behavioural adjustment, which includes following school rules, completing academic tasks, and avoiding problematic behaviours, is closely linked to academic adjustment, as both relate to meeting the expectations of the school (Birch & Ladd, 1997; Şimşek et al., 2020). The study conducted by Gençtanırım Kurt et al. (2023), which comprehensively addresses all dimensions of school adjustment, provides a framework for evaluating school adjustment among middle school students across these dimensions. Within the context of this complex and multidimensional construct, school adjustment can be viewed

as being influenced by numerous factors. In particular, certain individual and environmental characteristics are directly associated with school adjustment.

Research focusing on the school adjustment of secondary school students highlights the role of gender in the adjustment process. While many studies frequently suggest that female students tend to exhibit higher levels of school adjustment compared to male students in secondary school (Akos & Galassi, 2004; Brass et al., 2019; Farmer et al., 2006; Negru & Băban, 2009; Serna & Martínez, 2019; Simons-Morton et al., 1999; Uz Baş, 2003); a limited number of studies indicate that there is no significant gender-related difference in students' levels of school adjustment during the transition to secondary school (Kingery et al., 2011). Beyond overall adjustment, research findings also indicate that gender is associated with specific dimensions of adjustment. Female students tend to demonstrate stronger attachment to the school environment and higher academic achievement (Brass et al., 2019; Ueno & McWilliams, 2010). In this context, it is necessary to conduct more research on the adjustment problems experienced by male and female students during the transition from primary to secondary school.

School adjustment may differ according to grade level as well as gender. A student's adjustment to school may differ from grade to grade holistically or in academic, social and behavioural areas. Studies show that fifth-grade students have higher levels of school adjustment than other grades (Brass et al., 2019; Caldarella et al., 2011; Harter, 1999), and sixth-grade students have higher levels of social adjustment than seventh-grade students (Aydoğdu & Gürsoy, 2019). Research findings frequently reveal that as the grade level increases, school adjustment also increases (Wentzel et al., 2010; Wigfield et al., 2006). In some studies, it is stated that grade level does not create a significant change in the prediction of school adjustment (Rusnila et al., 2021). Understanding how school adjustment changes according to grade levels is important for the regulation of educational programmes in general, as well as guiding some regulations related to in-school adjustment. In this context, it is important to understand how school adjustment changes in terms of grade.

In addition to the relationship between variables such as gender and class with school adjustment, it is thought that macro-level regional factors may also be related to school adjustment. As a matter of fact, studies in the relevant literature have shown that differences between regions lead to educational inequalities (Da Wan et al., 2018). Regional differences in educational opportunities and socio-economic conditions may lead to differences in academic performance and school adjustment. For example, students in regions with better educational opportunities and higher socio-economic status tend to perform better academically (Santos et al., 2023). A centralised education system has been adopted in Türkiye since the republican era, but the growth of the Turkish education system in terms of scope and quantity has led to the discussion that local systems should be considered along with the centralised system (Atalay, 1995). In this context, examining the school adjustment of secondary school students according to the Classification of Territorial Units for Statistics (NUTS), which is used as a basis for the implementation of regional development policies in Türkiye, may be instructive for policy makers and implementers in terms of regional regulations. In Türkiye's NUTS, a three-tier system has been established. In this context, Levels 1 and 2 represent regions, while Level 3 refers to provinces. The 81 provinces constitute Level 3; these provinces are grouped into 26 Level 2 regions, which in turn are grouped into 12 Level 1 regions. In this classification, Türkiye's traditional geographical regions were not considered; instead, factors such as population size, cultural structure, and the level of development of provinces were taken into account (Taş, 2006). NUTS level 1 and level 2 regions are generally used to determine the broad framework of national and regional policies. Since the primary purpose in the creation of NUTS Level 2 regions is to determine regional policies, it is necessary to know the general characteristics of the regions and to determine the necessary policies according to these characteristics. It is particularly emphasized that identifying regional needs is critical when formulating policies that aim to support local strengths and address weaknesses (Çelikel Yiğiter, 2019). According to the data of the Turkish Statistical Institute (2014), Istanbul, Western Marmara, Western Anatolia, Aegean and Mediterranean Regions stand out as the regions with the most opportunities in Türkiye in areas such as education, entertainment-culture, tourism, industry and health (As cited in Uyanık et al., 2015). In

contrast, it is stated that students in the Northeastern, Middle Eastern and Southeastern Anatolia regions are reported to experience more limited learning environments compared to those in more developed regions, due to insufficient educational infrastructure and unfavorable socio-economic conditions, including disparities in the quality of education, teacher availability, and access to educational materials (Ünsal & Sülkü, 2020). As a matter of fact, Koçberber and Kayancık (2010), in their study examining the interregional differences in educational facilities in primary schools in Türkiye, reached results to support this situation. In the study, it was concluded that schools in the Northeastern Anatolia region have physical infrastructure deficiencies, education expenditures per student by households and educational institutions are at the lowest level, and the region is far behind the average of Türkiye in terms of student achievement. Similarly, in Southeastern and Middle Eastern Anatolia, it was observed that the physical infrastructure facilities of the schools in the region and the educational investments made for students were quite low. In this context, it is thought that a regional comparison is important, considering that such regional differences may play a decisive role in students' school adjustment processes. Considering all the information, examining the multidimensional structure of school adjustment in secondary school (Demirtaş Zorbaz, 2016) and producing solutions suitable for the needs of students can be an important tool to evaluate the effectiveness of educational policies and programmes. In addition, there is a need for comprehensive studies that reveal the situation throughout the country in order to serve educational policies. Therefore, the problem statement of this research, which was conducted with the data obtained from 12 regions in the NUTS, was determined as ***'Do middle school students' levels of school adjustment significantly differ based on gender, grade level, and statistical regions?'*** and answers to the following questions were sought to solve the problem:

1. Do the mean scores of middle school students' school adjustment significantly differ by gender in terms of academic, social, behavioral, and overall adjustment?
2. Do the mean scores of middle school students' school adjustment in the academic, social, and behavioral sub-dimensions, as well as the overall adjustment, significantly differ by grade level?
3. Do the mean scores of middle school students' school adjustment in the academic, social, and behavioral sub-dimensions, as well as the overall adjustment, significantly differ by statistical regions in Türkiye?
4. Do the mean scores of students in the sub-dimensions and total score of school adjustment significantly differ based on the combined effect/interaction of grade level, gender, and statistical region in Türkiye?

Method

Research Model

This study was conducted using the descriptive survey model, one of the quantitative research methods. The survey model is a method used to describe an existing situation and examine the relationships between various variables (Karasar, 2012).

Participants

In order to identify the variables affecting the school adjustment of middle school students in Türkiye and to map their adjustment patterns, provinces representing different geographical, socio-economic, and cultural characteristics of the country were included in the sample, aiming to examine diverse student profiles. This large-scale sample was designed to enhance the generalizability of the research findings. Therefore, the study sample was based on the NUTS of Türkiye. The NUTS classification in Türkiye follows a three-tier system, where Level 1 and Level 2 represent regions, while Level 3 covers provinces (Taş, 2006). Considering Türkiye's administrative provincial structure, the 81 provinces constitute Level 3, the 26 regions formed by merging provinces constitute Level 2, and the 12 regions formed by merging these 26 regions constitute Level 1. In this context, in order to identify the variables affecting the school adjustment of middle school students in Türkiye, subregional statistics at Level 2 were determined as strata. Stratified random sampling ensures better representation of the

population and reduces sampling errors. The effective application of this method requires a large population, which results in a relatively large sample size (Baltacı, 2018). Accordingly, the study was conducted in the provinces of İstanbul, Ankara, Çankırı, Antalya, Muğla, Edirne, İzmir, Diyarbakır, Van, Kırşehir, Mersin, Mardin, Erzincan, Giresun, Kars, Elazığ, Kayseri, Bartın, Amasya, Balıkesir, Uşak, Konya, Eskişehir, and Bolu.

The study group consists of middle school students enrolled in the 5th, 6th, 7th, and 8th grades in 104 schools across 24 provinces during the 2022-2023 academic year. Among the students in the study group, 12,790 (50.5%) are female, 12,477 (49.2%) are male, and 76 (0.03%) did not specify their sex. In terms of grade levels, 6,290 (24.8%) are in the 5th grade, 6,325 (25%) in the 6th grade, 6,433 (25.4%) in the 7th grade, and 6,295 (24.8%) in the 8th grade. The students' average age is 11.86 (SD = 1.194).

Data Collection Tools

Personal Information Form: This form was prepared by the researchers to determine student-level variables such as gender and grade level.

School Adjustment Scale for Middle School Students: This scale was developed by Gençtanırım Kurt et al. (2023) to measure middle school students' adjustment to school. The scale consists of three subdimensions: academic adjustment (11 items), behavioral adjustment (8 items), and social adjustment (6 items), totaling 25 items. Sample items include: "I do my homework with enthusiasm for learning," "I use shared classroom materials carefully," and "My classmates invite me to their games." The items are rated on a 5-point Likert scale. The highest possible score on the scale is 125, while the lowest is 25. Higher scores indicate a higher level of school adjustment among students. A three-level confirmatory factor analysis (CFA) demonstrated that the model fit indices were at an acceptable level (CFI = 0.927, TLI = 0.923, RMSEA = 0.035, 95% CI [0.033–0.036], SRMR = .043; Gençtanırım Kurt et al., 2023). The reliability coefficients of the scale indicate that the Cronbach's alpha for the total score is .86. For the second-level dimensions, Cronbach's alpha, McDonald's ω, and composite reliability coefficients were calculated as follows: academic adjustment (.83, .84, .88), social adjustment (.72, .73, .86), and behavioral adjustment (.78, .80, .85) (Gençtanırım Kurt et al., 2023).

As part of this study, Cronbach's alpha and McDonald's omega reliability coefficients were calculated to assess the reliability of the scale. The results indicated that the reliability coefficients were as follows: for academic adjustment, 0.83 and 0.84; for behavioral adjustment, 0.78 and 0.80; for social adjustment, 0.68 and 0.70; and for the total school adjustment score, 0.86 and 0.89. Additionally, the confirmatory factor analysis (CFA) demonstrated that the model fit indices indicated a good fit (CFI = 0.941, TLI = 0.933, RMSEA = 0.033, 95% CI [0.033–0.034], SRMR = .039) (Bentler, 1990; Hu & Bentler, 1999).

Data Analysis

To avoid biased results, individuals with a missing data rate above 25% (those who stopped responding to scale items after a certain point) were excluded from the dataset. Subsequently, missing data rates were examined at the variable level and found to range between 0.4% and 3.1%. Missing data were imputed using the predictive mean matching method available in the mice package in R (Van Buuren & Groothuis-Oudshoorn, 2011).

To examine whether middle school students' school adjustment (total score), behavioral adjustment, social adjustment, and academic adjustment dimensions differed based on gender, grade level, and region, a factorial ANOVA was conducted. Performing separate ANOVA tests for each dependent variable would increase the risk of Type I error; therefore, factorial ANOVA was preferred. This analysis was chosen to assess the main effects of independent variables (gender, grade level, and region) on each dependent variable, as well as the interactions between these variables. In this phase, the assumption of normality was first evaluated by examining skewness and kurtosis coefficients. According to Curran et al. (1996), a skewness value between -2 and +2 and a kurtosis value between -7 and +7 indicate that the distribution can be considered normal. The analysis results showed that the skewness and kurtosis values fell within the normal distribution range (-2, +4). Another assumption,

homogeneity of variances, was tested using Levene's test. Field (2017) pointed out that Levene's test might be significant in large samples even when variance differences are minimal. Therefore, he recommended examining the variance ratio, which should not exceed 2 or 3. Since Levene's test was statistically significant (< 0.05), variance ratios were considered, and all were found to be below 1.5. As a result of these analyses, it was determined that the dataset met the assumptions of normality and homogeneity of variances. The data were analyzed using the Jamovi statistical software.

Additionally, the maps provided in the appendix were created using the maps package (Becker et al., 2018) in R 4.3.1 (R Core Team, 2023).

Procedure

The researchers first obtained ethical approval from the Ethics Committee for Scientific Research and Publications in Social and Human Sciences at Kırşehir Ahi Evran University (Protocol No: 2022/06/08, Date: 17.08.2022) for the study to be conducted in classrooms during the 2022–2023 academic year. Subsequently, official permission was secured from the Ministry of National Education. Permissions were also obtained from the principals of the participating schools, and parental consent forms were distributed. These forms were collected by teachers and then submitted to the research team. Following this, the researchers visited the classrooms at pre-scheduled times and explained the purpose of the study to the students. Scale sets were distributed to students who volunteered to participate, and data collection was conducted face-to-face in the classroom setting. During the process, detailed information regarding the study's purpose was provided to participants, and the principles of confidentiality and voluntary participation were clearly explained. Participants were also informed that they could withdraw from the study at any time, that their responses would be anonymized and analyzed collectively, and that the data would be used solely for scientific purposes. In this context, the study was conducted in accordance with ethical standards. Informed consent was obtained from all participants, voluntary participation was ensured, and ethical principles were strictly followed. The administration of the scales took approximately 20 to 30 minutes, depending on the students' grade level. Data collection was carried out simultaneously by the research team across 24 provinces and was completed within approximately two months.

Results

It was aimed to examine whether secondary school students' scores on the subdimensions of the School Adjustment Scale (academic, behavioral, and social), as well as the total score, differ by gender, grade level, and geographical region, using data collected from 12 regions classified by the Turkish Statistical Institute (TURKSTAT) (TURKSTAT, 2005). Firstly, descriptive statistics of students' school adjustment scores by gender, grade level, and region are presented in Table 1 to Table 3, respectively.

Table 1. Descriptive Statistics for the School Adjustment Scale by Gender

	Gender	N	M	SD	Minimum	Maximum
Academic Adjustment	Male	11915	42.56	7.64	11	55
Subscale	Female	12304	44.12	7.12	11	55
Social Adjustment	Male	11915	22.66	4.53	6	30
Subscale	Female	12304	23.29	4.44	6	30
Behavioral	Male	11915	35.29	4.61	8	40
Adjustment Subscale	Female	12304	37.26	3.58	8	40
Total School	Male	11915	100.52	13.32	28	125
Adjustment Scale	Female	12304	104.68	11.78	36	125

As shown in Table 1, the mean scores of male students on the subdimensions and total score of the School Adjustment Scale were lower than those of female students. The largest difference in means was observed in the total school adjustment score (Mmale =100.52, Mfemale = 104.68), while the smallest difference was found in the social adjustment subdimension (Mmale = 22.66, Mfemale = 23.29).

Table 2. Descriptive Statistics of the School Adjustment Scale by Grade Level

	Grade Level	N	M	SD	Minimum	Maximum
Academic	5.	5911	46.17	6.58	15	55
Adjustment	6.	6060	44.09	6.97	13	55
Subscale	7.	6183	42.26	7.46	12	55
	8.	6065	41.00	7.58	11	55
Social	5.	5911	23.45	4.38	6	30
Adjustment	6.	6060	23.04	4.45	6	30
Subscale	7.	6183	22.80	4.59	6	30
	8.	6065	22.64	4.52	6	30
Behavioral	5.	5911	36.84	4.04	10	40
Adjustment	6.	6060	36.34	4.13	8	40
Subscale	7.	6183	36.13	4.22	8	40
	8.	6065	35.86	4.47	8	40
Total School	5.	5911	106.48	11.87	36	125
Adjustment Scale	6.	6060	103.48	12.15	43	125
	7.	6183	101.20	12.86	34	125
	8.	6065	99.51	12.92	28	125

Table 2 indicates that mean scores on the academic adjustment subdimension decrease progressively with higher grade levels. The highest mean academic adjustment score was observed in 5th grade (M = 46.17), while the lowest was in 8th grade (M = 41.00). A similar pattern was observed in the social adjustment subdimension, as mean scores decreased with higher grade levels. The highest mean score in social adjustment was in 5th grade (M = 23.45), while the lowest was in 8th grade (M = 22.64). The behavioral adjustment subdimension also showed a decline in mean scores as grade level increased. The highest mean score in behavioral adjustment was found in 5th grade (M = 36.84), while the lowest was in 8th grade (M = 35.86). Similarly, total school adjustment scores also decreased with grade level. The highest mean total adjustment score was recorded in 5th grade (M= 106.48), while the lowest was in 8th grade (M = 99.51).

Table 3. Descriptive Statistics by Region

	Region	N	$\bar{X}$	SS	Minimum	Maximum
Academic	Northeastern Anatolia	1943	44.93	6.97	16	55
Adjustment	Mediterranean	2070	42.91	7.45	11	55
Subscale	Western Anatolia	2690	42.50	7.71	13	55
	Western Black Sea	1635	43.19	7.37	12	55
	Western Marmara	1586	42.28	7.53	15	55
	Eastern Black Sea	963	43.32	7.42	12	55
	Eastern Marmara	2377	42.11	7.95	11	55
	Aegean	2375	42.77	7.51	13	55
	Southeastern Anatolia	2735	44.79	6.68	11	55
	Istanbul	1066	42.72	7.55	12	55
	Central Anatolia	2723	43.57	7.44	11	55
	Central Eastern Anatolia	2056	44.68	6.73	16	55

Table 3. Continued

	Region	N	$\bar{X}$	SS	Minimum	Maximum
Social Adjustment Subscale	Northeastern Anatolia	1943	23.19	4.55	6	30
	Mediterranean	2070	22.67	4.52	7	30
	Western Anatolia	2690	22.95	4.44	6	30
	Western Black Sea	1635	23.50	4.21	6	30
	Western Marmara	1586	23.06	4.59	6	30
	Eastern Black Sea	963	23.43	4.51	7	30
	Eastern Marmara	2377	23.17	4.54	6	30
	Aegean	2375	23.14	4.45	6	30
	Southeastern Anatolia	2735	22.89	4.42	6	30
	Istanbul	1066	22.73	4.62	6	30
	Central Anatolia	2723	22.58	4.58	6	30
	Central Eastern Anatolia	2056	22.84	4.50	6	30
Behavioral Adjustment Subscale	Northeastern Anatolia	1943	36.37	4.17	14	40
	Mediterranean	2070	36.35	4.21	12	40
	Western Anatolia	2690	36.55	3.88	8	40
	Western Black Sea	1635	36.16	4.15	13	40
	Western Marmara	1586	36.08	4.38	12	40
	Eastern Black Sea	963	36.48	4.09	8	40
	Eastern Marmara	2377	36.40	4.22	8	40
	Aegean	2375	36.37	4.38	14	40
	Southeastern Anatolia	2735	36.11	4.21	8	40
	Istanbul	1066	36.07	4.44	16	40
	Central Anatolia	2723	36.25	4.45	8	40
	Central Eastern Anatolia	2056	36.17	4.21	9	40
Total School Adjustment Scale	Northeastern Anatolia	1943	104.49	12.08	45	125
	Mediterranean	2070	101.93	12.75	37	125
	Western Anatolia	2690	102.01	12.82	36	125
	Western Black Sea	1635	102.87	12.46	41	125
	Western Marmara	1586	101.43	13.17	42	125
	Eastern Black Sea	963	103.23	12.82	34	125
	Eastern Marmara	2377	101.69	13.46	36	125
	Aegean	2375	102.28	12.89	49	125
	Southeastern Anatolia	2735	103.79	12.00	41	125
	Istanbul	1066	101.53	13.28	40	125
	Central Anatolia	2723	102.41	13.06	28	125
	Central Eastern Anatolia	2056	103.71	11.77	55	125

Table 3 shows that in the academic adjustment subdimension, the highest mean score was observed in the Northeastern Anatolia region (M= 44.93), while the lowest was in the Western Marmara region (M= 42.28). In the social adjustment subdimension, the highest mean score was in the Western Black Sea region (M= 23.50), and the lowest was in the Istanbul region (M= 22.73). For behavioral adjustment, the highest mean score was again observed in the Western Black Sea region (M= 36.16), and the lowest in Istanbul (M= 36.07). Regarding total school adjustment, the Northeastern Anatolia region had the highest mean score (M= 104.49), while the Western Marmara region had the lowest (M= 101.43).

The findings of the Factorial ANOVA analyses results, conducted to determine whether students' mean scores in the sub-dimensions and total score of school adjustment significantly differ based on the interaction of grade level, gender, and statistical region in Türkiye, are presented in Table 4 through Table 7.

Table 4. Factorial ANOVA Results for School Adjustment Differences by Gender, Grade Level, and Statistical Regions Among Middle School Students

	Sum of Squares	df	Mean Square	F	*p*	η^2p
Gender	93868.04	1	93868	626.62	< .001	0.025
Grade level	146393.49	3	48798	325.75	< .001	0.039
Region	17769.54	11	1615	10.78	< .001	0.005
Grade level ✻ Region	19228.82	33	583	3.89	< .001	0.005

Interaction variables that were not statistically significant (p > .05) are not reported.

According to the ANOVA results, the main effect of gender on school adjustment was statistically significant, with female students (M= 104.69) scoring higher than male students (M= 100.52), ($F_{(1, 24123)}$ = 626.62, p <.05; η^2p=0.03). This indicates that gender has a small effect on students' school adjustment scores. Regarding grade level, significant differences were found among 5th (M = 106.49), 6th (M = 103.48), 7th (M = 101.20), and 8th grade students (M = 99.51), ($F_{(3, 24123)}$ = 325.75, p <.05; η^2p=0.04), with 5th grade students showing higher school adjustment. These results suggest that grade level has a small effect on school adjustment. A statistically significant difference was also found across the 12 statistical regions—Mediterranean (M= 101.94), Western Anatolia (M = 102.01), Western Black Sea (M= 102.87), Western Marmara (M= 101.43), Eastern Black Sea (M = 103.24), Eastern Marmara (M= 101.69), Aegean (M= 102.28), Southeastern Anatolia (M= 103.80), Northeastern Anatolia (M= 104.50), Central Anatolia (M= 102.42), Eastern Anatolia (M= 103.71), and Istanbul (M= 101.53), ($F_{(11, 24123)}$ = 10.78, p <.001; η^2p=0.01), indicating a small effect of region on school adjustment. On the other hand, Post-hoc Tukey analysis revealed statistically significant differences between several regional pairs: Mediterranean vs. Southeastern, Northeastern, and Eastern Anatolia; Western Anatolia vs. Southeastern, Northeastern, and Eastern Anatolia; Western Black Sea vs. Western Marmara and Northeastern Anatolia; Western Marmara vs. Southeastern, Northeastern, and Eastern Anatolia; Eastern Marmara vs. Southeastern, Northeastern, and Eastern Anatolia; Aegean vs. Southeastern, Northeastern, and Eastern Anatolia; Southeastern Anatolia vs. Central Anatolia and Istanbul; Northeastern Anatolia vs. Central Anatolia and Istanbul; and Eastern Anatolia vs. Istanbul. In addition, the interaction between grade level and region was statistically significant ($F_{(33, 24123)}$ = 3.89, p < .05). Simple main effects analysis showed that gender differences in school adjustment were significant across all grade levels (p < .05).

Table 5. Results of Factorial ANOVA for Academic Adjustment Differences by Gender, Grade Level, and Statistical Regions Among Middle School Students

	Sum of Squares	df	Mean Square	F	*p*	η^2p
Gender	12687	1	12687.1	255.29	< .001	0.01
Grade level	81375	3	27124.9	545.81	< .001	0.06
Region	21148	11	1922.6	38.69	< .001	0.02
Gender ✻ Grade level	412	3	137.3	2.76	.04	0.01
Gender ✻ Region	1175	11	106.9	2.15	.014	0.01
Grade level ✻ Region	6076	33	184.1	3.71	< .001	0.01

Interaction variables that were not statistically significant (p > .05) are not reported.

As seen in Table 5, factorial ANOVA was conducted to determine whether academic adjustment differed by gender, grade level, and statistical regions. According to the ANOVA results, the main effect of gender on academic adjustment was statistically significant, with female students (M= 44.10) scoring higher than male students (M= 42.57), ($F_{(1, 24123)} = 255.29$, $p < .05$; $\eta^2p = 0.01$). This indicates that gender has a small effect on students' academic adjustment. Regarding grade level, significant differences were found among 5th (M = 46.13), 6th (M= 44.09), 7th (M= 42.15), and 8th grade students (M= 40.98), ($F_{(3, 24123)} = 545.81$, $p < .05$; $\eta^2p = 0.06$), with 5th grade students showing the highest academic adjustment. These results suggest that grade level has a medium effect on academic adjustment. A statistically significant difference was also found across the 12 statistical regions: Mediterranean (M = 43.04), Western Anatolia (M= 42.69), Western Black Sea (M = 43.27), Western Marmara (M= 42.43), Eastern Black Sea (M= 43.15), Eastern Marmara (M= 42.13), Aegean (M= 42.71), Southeastern Anatolia (M= 44.76), Northeastern Anatolia (M= 44.86), Central Anatolia (M= 43.58), Eastern Anatolia (M = 44.64), and Istanbul (M= 42.90), ($F_{(11, 24123)} = 38.69$, $p < .001$; $\eta^2p = 0.02$), indicating a small effect of region on academic adjustment. Post-hoc Tukey analysis revealed statistically significant differences between several regional pairs: Mediterranean vs. Southeastern, Northeastern, and Eastern Anatolia; Western Anatolia vs. Southeastern, Northeastern, Central, and Eastern Anatolia; Western Black Sea vs. Western Marmara and Northeastern Anatolia; Western Marmara vs. Southeastern, Northeastern, and Eastern Anatolia; Eastern Marmara vs. Southeastern, Northeastern, and Eastern Anatolia; Aegean vs. Western Marmara, Southeastern, Northeastern, and Eastern Anatolia; Southeastern Anatolia vs. Istanbul and Eastern Anatolia; Northeastern Anatolia vs. Central Anatolia and Istanbul; Central Anatolia vs. Eastern Anatolia; and Eastern Anatolia vs. Istanbul. Moreover, the interactions between grade level and gender ($F_{(3, 24123)} = 2.763$, $p < .05$), gender and region ($F_{(11,24123)} = 2.150$, $p < .05$), and grade level and region ($F_{(33, 24123)} = 3.705$, $p < .05$) were found to be statistically significant. However, in the simple main effects analysis, when the region variable was selected as the simple effect variable, a significant difference was observed between male and female students according to grade level ($p < .05$). Factorial ANOVA results for social adjustment differences by gender, grade level, and statistical regions in middle school students were given in Table 6.

Table 6. Factorial ANOVA Results for Social Adjustment Differences by Gender, Grade Level, and Statistical Regions in Middle School Students

	Sum of Squares	df	Mean Square	F	*p*	η^2p
Gender	2339	1	2339.5	117.186	< .001	0.005
Grade level	2218	3	739.5	37.041	< .001	0.005
Region	1570	11	142.7	7.149	< .001	0.003
Grade level ⁎ Region	1869	33	56.6	2.836	< .001	0.004

Interaction variables that were not statistically significant (p > .05) are not reported.

The analysis revealed a statistically significant main effect of gender, with female students (M= 23.30) demonstrating higher social adjustment than male students (M= 22.65), ($F_{(1, 24123)} = 117.19$, $p < .05$; $\eta^2p=0.01$), indicating a small effect size. Significant differences were also observed across grade levels: fifth grade (M=23.50), sixth grade (M= 23.04), seventh grade (M= 22.80), and eighth grade (M= 22.64), ($F_{(3, 24123)} = 37.04$, $p < .05$; $\eta^2p=0.01$), with fifth graders showing the highest social adjustment scores. This suggests that grade level has a small but significant effect on social adjustment. The analysis of statistical regions showed significant variation: Mediterranean (M= 22.67), Western Anatolia (M= 22.95), Western Black Sea (M= 22.50), Western Marmara (M= 23.06), Eastern Black Sea (M = 23.43), Eastern Marmara (M= 23.17), Aegean (M= 23.14), Southeastern Anatolia (M= 22.89), Northeastern Anatolia (M= 23.19), Central Anatolia (M= 22.58), Eastern Anatolia (M= 22.84), and Istanbul (M= 22.73), ($F_{(11, 24123)} = 7.15$, $p < .001$; $\eta^2p<0.01$), representing a small regional effect. In addition, the results of the Tukey post-hoc analysis indicated that there were statistically significant differences between the following regions: the Mediterranean and the Western Black Sea, Eastern Black Sea, Eastern Marmara, and Northeastern

Anatolia; Western Anatolia and the Western Black Sea and Central Anatolia; the Western Black Sea and Southeastern Anatolia, Central Anatolia, Eastern Central Anatolia, and Istanbul; Western Marmara and Central Anatolia; Eastern Black Sea and Central Anatolia; Eastern Marmara and Central Anatolia; the Aegean and Central Anatolia; and Northeastern Anatolia and Central Anatolia. Furthermore, the interaction between grade level and region was found to be statistically significant ($F_{(33, 24123)} = 2.84$, $p < .05$). However, the simple main effects analysis revealed that when the region variable was selected as the simple effect variable, there was a significant difference between male and female students in terms of grade level ($p < 0.05$).

Table 7. Results of Factorial ANOVA for Behavioral Adjustment Differences by Gender, Grade Level, and Statistical Regions Among Middle School Students

	Sum of Squares	df	Mean Square	F	*p*	η^2p
Gender	21134	1	21133.6	1259.771	< .001	0.050
Grade level	2598	3	866.0	51.623	< .001	0.006
Region	746	11	67.8	4.043	< .001	0.002
Gender ✻ Grade level	217	3	72.2	4.307	.005	0.001
Gender ✻ Region	408	11	37.1	2.211	.011	0.001
Grade level ✻ Region	1640	33	49.7	2.962	< .001	0.004

Interaction variables that were not statistically significant (p > .05) are not reported.

A factorial ANOVA was conducted to examine whether behavioral adjustment differed significantly based on gender, grade level, and statistical regions. The results revealed a statistically significant main effect of gender, with female students (M= 37.26) demonstrating higher behavioral adjustment than male students (M= 35.29), ($F_{(1, 24123)} = 1259.77$, $p < .05$; $\eta^2p=0.05$), representing a medium effect size. Significant differences were also found across grade levels: fifth grade (M= 36.84), sixth grade (M= 36.34), seventh grade (M= 36.13), and eighth grade (M= 35.86), ($F_{(3, 24123)} = 51.62$, $p < .05$; $\eta^2p=0.01$), with fifth graders showing the highest behavioral adjustment. This suggests grade level has a small but significant effect on behavioral adjustment. Analysis of statistical regions showed significant variation: Mediterranean (M= 36.35), Western Anatolia (M= 36.55), Western Black Sea (M= 36.16), Western Marmara (M= 36.08), Eastern Black Sea (M= 36.48), Eastern Marmara (M= 36.40), Aegean (M= 36.37), Southeastern Anatolia (M= 36.05), Northeastern Anatolia (M=36.37), Central Anatolia (M= 36.25), Eastern Anatolia (M= 36.17), and Istanbul (M= 36.07), ($F_{(11, 24123)} = 4.04$, $p < .001$; $\eta^2p<0.01$), indicating a small regional effect. In this context, it can be stated that the statistical region has a small effect on students' academic school adjustment. In addition, the results of the Tukey post-hoc analysis revealed statistically significant differences between Western Anatolia and the Western Black Sea, Western Marmara, Southeastern Anatolia, Central Anatolia, Eastern Central Anatolia, and Istanbul regions. In addition, the interactions between grade level and gender ($F_{(3, 24123)} = 4.307$, $p < .05$), gender and region ($F_{(11,24123)}= 2.211$, $p < .05$), and grade level and region ($F_{(33, 24123)} = 2.962$, $p < .05$) were found to be statistically significant. Furthermore, the simple main effects analysis showed that when the region variable was selected as the simple effect variable, a significant difference was observed across all grade levels for male students, whereas for female students, a statistically significant difference was found only at the fifth and eighth grade levels ($p < 0.05$).

Discussion and Conclusion

In this study, the school adjustment levels of secondary school students and the evaluation of students' school adjustment according to regions were carried out. At the same time, academic, social and behavioural adjustment of students were examined comprehensively. In this direction, a map of school adjustment across Türkiye was created. Within the scope of the study, the results of factorial ANOVA conducted to determine how the total school adjustment scores of secondary school students and academic, social and behavioural adjustment scores, which are the sub-dimensions of school adjustment, differ according to gender, class and regions are summarised in this section and discussed in the context of the relevant literature.

The first finding of the study was that the total school adjustment scores of secondary school students differed according to gender, and the school adjustment scores of female students were higher than those of male students. When the related literature is examined, there are studies parallel to this study (Akos & Galassi, 2004; Singh et al., 2023). When it is thought about why secondary school students have a higher level of adjustment to school on behalf of girls according to gender, it comes to mind that girls have higher perceptions of positive experiences about school (Kösem & Yirci, 2023), girls are more prone to show more prosocial behaviours than boys and get more satisfaction from school (Serna & Martínez, 2019). Therefore, this result related to gender suggests that female students need to exhibit behaviours more in line with social norms. In addition, while girls are expected to be more 'calm' and 'well-behaved' in line with cultural norms, boys' behaviours that can be described as "misbehaviour" at a certain level can be considered natural (Saygılıgil, 2019). However, this approach, which may negatively affect children's adjustment to school, may pave the way for boys to move away from the educational environment over time compared to girls.

Another sub-problem examined in this study is whether there are significant differences in the sub-dimensions of school adjustment according to the gender of secondary school students. According to the results obtained, the main effect of gender on students' academic adjustment was statistically significant between male and female students and the academic adjustment levels of female students were found to be higher. In this context, it can be said that gender has a small effect on students' academic adjustment. Considering the studies examining the relationship between academic adjustment and gender, there are studies in the literature on school engagement and gender variables, which indirectly affect academic adjustment (Mihalec-Adkins & Cooley, 2020). In the studies, it has been observed that female students report more behavioural and emotional commitment to school studies and have a higher level of academic self-concept (Brass et al., 2019), girls feel more connected to school than boys after transition to secondary school (Akos & Galassi, 2004), and female students show higher academic performance and social resilience than male students (Vera Gil, 2024). In this direction, when the results related to the higher level of academic adjustment in female students are evaluated within the scope of the research, it is seen that female students show more academic commitment compared to male students. Therefore, it can be said that academic performance is higher in female students than male students. According to the results obtained within the scope of the study, it was observed that female students had a higher level of social adjustment compared to male students. Similar results were found in various studies (Akos & Galassi, 2004; Ishimoto et al., 2022; Uz Baş, 2003). When this situation is evaluated, it is possible to mention that female students are more successful in establishing social bonds compared to male students as a result of their more sensitive behaviour towards events (Rose & Rudolph, 2006) and that gender roles may have a place in shaping individuals' personalities (Hyde, 2014). In addition to similar results, there are also studies in the literature (Crick & Zahn-Waxler, 2003; Ensar & Keskin, 2014; Lakhani et al., 2017) that there is no significant effect on social adjustment. It is thought that obtaining different results may be due to the fact that the studies were conducted in countries with different cultural elements or at different school levels. In the study, it was found that there was a significant difference in the behavioural adjustment levels of secondary school students in terms of gender and that female students had higher behavioural adjustment levels compared to male students. According to the gender variable, studies in the literature have revealed that female students

show higher behavioural adjustment compared to male students (Eccles et al., 1993; Farmer et al., 2003; Grych et al., 2000). Research has shown that female students are more motivated to comply with social norms and rules and develop more positive relationships with their teachers (Wentzel, 1993), and thus show higher compliance with social norms and rules (Herrera-Añazco et al., 2022). Similarly, there are research results in the literature that the school administration's strict rules cause non-compliance in male students (Günaydın Balta, 2015). In addition, studies with contrary results showed that girls were more sensitive to stress factors in social relationships and this situation negatively affected their behavioural adjustment (Schwartz-Mette & Smith, 2018; Potter & Yoon, 2023).

Another finding of the study is that academic, social and behavioural adjustment scores and total school adjustment scores of secondary school students show a significant difference according to grade levels. Accordingly, the academic, social and behavioural adjustment scores and total scores of school adjustment of the students attending the fifth grade are significantly higher than the other grade levels. Along with the findings obtained, it was observed that similar results were obtained in the literature (Brown & Smith, 2018; Johnson & Thompson, 2019; Martinez & Garcia, 2020). As stated in the studies, along with the developmental characteristics of secondary school students, the enthusiasm and excitement of starting a new school environment, as well as the fact that they are not yet exposed to academic and social pressures compared to students at grade level, reinforce their school adjustment processes. In contrast to similar results, studies that reached different findings from the findings obtained were observed (Elias & Haynes, 2008; Furrer & Skinner, 2003; Seidman et al., 2001). One of the main reasons for obtaining different results from these findings can be considered as cultural factors, familial factors, or different education systems. Within the scope of the findings obtained from the research, similar to the results obtained in the literature, it can be explained by the efforts made by the 5th grade students who have just transitioned from primary school to secondary school in order to get used to the new environment and adapt to the school climate. It may be possible that the expectations of the society or parents from students regarding the transition process to different education systems may differ.

When the studies on the relationship between school adjustment and grade level are considered, it is seen that there are few studies within the framework of academic adjustment, one of the sub-dimensions of school adjustment, and it is seen that the result of the research has a counterpart against the existing studies. It was observed that academic adjustment decreases from sixth grade to eighth grade (McGill et al., 2012), and fifth grade students exhibit higher behavioural and emotional engagement compared to sixth grade students (Demo & Savin-Williams, 1983). Academic adjustment involves students' behavioural and psychological changes in accordance with the expectations of the school (Valka, 2015). At the same time, academic adjustment is a process that includes the student's motivation to achieve academic goals, effort and academic satisfaction level (Rienties et al., 2012). Therefore, when the reasons why academic adjustment is higher in fifth grade students are considered, there are situations such as the fact that fifth grade students show a higher level of effort in performing the given tasks compared to sixth grade students (Brass et al., 2019), the academic difficulty level of the fifth grade is lower compared to other levels (Birch & Ladd, 1997), and the commitment they show to their teachers can turn into academic motivation (DeAngelis & Presley, 2011). Darling et al. (2005) found that extracurricular activities increase academic adjustment. Similar to this situation, it can be said that fifth grade students who have just entered secondary school have less exam stress and therefore participate in more extracurricular activities. When the relationship between social adjustment, which is another sub-dimension of school adjustment, and grade level was analysed, a statistically significant difference was found between the social adjustment levels of the students and their grade levels. In addition, it was concluded that as the grade level of the students increased, there was a decrease in their social adjustment levels. Social adjustment is the individual's ability to express himself well to the people around him and to get along and mingle with them (Erten Sarıkaya, 2020). At the same time, social adjustment is defined as having a relationship with other students with whom they interact at school above a certain level, not feeling foreign when they enter a new environment, participating in the activities carried out and achieving success by showing significant performance (Baker & Siryk,

1984). This situation can be interpreted as that younger students can use social communication skills more easily and adjust to the school environment more quickly (Eccles et al., 1993), students' social adjustment may decrease during the transition from primary to secondary school because students' social relationships and academic expectations may change (Wentzel et al., 2010), fifth grade students may be faced with less complex social and academic demands (Harter, 1999), and bullying rates increase with increasing grade level (Yazıcı, 2018), so their social adjustment may be affected by these factors. At the same time, as in academic adjustment, extracurricular activities can increase the level of social adjustment by creating an environment where adolescents can interact with their peers (Bohnert et al., 2013). The interpretation that fifth-grade students who have just entered middle school have less exam stress and therefore participate in more extracurricular activities may also be valid in this case. Contrary to similar studies, there are research results indicating that grade level does not have a significant effect on social adjustment and that students in higher grades adjust better (Wigfield et al., 2006). The fact that each school has a unique climate may mean that the social adjustment observed at grade levels may also differ. In addition, physical, emotional and social changes experienced during adolescence can be considered as an important factor that may affect students' adjustment levels (Dawes, 2017). When the relationship between the last sub-dimension, behavioural adjustment, and grade levels was examined, it was concluded that behavioural adjustment showed a significant difference according to the grade levels and the behavioural adjustment levels of the students attending the fifth grade were higher. In parallel with this, it has been observed in the literature that the frequency of negative actions increases as the grade level increases in secondary school students (Oğuz Duran et al., 2017 and that students' behavioural adjustment increases when they are in a more structured and directive system (Eccles & Wigfield, 2002; Eccles et al., 1993). The reasons for the higher behavioural adjustment of fifth grade students may be that these students have not yet been fully exposed to the rules of secondary school and the primary school period offers a more structured and directive education system. As a result, it is possible to say that the structured and supportive environment of primary school may play an important role in the high behavioural adjustment levels of fifth grade students. As a reflection of this classroom environment, the school climate perceived by students decreases as the grade level increases, which leads to a gradual decrease in behavioural adjustment (Way et al., 2007). In addition, in this study, it was concluded that statistical regions had a small effect on students' behavioural adjustment. The results of the study show that grade and gender, gender and region, and grade and region interactions are statistically significant. These findings emphasise that schools and years, even different areas and grades within the same year, are affected by many complex and interdependent factors that affect behavioural adjustment (Reich & Flanagan, 2010).

Another finding of the study is that the averages of academic adjustment dimension, social adjustment dimension, behavioural adjustment dimension and total school adjustment vary according to statistical regions. In terms of the academic adjustment dimension, it is seen that the highest average is in the Northeast Anatolia Region. It can be stated that the averages of the Mediterranean and Western Black Sea Regions are at an intermediate level compared to the regions. The lowest mean in the academic adjustment dimension is observed in the Eastern Marmara Region (Appendix 1). When the averages obtained from the social adjustment dimension are analysed, it is seen that the highest average is in the Western Black Sea Region. It can be stated that the averages of Western Anatolia and Western Marmara Regions are at an intermediate level compared to the regions. According to the findings, it is seen that the lowest average in the social adjustment dimension is in the Central Anatolia Region (Appendix 2). When the averages obtained from the behavioural adjustment dimension are examined, it is seen that the highest average is in the Western Anatolia Region. It can be stated that the averages obtained from the Mediterranean and Central Anatolia Regions are at an intermediate level according to the regions. The lowest mean was obtained from the Istanbul Region (Appendix 3). When the averages of the regions are analysed in terms of total school adjustment scores, the highest average was obtained from the Northeast Anatolia Region. Looking at the averages of the Aegean and Central Anatolia Regions, it can be stated that the averages obtained are at an intermediate level according to the regions. The lowest average was obtained from the West Marmara Region (Appendix 4). These differences can be

interpreted as a need to diversify educational policies and supportive programmes at regional level. Regional inequalities in education should be eliminated and guidance services should be increased in regions with low levels of adjustment (Eccles et al., 1993). Large-scale studies conducted across Türkiye play an important role in the development and implementation of education policies. Understanding the differences between regions is important for ensuring equal educational opportunities. Engels et al. (2001) examined the effects of equality in education and quality educational opportunities on students' academic achievement and social adjustment. This study draws attention to the importance of eliminating regional inequalities in education, providing equal educational opportunities to all students and preparing adjustment programmes according to regions. The preference for a large sample size in this study increased the reliability of the results in terms of statistical significance. This situation provides an important advantage in terms of generalisability of the findings. However, it should be taken into consideration that working with a large sample may cause small effects to be found statistically significant. This necessitates focusing not only on statistical significance but also on the magnitude and practical significance of the effects when interpreting the results. Practical significance emphasises the need to consider a wider range of effects when addressing school adjustment problems.

Limitations

The study has some limitations along with its strengths. Firstly, although the number of participants in the study was high, data were collected from 12 regions established by the Turkish Statistical Institute. Therefore, the focus of the study on certain statistical regions may not cover the entire geographical and cultural diversity throughout the country. Another limitation of the study is related to the data collection tool. The School Adjustment Scale for Secondary School Students used in this study is a self-report scale. Using self-report measures to assess school adjustment may affect the validity of responses because students may not always accurately report their experiences or feelings and because of social desirability effects. Therefore, reliance on self-reported data may lead to response biases. In this sense, in order to minimise the sample selection and measurement errors arising from the measurement tool that affect the generalisability of the study findings, it may be recommended to use more diverse data collection methods such as observation and teacher evaluations in future studies. As a third limitation, the cross-sectional nature of the data analysis method may limit the establishment of a causal relationship. In this sense, longitudinal studies on school adjustment may be recommended. Finally, while this study revealed results related to grade level, gender and geographical regions, other confounding variables such as socioeconomic status, parental involvement and school resources were not analysed. Due to the multifaceted nature of school adjustment, future research may also address the effects of these confounding variables. It should be kept in mind that the very large sample size used in this study led to strong statistical significance results. It reveals that future research should examine these differences in more depth.

Implications for Future Studies

In line with the results of the study, some suggestions were made to researchers and practitioners. Firstly, in this study, school adjustment was analysed according to geographical regions and differences were found according to regions. Based on this, researchers can examine the reasons for regional differences in school adjustment. Investigating specific cultural, economic and educational factors that vary by region may be important for evaluating targeted interventions and policies. In addition, mixed research designs can be used by adding qualitative methods such as in-depth interviews and focus group interviews to obtain a more holistic perspective on the factors affecting school adjustment. Longitudinal studies can be planned to reveal the causal relationships between variables and to determine how school adjustment changes over time. In addition to the independent variables of this study, factors such as socio-economic level, parental education level and school resources can be considered.

In this study, it may be useful to implement and evaluate specific interventions aimed at improving the school adjustment of male students, students in higher grades, and students residing in the West Marmara and Istanbul regions. Since experimental studies testing the effectiveness of different programmes or strategies can provide support on how schools can better support their students, practitioners can benefit from the results of this study and provide remedial, developmental and preventive services for individuals with low school adjustment. School administrators, teachers and school counsellors can use interventions such as learning groups, social skills training and peer counselling programmes to ensure students' behavioural and social adjustment. Handbooks on how such interventions can be implemented in schools can be prepared and educators and school administrators can be informed about the applicability of these programmes through various methods such as webinars and meetings.

In addition, since school-based interventions such as psychosocial support programmes, individual and group-based interventions can increase school adjustment, various activities can be organised in schools with low school adjustment. Since it is important to provide human resource infrastructure in the organisation of these activities, various trainings and supervision support can be provided on how to implement these programmes. At the same time, studies such as learning strategies, learning techniques and improvement of learning environments can be carried out to increase students' academic achievement and improve their understanding of the lessons. School administrators and teachers ensure the balance of male and female students in class distributions and school counselors can carry out group guidance activities to increase the adjustment of male students. Preventive and interventionist studies can be planned by taking into account the decreasing adjustment of secondary school students depending on the grade level.

Finally, support can be provided for large-scale studies across Türkiye to identify inequalities at the regional level. In line with these studies, educational policies and support programmes can be diversified at regional level and adjustment programmes can be prepared according to regions. In order to increase the applicability of these recommendations, various informative meetings can be organised to ensure cooperation between the institutions that determine educational policies and local administrations and to initiate pilot implementations. In this sense, it may be important for policy makers to provide more resources for studies to increase school adjustment in regions with lower school adjustment and to make arrangements related to school infrastructure that may affect adjustment.

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Disclosure Statement

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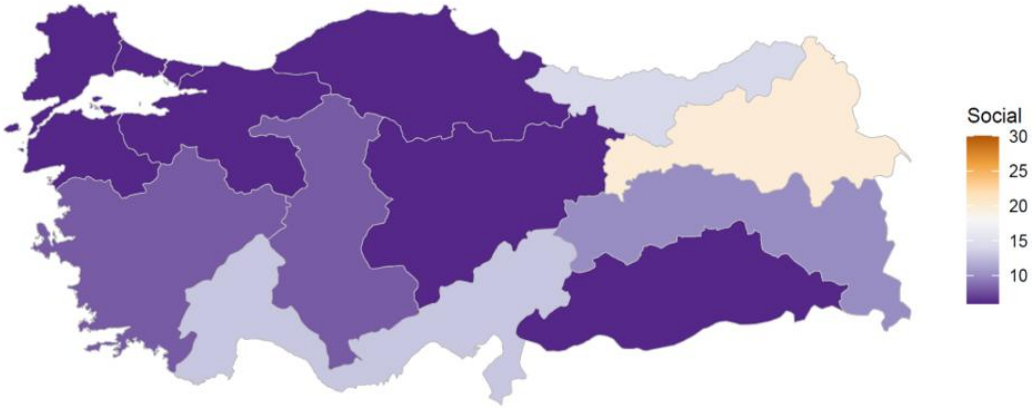
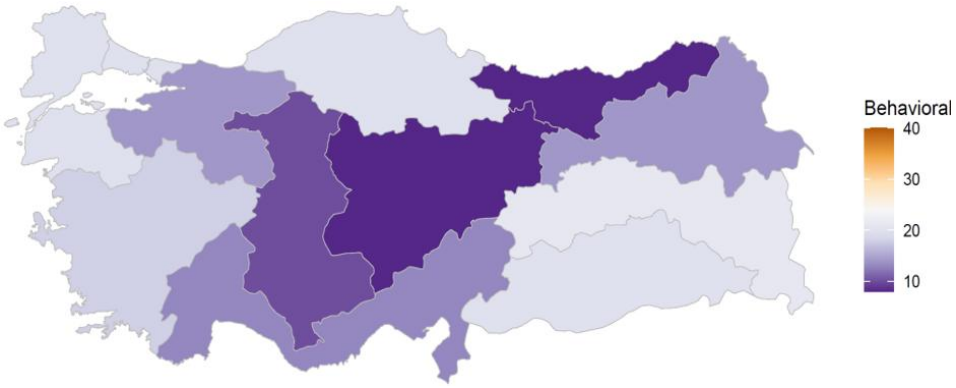
Appendix

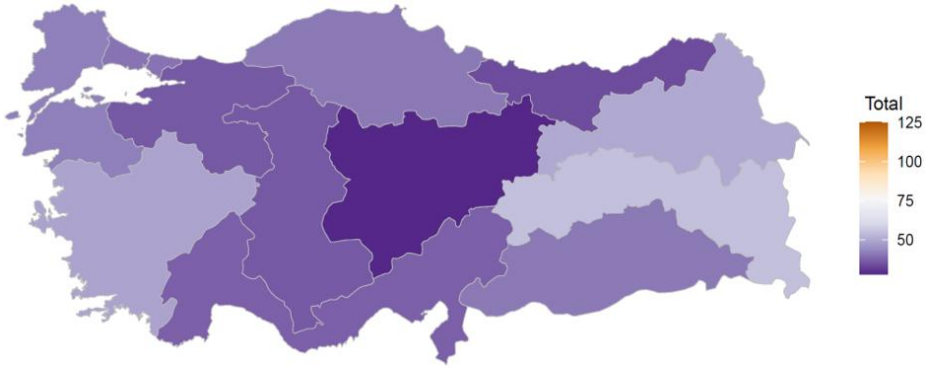
Appendix 1. Academic Adjustment of Middle School Students



Appendix 2. Social Adjustment of Middle School Students



Appendix 3. Behavioral Adjustment of Middle School Students



Appendix 4. Total School Adjustment of Middle School Students