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PARENTING STYLES AND SCHOOL SUCCESS OF ADOLESCENTS[2]

Abstract: Starting from the advanced variant of Diana Baumrind's model of parenting styles (PS) elaborated by Eleanor Maccoby and John Martin (1983), a typologically oriented research was conducted. This paper presents the results of verifying the relationship between PS as constellations of parenting procedures and school success (GPA) at the end of the school year in Serbian students. The respondents were students of all four grades from two secondary schools in South Banat (N = 282, mean age 16.9 years). Data on PS were collected using the Parenting Style Scale by Susie Lamborn et al. (1991), and on school success and relevant socio-demographic variables using a specially constructed questionnaire. Both bivariately and multivariately with control variables in analysis, the results indicate a significant positive relationship between authoritative and, to some extent, permissive PS and school success. In terms of strength and direction, the relationship is largely in line with the results obtained by other researchers in Serbia and abroad. Although respondents from authoritative and permissive families tend to have better, and those from families with neglectful PS poorer school performance than others in the sample, 4 out of 10 respondents from families with neglectful PS had excellent school success. This confirms Diana Baumrind's observation that a fairly high academic achievement, due to the influence of some other factors, is also possible with some other PS, and not only with authoritative and democratic (permissive) PS. After considering the significance of the results obtained and the limitations of the study, recommendations for further research are given.

Keywords: parenting style, school success, typological approach to conceptualizing parental behavior, adolescents.

Introduction

In the field of socialization and social development, a special subject of empirical research and theoretical consideration is parental behavior and its relationship with various aspects of the development of children and adolescents. Empirical research into parental behavior resulted in several theoretical models (Božin, 2025) of parenting styles (PS). The best known of all these models is the one based on data obtained from a complex, intensive longitudinal study and

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developed over a number of years by Diana Baumrind (Baumrind, 1967, 1971, 1991). The PS of her final basic model (Baumrind et al., 2010) corresponds to those of the model of PS that, after a thorough analysis of the dimensions of parenting obtained by previous research, were presented by Eleanor Maccoby and John Martin (Maccoby & Martin, 1983). Specifically, by crossing two dimensions of parenting - which they call demandingness and responsiveness - on their averages, the following four parenting styles are obtained: 1) authoritative - the parent is demanding and accepting; 2) authoritarian - the parent is demanding and rejecting; 3) permissive - the parent is undemanding and accepting; and 4) neglecting – the parent is undemanding and dismissive. (Maccoby & Martin, 1983; see also Božin, 2025). This cross-over raises the problem of the arbitrariness of the point of choice and thereby of "arbitrariness" of such typologies. Namely, in order to better differentiate between individual PS, some authors opt for the upper and lower thirds of the scores on these dimensions (e.g., Glasgow et al., 1997; Lamborn et al., 1991; Steinberg et al., 2006). However, two important issues still remain insufficiently resolved: a large number of unclassified individuals and the possible importance of some other dimensions of parenting that have not been given sufficient attention in previous models of PS. In general, the results of numerous studies conducted in many countries of the world, including Serbia, indicate a clear tendency for children who are brought up in an authoritative manner to manifest significantly more favorable developmental outcomes than other children, i.e., that children whose parents are neglecting ("disengaged" in Diana Baumrind's typology) show the most unfavorable developmental outcomes compared to their peers (e.g., Baumrind, 1991; Cablova et al., 2016; Lamborn et al., 2002; Pavićević & Petrović, 2020; Singh et al., 2021; Steinberg et al., 1994).

School success in terms of the grades a student receives at school is one of the developmental outcomes that are most often associated with parenting dimensions and PS (e.g., Dornbusch et al., 1987; García & Gracia, 2009; Matejević & Stojković, 2012; Pelemiš, 2017; Spera, 2005; Steinberg et al., 1991; Steinberg et al., 1994; Živković Rančić et al., 2022; see also Darling & Steinberg, 1993). As is the case with most such outcomes, authoritative PS tends to be associated with better school performance than other PS, and neglecting PS with lower performance. However, based on the extensive meta-analysis he conducted, Martin Pinquart believes that the effects of parenting styles and dimensions on academic achievement are "small or even very small in a statistical sense" (Pinquart, 2016, p. 491). At the same time, among other things, he points to the need to take (more) into account, in future research, the variables mediating between dimensions of parenting and parenting styles on the one hand and academic achievement on the other.

With a few exceptions (e.g., Matejević & Stojković, 2012; Matejević et al., 2014; Pelemiš, 2017; Živković Rančić et al., 2022), Serbian researchers choose to investigate the relationship between PS and school success much less often than would be expected, bearing in mind the relatively easy availability of data on school success. The correlations between PS and school success obtained by these authors are, in general, at the level of those reported by many authors from various countries around the world: very weak or low, in rare cases of medium strength (for more details, see Božin, 2025).

It is striking that the authors from this country (Serbia) do not tend to use a typological approach in the sense of Diana Baumrind as modified by Maccoby and Martin, or Laurence Steinberg and his associates. Namely, the attempt by Sanford Dornbusch and colleagues (Dornbusch et al., 1987) to construct indices of parenting styles starting from the frequencies of answers to questions that roughly correspond to the PS discussed by Diana Baumrind, led some authors (e.g., Buri, 1991; Robinson et al., 1995) to construct assessment scales by means of which indices of these PS are obtained. Like their colleagues all over the world, many Serbian researchers of the relationship between PS and developmental outcomes of children and adolescents make use of original (Kodžopeljić, 2009), shortened and/or modified versions of such scales. However, unlike Diana Baumrind's PS, which are *constellations* of parenting practices first classified into certain dimensions (two according to the proposal of Maccoby and Martin), the PS obtained by means of

such instruments are *continuous* variables obtained by calculating the average score for each of them on the items related to the style in question. Working with insufficiently large samples (for often understandable reasons!) and the desire to use assessments obtained from all respondents, in addition to available questionnaires for such assessment of PS, are important possible reasons for this approach by these authors.

All things considered, two questions emerged: Is there a significant relationship between certain PS as constellations of parenting procedures and school success of adolescents in some way peculiar Serbian conditions? Second, is this relationship significantly modified if certain variables with which school performance at that age is significantly related are taken into account? In order to get answers to these questions, the following hypotheses were formulated: 1) Adolescents from families in which authoritative PS is practiced tend to have significantly better school success than those from families in which neglectful PS is used; 2) The relationship between authoritative PS and school success is not significantly affected by certain control variables. The most important results of the verification of these hypotheses obtained by a wider, ("originally") typologically oriented correlational transversal research (Božin, 2025) are presented in this paper.

Method

Respondents

Bearing in mind the objectives of the broader research (Božin, 2025), the sample consisted of 282 respondents: 123 from a grammar school and 159 from an economic and commercial school in Serbian South Banat. There was a comparable number of students in the classes of all grades in those schools, while the average age of the respondents was 16.9 years. There were 165 (58.5%) female and 117 (41.5%) male students in the sample, which largely corresponds to gender structure in both schools (for more details on the structure of the sample, see Božin, 2025).

Instruments

Data were collected using three questionnaires: 1) General Questionnaire (GQ), 2) Parenting Style Scale (PSS) and 3) Connotative Meaning of Parental Styles Scale (CMPSS). This paper is based on the data obtained by applying the first two mentioned questionnaires.

General questionnaire

This questionnaire (see Božin, 2025, Appendix A) consists of 17 items intended to collect basic socio-demographic data about the respondents and their parents as well as about their school success.

Parenting Style Scale (PSS)

The PSS (see Božin, 2025, Appendix B) is a psychometric instrument developed by Suzy Lamborn and colleagues (Lamborn et al., 1991). This scale is based on an improved version of Diana Baumrind's model by Eleanor Maccoby and John Martin (Maccoby & Martin, 1983) and has two subscales each of them measuring one of the following two factors or dimensions: acceptance/commitment and strictness/control. According to the authors of PSS, acceptance/commitment as a construct is comparable to responsiveness, and strictness/monitoring to demandingness from the model of Maccoby and Martin. By combining the scores from the upper or lower third on those parenting dimensions, four "pure" parenting styles are obtained. This procedure omits parents who have scores in the middle third of the distribution of one or both dimensions and one could characterize their PS as "mixed". The PSS consists of a total of 23 items: "acceptance/commitment" is assessed with 15 items, and "strictness/supervision" with 8 items. The authors of PSS believe that with regard to the aim of their research, an instrument

that would distinguish between the parenting behavior of fathers and mothers is not necessary. Bearing in mind the broader goals of the research and the results of many earlier and more recent studies, according to which there is a considerable degree of similarity between the parenting behavior (parenting attitudes, PS) of fathers and mothers (e.g., Baumrind, 1991; Matejević & Stojković, 2012; Pavićević, 2020; Pavićević & Petrović, 2016; see, e.g., Milevsky, 2018, for a different opinion) this instrument was considered to be appropriate for this research too. PSS is primarily intended for adolescents who evaluate the parenting practices of their parents. This is a frequently used procedure because it turns out that reports given by adolescents about their parents' parenting practices have a higher correlation with "objective" assessments of that behavior than parents' own statements about their parenting practices (cf. Steinberg et al., 1994; Pinquart, 2016).

The original version of the PSS contains several items with two-point or three-point scales. For this research, those scales were replaced by more sensitive five-point scales. The modified scaling resulted in a certain increase in internal consistency: $\alpha = .86$ in this versus $\alpha = .72$ in the original version of the PSS for the warmth/commitment dimension, that is, $\alpha = .80$ in this versus $\alpha = .76$ for the strictness/monitoring dimension in the original version of the PSS (see Lamborn et al. 1991). On the whole, one can conclude that PSS is a satisfactory reliable psychometric instrument (for more details on this scale, see Božin, 2025).

Variables

The variable school success is defined as the average grade (grade point average, GPA) at the end of the previous school year. Other variables on which data were collected using the General Questionnaire are defined in the usual way, and only those that are significantly related to school success, that is, that do not lead to collinearity, are included in the analyses.
In the wider research, parenting style (PS) is defined as "interindividually variable and intraindividually relatively stable disposition for the manifestation of a certain class of parenting procedures" (Božin, 2025, p. 39). PS is a variable with the following four categories:
a) authoritarian PS: respondent's scores are in the lower third of the distribution of the variable acceptance/involvement and in the upper third of the distribution of the variable strictness/supervision;
b) authoritative PS: respondent's scores are both in the upper third of the distribution of the variable acceptance/commitment and the variable strictness/supervision;
c) permissive PS: respondent's scores are in the upper third of the distribution of the variable acceptance/commitment and in the lower third of the distribution of the variable strictness/supervision;
d) neglectful parenting style: respondent's scores are both in the lower third of the distribution of the variable acceptance/commitment and the variable strictness/supervision.

Research procedure

The research was carried out in 2023 during a total of seven working days. After obtaining the consent of the parents of the minor students at the time of the examination, a schedule of examination of the students by classes and departments was made. After the introductory remarks in which the purpose and character of the study were explained, all respondents read and signed the informed consent. Sheets with signed informed consent were collected before the beginning of filling out the questionnaires in order to avoid as much as possible the possibility of connecting respondents' names and surnames with their answers on the instruments used. The entire examination procedure lasted about 45 minutes.

Method of data processing

Data processing was carried out using several methods. First, the distributions of collected data on individual variables were analyzed i.e. frequencies and percentages, measures of central tendency (arithmetic mean and median) and variability (range and standard deviation), estimates of the shape of the distribution (Skewness and Kurtosis) were calculated. Then the hypotheses were tested using the most suitable bivariate and multivariate methods for specific data: t-tests for independent groups (Mann-Whitney U Test in case of non-homogeneity of variances), correlation coefficients and hierarchical (sequential) regression analysis. All statistical analyses were performed using the statistical package IBM SPSS Statistics (Version 23).

Research results

Table 1 shows the results obtained using the item school success classified into 6 levels or classes of that success and this classification was used in some analyses. This was done for several reasons: firstly, the usual classification of success in our school system actually represents a five-point scale, but the large number of those with all fives justifies their separation as a special class of completely excellent ones, especially if it is a way of expressing a real change in the way of grading in modern schools in this country but abroad too. In Table 1, we first notice that, at the sample level, according to that six-part classification, very good success is the most common success and that about a third of all those surveyed have such success. Let's also note that at the end of the previous school year, not a single respondent had insufficient success, that is, did not repeat the class, as well as the fact that almost every fourth student in the sample has a completely excellent while almost half of them (48.2%) have excellent or completely (absolutely) excellent school succes.

Table 2 shows the success of the surveyed students according to the PS used by their parents. From Table 2, it can be seen that the largest percentage of respondents with sufficient and good success comes from families where parents use "neglecting" PS (a total of 25.9%). Interestingly, 40.8% respondents from families with neglecting PS have excellent and completely excellent success. It can also be seen that as many as 71.4% of students brought up in a permissive manner have excellent and completely excellent success, and that no student from such families has sufficient success. There are also no students from authoritative families with sufficient success, while 63% of students such families have excellent and completely excellent results. Not a single student from a total of 15 authoritarian families has sufficient success, almost half of these students have very good success, and a total of 40% of them have excellent and completely excellent success. In this regard, the respondents from the "mixed" PS group are, as expected, somewhere between the extremes of students from the group with neglectful PS on the one hand and those with permissive and authoritative PS on the other.

Table 1: *School success at the end of the previous school year*

School success	F	%	Cumul. %
1. insufficient (one or more low grades)	0	.0	.0
2. sufficient (2.00-2.49)	8	2.9	2.9
3. good (2.50-3.49)	43	15.4	18.2
4. very good (3.50-4.49)	94	33.6	51.8
5. excellent (4.50-4.99)	66	23.6	75.4
6. absolutely excellent (5.00)	69	24.6	100.0
Total	280	100.0	100.0

Note. Frequencies (f) and percentages (%) refer to rows.

Table 2: *Parenting style and school success*

Parenting style (PS)	Success at the end of the previous school year					Total
	sufficient (2.00-2.49)	good (2.50-3.49)	very good (3.50-4.49)	excellent (4.50-4.99)	completely excellent (5.00)	
Neglectful	4 (7.4%)	10 (18.5%)	18 (33.3%)	13 (24.1%)	9 (16.7%)	54 (100.0%)
Authoritarian	0 (.0%)	2 (13.3%)	7 (46.7%)	3 (20.0%)	3 (20.0%)	15 (100.0%)
Permissive	0 (.0%)	2 (14.3%)	2 (14.3%)	5 (35.7%)	5 (35.7%)	14 (100.0%)
Authoritative	0 (.0%)	6 (11.1%)	14 (25.9%)	15 (27.8%)	19 (35.2%)	54 (100.0%)
„Mixed ”	4 (2.8%)	23 (16.1%)	53 (37.1%)	30 (21.0%)	33 (23.1%)	143 (100.0%)
Total	8 (2.9%)	43 (15.4%)	94 (33.6%)	66 (23.6%)	69 (24.6%)	280 (100.0%)

Note. Percentages (%) refer to rows.

Table 3 shows measures of central tendency (arithmetic mean and median) and variability (range and standard deviation). From the last row of Table 3, it can be seen that the average grades are in a range that closely approximates the theoretical (2.00 - 5.00) range and that "very good" is the average success of the respondents from this sample. The values of skewness (Sk = -.787; standard error: .146) and kurtosis (Ku = -.344; standard error: .290) indicate that this distribution is negatively skewed (higher scores predominate) and somewhat flattened (platykurtic). Since according to the more liberal criteria advocated by Steven West et al. (West et al., 1995; see also Kim, 2013, p. 53) according to which the value of Sk should not be > 2 and "proper" Ku > 7 this distribution of average school success scores deviates to an acceptable extent from the normal curve, further statistical analyzes can be performed with this variable using parametric methods. Hence a one-way analysis of variance (ANOVA) with PS as factor and school success at the end of the school year as dependent variable was performed. For the possibility of a more complete comparison of the results, the category "mixed" PS was also included in the analysis. The results indicate a statistically significant difference between the arithmetic means of the school success of respondents from the 4+1 category of parenting styles: $F(4,275) = 3.334$, $p = .011$, $\acute{\eta}2 = .01$.

In Table 3, we can see that the highest arithmetic mean (M) for success at the end of the school year is for those describing their parents' PS as permissive, and the lowest for those who describe their parents' style as neglectful. Let's note right away that there is practically no difference between the 3rd and 4th categories of respondents ("permissive" and "authoritative" PS). The arithmetic mean of respondents who describe their parents as authoritarian is closer to category 1 than to categories 3 and 4. However, all in all, it can be seen from Table 3 that the differences between individual categories of PS are not large, and the stated value of the statistical indicator $\acute{\eta}2$ points to a small effect size of these differences.

Table 3: *Parenting style and school success*

Parenting style (PS)	N	Success at the end of the school year (GPA)			
		Range	M	SD	Mdn
1- Neglectful	54	2.30–5.00	4.03	.81	4.06
2- Authoritarian	15	2.60–5.00	4.09	.79	4.46
3- Permissive	14	3.00–5.00	4.50	.74	4.86
4- Authoritative	54	3.05–5.00	4.48	.58	4.65

5- "Mixed"	143	2.15–5.00	4.18	.76	4.25
Total	280	2.15–5.00	4.22	.75	4.38

Applying the t-test for two independent samples to the data shown in Table 3 indicates a significant difference in success between authoritatively (M = 4.48) and authoritarianly (M = 4.09) educated students: t(69) = 2.109, p = .039. The application of the t-test also indicates a borderline significant difference in school success between those whose parents make use of a permissive (M = 4.50) and neglectful (M = 4.03) PS: t(66) = 1.972, p = .050. Since Levene's test indicates no homogeneity of variances (p < .05) in school success between students whose parents raise them in an authoritative manner and those whose parents use a neglectful PS, the Mann-Whitney U Test was applied to check whether there are significant differences in that success. The results of the application of this test show that authoritatively educated students have a significantly better school performance (Mdn = 4.65) than their colleagues whose parents use a neglectful PS (Mdn = 4.06), and that the difference in that success is of medium size: U = 958.599, p = .002, r = .30. For the same reason (p < .05 for Levene's test) the Mann-Whitney U Test was applied to check whether students brought up in an authoritative way (n_1 = 54) have significantly better success than those brought up in a way which could be labeled as "mixed" PS (n_2 = 143). The results of the application of this test show that authoritatively educated students have a significantly better school performance (Mdn = 4.65) than their colleagues whose parents apply "mixed" PS (Mdn = 4.25), but that the difference in that success is small: U = 2968,000, p = .002, r = .18. Other comparisons did not result in significant differences in GPA.

We now continue the previous analysis by taking into account the possible significant influence of certain control variables on the relationship between PS and GPA. For this purpose, the PS variable is broken into k-1 dichotomous (dummy) variables, where k is the number of categories of the original (PS) variable: 1 = neglecting PS, 0 = all others; 1 = authoritarian PS, 0 = all others; 1 = permissive PS, 0 = all others; 1 = authoritative PS, 0 = all others. The category "mixed" PS is the reference group and no separate dichotomous variable is defined for it (e.g., Chen, 2010). In this regard, we would like to point out here that we chose the category "mixed" PS as reference group, firstly, in order to have all four basic PS in the analyses, and, secondly, because this relatively large category (it refers to more than half of all respondents in the sample!) will have a small standard error, which means that the comparison of the regression coefficients of other categories with it as a reference group will be more reliable (Allison, 1999). At the same time, we would like to mention that, in this research, the category "mixed" PS actually represents what is usually designated as "others" when classifying/categorizing subjects - a category that hardly anyone will leave out of their analyzes just because of that.

The correlation coefficients between school success and parenting styles (PS) shown in Table 4 are actually point-biserial correlation coefficients, while those between PS represent φ-coefficients of correlation. However, considering that these correlations are only variants or special cases of Pearson's r-coefficient (e.g., Ferguson, 1966; Cramer & Howitt, 2004), the difference is primarily in the interpretation of those coefficients conditioned by the dichotomies of one (point-biserial correlation) or both variables (for the φ-coefficient of correlation), so we do not mark them separately. It can be seen from Table 4 that the two ways of expressing the school success (as averages and on a six-point scale) are in a very high correlation, which means that, if necessary, they can be used interchangeably. Furthermore, it can be concluded from Table 4 that respondents who perceive their parents as neglectful tend to have lower success compared to all other PS. On the contrary, students who perceive their parents as authoritative tend to have a significantly better school performance compared to all other examined students, although there are very weak but positive correlations with both ways of expressing that success. This is in line with the expectation based on the differences in the average success according to the PS (Table 3) that the neglectful PS will be to some extent negatively, and the authoritative one positively related to school success.

The other three PS are not significantly related to school success, so we did not include them in the following regression analysis. As far as the correlation between individual PS is concerned, it can be seen that only the one between "neglectful" and "authoritative" RVS is statistically significant. The negative sign of all correlation coefficients between individual PS indicates that it is an inverse relationship, which could be expected based on the fact that in all cases the number of "others" is greater than the quite different frequencies of individual PS, which affects the marginal totals in the 2x2 tables and thus the size of the φ-coefficient of correlation (Ferguson, 1966, pp. 238-239).

Table 5 shows the correlation coefficients between school success, the authoritative PS, which is significantly related to that success, and those sociodemographic (control) variables that turned out to be significantly related to school success. Therefore, we do not separately show the correlations of school success with other variables on which data were collected by the General Questionnaire. By the way, we would just like to mention that, in this sample, there is no significant correlation between school success and the assessment of one's family financial situation, the number of family members, or the grade in which the respondent goes, that is, the age of the respondents (for all these correlations p > .05).

Table 4: *Correlation coefficients between school success and parenting styles (PS)*

	Variable	1	2	3	4	5	6
1.	Success at he end of the last school year (GPA)	1.00					
2.	Success at he end of the last school year (6 categ.)	.94**	1.00				
3.	Neglectful PS	-.10	-.10	1.00			
4.	Authoritarian PS	-.01	-.01	-.10	1.00		
5.	Permissive PS	.08	.08	-.11	-.05	1.00	
6'	Authoritative P	.17**	.16**	-.23**	-.10	-.11	1.00

Note. N=280. PS were recoded as dummy variables.
*r < .05; **r < .01

Table 5: *Correlation coefficients (r) between school success, socio-demographic characteristics and authoritative parenting style* (PS)

Variable	1	2	3	4	5	6	7	8
1. Success at he end of the last school year (GPA)	1.00							
2. Sex[a]	.16**	1.00						
3. Secondary school[b]	-.40**	-.04	1.00					
4. Birth order	-.25**	.10	.26*	1.00				
5. No. of siblings[c]	-.25**	.19**	.28**	.69**	1.00			
6. Father's education	.35**	-.06	-.40**	-.25**	-.24**	1.00		
7.Mother's education	.30**	-.10	-.37**	-.25**	-.26**	.57**	1.00	
8.Authoritative PS	.17**	.08	-.10	-.04	-.00	.07	.00	1.00

Note. Depending on the completeness of the data, N=271 to 282. The authoritarian PS has been recoded as a dummy variable.
[a]1 = Male ; 2 = Female.
[b]1 = Gymnasium, 2 = Economic and commercial school
[c] Total no. of brothers and sisters.
**r < .01; *r < .05.

From Table 5, it can be seen that the school success expressed as GPA is in a relation of medium intensity with the type of high school the respondents go to (grammar school students tend to have significantly better success than their mates from the economic and commercial school). It can be seen from Table 5 that the highest correlations are between "birth order" and "total number

of brothers and sisters" as well as between "father's education" and "mother's education". Interestingly, authoritative PS is not significantly correlated with any of the six socio-demographic variables included in the analysis. Furthermore, it can be seen from Table 5 that almost all control variables are somewhat more strongly related to school success than authoritative PS. This raises the question of whether the authoritative PS significantly contributes to predicting the school success of the examinees with the block or set of those control variables in further analyses. In order to get an answer to this question, a hierarchical (sequential) regression analysis with GPA at the end of the previous school year as a criterion and authoritative PS and certain control variables as predictors was conducted. The following four variables form one set and enter the analysis in the first step or model: gender, type of high school, birth order and father's education. The variables "total number of siblings" and "mother's education" were omitted from this regression analysis due to collinearity. In the next step, the dichotomous variable authoritative PS enters the analysis. Mixed PS is, as indicated earlier in this section, a reference group. However, since only one of the differentiated dichotomous variables is included in the regression analysis, the reference group practically consists of "everyone else in the sample". Bearing in mind that all the assumptions of a regression analysis were fulfilled, in Table 6 the results of that hierarchical regression analysis are presented.

Table 6: *Hierarchical regression analysis with GPA as criterion and control variables and authoritative parenting style (PS) as predictors*

Model (Step)	R	R^2	Adjusted R^2	ΔR^2	F Change	df1	df2	Sig. F Change
1	.489[a]	.239	.228	.239	21.464	4	273	.000
2	.502[b]	.252	.238	.013	4.692	1	272	.031

Note. Dependent variable (criterion): Success at the end of the last school year (GPA)
[a]Predictors: (Constant), Sex, High school, Birth order, Father's education
[b]Predictors: (Constant), Sex, Secondary school, Birth order, Father's educational background, Authoritative PS

Since in hierarchical regression analyzes the contribution of individual variables is determined in the model (step) in which they enter the analysis, it can be seen from Table 6 that, in this model, the control variables together explain slightly less than one quarter of the variance (adjusted R^2) of GPA. The entry, in the second step, of the authoritative PS, led to an R^2 change (ΔR^2) whose value means that the explained variance of the criterion increased by 1.3% and the F of change shows that this change represents a statistically significant increase ($p < .05$).

The table with the results of the analysis of variance (ANOVA), which is not shown separately, indicates statistically significant regression equations in both the first and second steps: $F(4, 273) = 21.464$, $p < .001$ and $F(7, 272) = 18.342$, $p < .001$). This means that the hypothesis that there is no linear relationship between the independent and dependent variables (i.e. $R^2 = 0$) should be rejected (Ho, 2014, pp. 308-309).

By looking at the beta coefficients (Table 7), it can be concluded that all four control variables in the analysis contribute statistically significantly to the regression, with a positive sign for the variables "gender" and "father's education" and a negative sign for the other two ("high school" and "birth order"). Furthermore, the standardized beta coefficient (β) for the authoritative PS is significant at the .05 level and has a positive sign, which means that children whose parents use an authoritative PS tend to have significantly better school performance than all others in the sample and adjusted for the variables in analysis. Moreover, with control variables taken into account, it can be concluded that adolescents who are female, go to grammar school, have a lower birth order (including only children), whose father has a higher level of education and who are brought up by

their parents in an authoritative manner, tend to have better success at the end of the school year than their school mates.

Table 7: *Beta coefficients, their significance and collinearity data for hierarchical regression analysis, the main results of which are shown in Table 6*

MODEL (Step)						Collinearity statistics	
	B	SE B	B	t	Stat. sig.	Tole-rance	VIF
Model (Step) 1							
(Constant)	4.328	.249		17.407	.000		
Sex	.252	.081	.166	3.104	.002	.978	1.022
High school	-.423	.089	-.280	-4.735	.000	.800	1.251
Father's education	.087	.024	.215	3.679	.000	.813	1.231
Birth order	-.102	.050	-.114	-2.048	.042	.893	1.120
Model (Step) 2							
(Constant)	4.299	.247		17.380	.000		
Sex	.238	.081	.156	2.940	.004	.972	1.029
High school	-.412	.089	-.273	-4.642	.000	.797	1.254
Father's education	.085	.024	.210	3.603	.000	.811	1.233
Birth order	-.101	.050	-.113	-2.037	.043	.893	1.120
Authoritative PS	.219	.101	.114	2.166	.031	.984	1.016

Note. Dependent variable: Success at the end of the last school year (GPA). PS = Parenting style.

Discussion

The results of the research aimed at obtaining an answer to the question of whether there is, in some way peculiar Serbian conditions, a significant relationship between certain parenting styles (PS) as constellations of parenting procedures and the school success of adolescents suggest that, in general, the answer to that question is affirmative. Thus, bivariately, there are generally statistically significant differences between the respondents who described their parents' PS differently. In this sense, we have seen that students from families in which neglectful PS is applied tend to have the lowest, and those from families in which authoritative and permissive PS are used tend to have the highest GPA. This is largely consistent with the results obtained by some other authors (e.g., Baumrind, 1991; Garcia & Garcia, 2009; Lamborn et al., 1991; Pinquart, 2016). At the same time, there are statistically significant differences in school success between adolescents from authoritative and neglectful families, authoritative and authoritarian families, as well as between those from authoritative and families in which "mixed" PS is applied. In addition, the difference in school success between adolescents brought up with a permissive and a neglectful PS is marginally significant. We also saw that the differences in school success between individual categories of PS are not large and that the average values of this success for the 4+1 styles are greater than 4.00. This is not at all surprising considering the large number of excellent and "completely" excellent students in the sample. Here, we would like to recall Diana Baumrind's (1991) observation that fairly high academic achievement is possible with some PS other than authoritative and democratic ("permissive"in the terms of this paper). Table 3 shows that the upper limit of the range of GPA, according to the measures used, is 5.00 for all categories of students according to their parents' style of parenting, and this means also for those who described their parents' behavior as neglectful. To be more specific, in this sample as many as 40.8% of respondents who describe their parents' behavior as neglectful have excellent or completely excellent success at the end of the school year. In this we see the reason why the correlation between the neglecting PS and GPA at the end of the school year is not statistically significant. A partial answer to the question of why this is so is contained in the words of Laurence Steinberg and his associates about the dependence of the effects of certain PS on the environment so that "beneficial forces outside the family can offset what would otherwise be disastrous parenting" (Steinberg et al., 1995, p. 461).

We say "partial" answer because it should be borne in mind that school success contains the effects of various factors inside and outside the individual, to a considerable extent individually structured, as it can be seen from certain models of school success (e.g., Brühwiler & Helmke, 2018; Sauer & Gattringer, 1985). In this research, with an insight into fathers' education of respondents with excellent or completely excellent results who describe their parents' behavior as neglectful - and the father's education is a significant predictor of school success in this, but also according to the results of other research (Božin, 2025) - the following was found: all 6 students from families with neglectful PS whose father graduated from university have excellent or completely excellent results, and only one student, from a total of 16 families with neglectful PS in which the father has completed up to eight grades of primary school, has excellent success. Obviously, a detailed analysis of the interactions of certain determinants of school success would be the way to a thorough understanding of the empirical finding that excellent and completely excellent success at the end of the school year is possible with all the different PS. However, such analyzes without some determinants whose importance has long been well established such as, for example, intelligence and interests (Brühwiler & Helmke, 2018) or high parental expectations (Bodroški Spariosu & Duhanaj, 2024) remain necessarily incomplete.

We have seen that in our sample the highest GPA is achieved by female and male students whose parents raise them in a permissive and authoritative manner and that there is practically no difference between the school success for the two PS (Table 3). This finding is comparable to the results obtained by Fernando and Enrique Garcia (Garcia & Garcia, 2009) on a sample of Spanish adolescents, from which it can be seen that the highest average school performance is obtained by those from permissive and authoritative families and that, as in our data, there are no statistically significant differences in this performance between young people from these two categories of families. In contrast, Susie Lamborn (Lamborn et al., 1991) and colleagues found, on a sample of American adolescents, a significant difference in average school performance between male and female students from authoritative and permissive families. If our findings are confirmed in other researches with different sample structure in in this country, we can ask ourselves whether in our cultural environment, as the mentioned Spanish authors suggest for their's, strictness as a parenting practice does not have the "positive meaning" that it has in some cultures, such as the American one. Furthermore, relatively high scores on the "warmth/commitment" dimension are characteristic of both authoritative and permissive PS. This suggests that parental behavior that can be described in terms of warmth and commitment to children, when it comes to school success, is at least to some extent more important than behavior characteristic of the "strictness/supervision" dimension. Alternatively, it can be said that, under certain conditions, relatively high school success is possible even with completely different positions on the strictness/supervision dimension. In contrast to the research of the aforementioned Spanish authors, in the sample size of this research, the number of respondents who describe their parents as permissive is relatively small (n = 14), so a more appropriate check of the stated alternatives remains a task for some future, more extensive research. This is all the more significant if, in this research, with the control variables in analysis, a significant contribution to the prediction of school success at the end of the school year is made only by the authoritative PS. Let's also note that the bivariate correlations obtained between authoritative PS and school success are at the level of average correlations stated by Martin Pinkart in his meta-analysis (Pinquart, 2016). Moreover, what is very interesting, the correlation between authoritative PS and school success is numerically exactly equal (r = .17) to the average correlation stated by Pinkart.

The most important limitations of this research are primarily related to the typological approach as the third and highest level of analysis (Mandara, 2003) of the collected empirical material that was opted for. The biggest drawback of the typological approach is the fact that, depending on the selection criteria, a certain larger or smaller number of people in a given population remains unclassified (Mandara, 2003). Therefore, some desirable analyses, which require a larger number

of respondents in certain categories of the four basic PS, could not be performed, and the problem was partially "solved" by including the larger category of "mixed" PS in the analyses.

The current phase of dealing with this problem from a typological perspective certainly cannot be characterized as initial, so the absence of norms and generally accepted criteria on the basis of which the families of the respondents would be classified into certain categories of PS is also a disadvantage of this approach. Therefore, the questionnaires used to measure PS certainly do not fully meet the criteria that practitioners are usually guided by when choosing the instruments they will use in their work.

The average school succes (GPA) is the most common way of expressing educational achievement because it is, on the whole, a relatively objective, reliable and time-stable measure that seems meaningful to both students and relevant adults (teachers, parents, etc.). However, with the "inflation of grades" that has long drawn attention (e.g., Johnson, 2003, according to Richardson et al., 2012) and differences in the way of grading between individual schools and, it could be added, individual teachers from the same school, the question of the reliability and validity of that measure repetitively arises. Nevertheless, as Michelle Richardson and her colleagues point out (Richardson et al., 2012), GPA has proven to be the most useful measure of educational achievement. Therefore, as most other researchers did in the absence of a better measure, in this research it was used as a measure of one of the very important developmental outcomes during childhood and adolescence.

Using their right, 29 parents did not give consent for their minor children to participate in the research, and three more students decided not to participate at the beginning of the examination. That is more than 10% of the students from the classes in which it was planned, in the spirit of Bronfenbrenner's bioecological theory of human development, to examine all students. However, this is a problem that almost all researchers face and which often arises as a result of seeking active informed consent from minors' parents.

Conclusion

In general terms, both bivariate and multivariate, i.e. with the relevant control variables in the analysis, the results of this research indicate a significant relationship between authoritative and, to a certain extent (about which a more specific conclusion cannot be drawn due to the small number of respondents), between permissive PS and school success - a relationship that, in terms of intensity and direction, is much in line with the results obtained by other researchers here and abroad: respondents from authoritative and permissive families tend to have better, and those from neglectful families poorer school success than all the others in the sample. In addition, in this sample, 4 out of 10 respondents who describe their parents' behavior as neglectful have excellent or completely excellent school success at the end of the school year, which confirms Diana Baumrind's observation that, due to the action of some other factors, quite high academic achievement is also possible in some other, and not only in the authoritative and democratic families. However, with or without control variables in the analysis, this relationship is far weaker, according to data reported in the literature (e.g., Brühwiler & Helmke, 2018), for example than that between school performance and general intelligence or interests.

In this research, the supposition of Diana Baumrind i.e. of Eleanor Maccoby and John Martin about the significant positive impact of the authoritative PS on the school success was to a considerable extent confirmed. However, in this research, the significant negative impact of the neglectful PS on the school success as posited by the same authors was not proven to be true. In addition, the finding that excellent or even completely excellent success is possible (under certain conditions) even with a neglectful PS seems to be particularly significant since Diana Baumrind apparently did not have in mind this PS when she pointed out that high and fairly high academic achievement is also possible with other PS.

For practitioners in the field of education and upbringing, this paper provides new evidence, from an originally typological perspective, about the importance of taking into account PS as a factor that significantly affects school success. In addition, the Parenting Style Scale proved to be an easily applicable and acceptable psychometric instrument that can be recommended to school psychologists and pedagogues because it allows them to obtain relatively reliable and important information about the "emotional climate" in the families of young people they encounter in their daily work.

The fact that in the typological approach a significant number of respondents remain unclassified means that in future research, in order to have sufficient numbers of subjects in all categories of the four basic PS, the samples should be several times larger than the sample of this research. In additon to this, adolescents from other types of secondary schools should potentially be included. One would also recommend future researchers to include in their research some other significant variables such as the goals and values of parents as well as some other developmental outcomes besides school success. A big challenge in this area of research from a typological perspective remains the question of making sense of the five subcategories of "mixed" PS, perhaps following the procedure used by Diana Baumrind (see Božin, 2025) in her attempt to take into account this relatively numerous category of subjects.

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