

# A ROLE OF SIBLINGS IN PERCEPTION OF ACADEMIC SELF-EFFICACY AND SOCIAL SUPPORT

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## ABSTRACT

An educational efficiency of an individual is strongly and bidirectionally connected with his/her self-perception determined by the unique family system and overall sense of social well-being. The role of parents is obvious and both theoretically and empirically well-researched. Nevertheless, academic self-efficacy may be significantly affected also by siblings, whose role is neglected by theory and research. Our research deals with various specifics of siblings' constellations and their impact on selected dimensions of academic self-efficacy (perception of school success, efficiency, educational dispositions, and ambitions). Our findings proved differences in all observed categories (gender, family order, age-distance) and indicate relative better academic self-efficacy (compared with a sibling) by females and respondents with a brother. Similarly, higher level of academic self-efficacy was detected by older siblings and respondents with a longer age-distance between them and their siblings. Moreover, the research points out the siblings-related specifics of social support perceived from a family. Conclusions are applicable in educational theory as well as in praxis of educational counselling with an intention to support equal opportunities in education and professional development.

## KEYWORDS

**Academic self-efficacy, educational counselling, perceived social support, siblings, social determination of education**

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## Highlights

- A sibling's constellation of an individual influences his/her academic self-efficacy and slightly also perceived social support from his/her family.
- Specifics in gender, family order and in age-distance leads to differences in perceived educational success, efficiency, dispositions, and ambitions.
- Females refer about better social support from their family than males.
- Middle siblings perceive emotional support and readiness of the family to help in troubles as insufficient compared with other categories of respondents.

## INTRODUCTION

Family plays a crucial role in the psychosocial development of an individual. It is nearly impossible to find scientific arguments that would contradict this fact, representing one of the basic assumptions of developmental psychology and connected disciplines dealing with a psychological growth of a human being (Vágnerová, 2000; Langmeier and Krejčířová, 2006). A great responsibility for these processes is in the hands of parents, who ensure a huge variety of needs of their children and almost irreversibly form their personalities (Matoušek, 2003; Čáp and Mareš, 2001) including competencies for

education (Fischer and Lipovská, 2013; Lipovská and Fischer, 2016).

Very often, these socializing processes in a family have yet other actors that sometimes stay hidden or marginal to psychological and educational theories, although they significantly influence the development of a child – her brothers and/or sisters. 'Incorporating study of siblings into family research provides novel insights into the operation of families as social and socializing systems' (McHale, Updegraff and Whiteman, 2012:913). Authors of this study highlight that in the USA, a higher percentage of youth aged 18 and less lives

in a common household with a sibling than with a father (data from 2010). In contrast, these authors found 33 990 citations for a keyword 'parent or parenting' but only 741 for 'sibling and relation or relationship' in abstracts of psychological and sociological publications.

Educators, teachers, social workers, and even scientists face a confusing question: why are siblings, having both similar genetic dispositions and a socializing environment in early childhood, so different? Hetler (2017) studies this issue from a viewpoint of evolutionary biology. According to his findings, a variety of personal traits of siblings is determined biologically and is only stressed by environmental factors like siblings' constellation. This evolutionary mechanism called adaptive diversification should support the adaptability of offspring to various kinds of circumstances and prevent it from lineage extinction.

Trying to explain differences between siblings in one family from the paradigm of social determination, Jensen and McHale (2015) researched a role of social comparison (Festinger, 1954) and expectancy (Rosenthal and Jacobson, 1968) in parental attitudes towards siblings. They proved the pure influence of parental beliefs about siblings' educational abilities on their school grades which resulted in the higher academic interest of children perceived by their parents as more competent. Paradoxically, differences in parental attitudes were not caused by the grades of their children. The authors suppose that these differences are caused by everyday social comparison of their children that escalates existing small differences between siblings in their early development. In every way, parental attitudes significantly modulate the perceived level of self-efficiency of their child that influences radically an academic achievement (Pajares, 1996).

Besides variability in mutual differences of brothers and sisters, we may ask how the pure fact of having/not having a sibling influences a child's cognitive development. Dunifon, Fomby and Musick (2017) base on highly apparent fact – siblings influence each other because they spend time together. In their study, children actively spent about half of their free time with their siblings and another 20% of their time with sibling present (brothers more than sisters; siblings with an age difference within three years more than age-distant siblings). Children without a sibling spent significantly more time only with their parents and occupied less with unstructured games. In this manner, children with a sibling may seem disadvantaged for education having less time with parents and enjoying less structured activities. Nevertheless, McAlister and Peterson (2013) proved that having child-aged siblings supports the development of a theory of mind - 'a representational understanding of others' minds including abilities to comprehend and predict others' mental states of true and false belief, memory, imagination, and the like, even in situations where these mental states are at odds with observable reality' (McAlister and Peterson, 2013: 1442). The authors conclude that these kinds of metacognitive abilities (undoubtedly important for educational processes) develop easier by children with sibling thanks frequent occasion to playful interactions.

It should be noted that there are many other siblings-related influences affecting an individual's academic achievement.

Dealing with the effect of maternal age, Kalmijn and Kraaykamp (2005) proved a positive impact of this variable on children's educational attainment. However, this effect was almost three times less important than a level of parent's education. The study also examined the effect of birth-order that showed a slightly negative impact on education. Considering a mutual interconnection of the variables, the authors conclude that 'later-born children have a disadvantage which is compensated by the fact that they are born at a late age of the mother' (Kalmijn and Kraaykamp, 2005: 648). We should state that respondents of the study were the Netherlands born between 1918 and 1974; therefore, the conclusions may not be fully sociologically relevant.

The significance of birth order for a school success was researched also by Grätz (2018) in Germany. The author found that the presumed negative impact of birth order (as well as maternal age) on education is specific for socioeconomically disadvantaged families. In a logical correspondence with these findings are conclusions of Brenes-Camacho (2018) who studied relations between the number of children in family and children well-being in various developing countries. Although results vary from regions, the study generally proved that the number of children in household correlates positively with the number of working children and slightly also with a tendency to harsh discipline. The author concludes that a decline in fertility in those countries could contribute to an improvement in children's well-being.

Arising from these findings, our research deals with the role of the siblings in the academic self-efficacy of an individual. The perceived self-efficacy is a classical concept defined by Bandura (1994). It represents an individual's opinion about his/her ability to reach given goals and handle with various demands in his/her life. This concept consists from cognitive, motivational and emotional processes and simultaneously influences an individual's way of behaviour, thinking, and feeling as well as the area of self-motivation. The self-efficacy has various external sources including family-influences. 'Different family structures, as reflected in family size, birth order, and sibling constellation patterns, create different social comparisons for judging one's personal efficacy' (Bandura, 1994: 11). Obviously, siblings (as well as the fact of not-having a sibling) influence an individual's self-efficacy. In our research, we study specific influences of sibling's constellation on an education-related dimension of general self-efficacy, the academic self-efficacy (Pajares, 1996).

The objective of our pilot study (Krejčová et al., 2019) was to find if students' perceived school success, educational dispositions and career ambitions are influenced by their sibling's constellation. Despite restricted validity of our results by limited research sample ( $n=146$ ), our analysis showed that first-born siblings rated their career ambitions as higher than their siblings, while later-born siblings assigned their ambitions more often as 'comparable'. Surprisingly, the higher career ambitions perceived by first-born siblings were not accompanied by self-reflection of better educational dispositions nor higher school success compared with a sibling. In our study, we researched also the issue of siblings' age-distance, finding that respondents with a sibling in an age-

distance between 4 and 6 years rated their relative dispositions (in comparison with a sibling) worse than other groups of respondents. Nevertheless, this result was not statistically significant. With respect to certain gender imbalance of our sample (112 females and 31 males), we revealed significant gender differences: females perceived their relative school success and educational dispositions (compared with a sibling) better than males. Moreover, respondents with a brother assessed their dispositions and school assessment as better compared with respondents with a sister.

Ramos-Díaz et al. (2016) studied an influence of different dimensions of social support (family, peers, and teachers) on the school engagement of adolescents (age between 12 and 15). According to their findings, the impact of family on the school engagement was both direct and indirect via the self-concept of an individual. Interestingly, family influenced a self-concept of respondents greater than peers even in the stadium of adolescence. Authors define the self-concept as a sum of individual's perceptions about him/herself that are interpret in correspondence with his/her personal assessment influenced by important others (Ramos-Díaz et al., 2016).

According to the study of Gutiérrez et al. (2017), the perceived support of family and teachers influence positively, significantly and directly the study engagement of respondents in the age between 14 and 22 (unlike the peer support that had not the predictive capacity for school engagement). In measuring of an influence of a family, the study used only a parent's scale; consequently, siblings were not included. Obviously, their impact on the school engagement could be similar to the influence of the family; however, taking into account the age similarity between siblings, the influence of siblings could resemble the influence of peers as well.

Facing the question of social support's similarity between siblings and friends, Voorpostel and Van Der Lippe (2007) researched that by adult respondents (not living in common household with their siblings) social support of friends resembles support of siblings, especially in practical aspects. On the contrary, emotional support is generally weaker between siblings than between friends. According to the study of Gondal (2012) based on data from 25 countries, adults with fewer siblings (2 or less) tend to compensate their social supportive network with stronger ties to their parents, other relatives, and close friends. Typically, relations with parents are a source of financial and instrumental support, whereas friends represent rather a source of emotional support. Comparing with other groups, singletons reported a greater tendency to social isolation and to increase in using of professional sources of social support.

Waite et al. (2011) directed their research on the relation of siblings' mutual warmth and coping of stressful events (specifically family-wide events, respondents' personal and siblings' personal events). Based on the reports of children and youth between 9 and 18, the authors conclude that the quality of siblings' relationship serves as a protective factor by family-wide events. Nevertheless, this effect was not proved by respondents' personal stressful events or by experiencing of siblings' stressors. Interestingly, any of these results were dependent on gender. A certain gender imbalance connected

with siblings' relations was discovered by Lei et al. (2017). Their study deals with a gender-structure of siblings and its impact on education. According to their findings, being the oldest child brings educational benefits, but especially to males. The authors conclude that the educational resources of a family in China are distributed unfairly on behalf of sons. Therefore, in socioeconomically restricted families, being a girl and having a brother is a considerable disadvantage.

In our current research, we concentrate on verification of our previous findings with a bigger research sample. Moreover, we study relations of siblings' constellations and perceived social support that could influence and modulate a sense of academic self-efficacy.

## MATERIALS AND METHODS

In our cross-sectional research, we had a research sample of 600 students of the Czech University of Life Sciences Prague selected by the method of convenience sampling. Having 93 only-children, merely remaining 507 respondents were suitable for an analysis of the sibling's influence. Out of the total, 341 of our respondents have one sibling, 133 respondents have two siblings and the remaining 33 respondents are from 4 or more children families. The data were collected between February and April of 2019.

In our previous research, we concentrate only on the relation of our respondents to one of their siblings (in case of having more) because of an insufficient number of respondents from 3-and-more children families. In this study, we decided to continue in this strategy considering the robustness of our set of hypotheses.

The average age of our respondents was 20.36 years. The sample consisted of 303 females and 285 males (by 12 respondents, the information was not available). Thanks to this proportion, we disposed of a gender imbalance from the previous study with a research sample containing 112 females and 31 males.

To explore the influence of siblings on students' academic self-efficacy, we created a structured questionnaire asking for the perceived level of school success, the energy needed to study something new, perceived educational dispositions and career ambitions. Participants responded to these questions relatively, in comparison with their sibling(s).

A level of respondents' social support was assessed by the Perceived Social Support Scale (PSSS) by Blumenthal et al. (1987). The questionnaire contains 12 items (plus 4 supplementary questions) that map a level of perceived support from family, friends and from an undefined area ('there is a man who is close to me' etc.). For the purpose of this study, we used only 5 separate items that deal with a social support from family. These questions ask for perceived overall support from the family, emotional support, possibility to talk about problems, help with decision making, and a willingness of the family to help in troubles.

The outputs were produced using data analysis software system IBM SPSS Statistics, version 25. Considering the nature of our research, we used Pearson's Chi-Square test of independence in a contingency table as a tool for analysis of quantitative data,

whereas a level of significance was 5%. For the analysis of the perceived social support, we used Kruskal-Wallis analysis of variance.

## RESULTS

H0-1: *There are no gender differences in the perceived level of academic self-efficacy (in comparison with sibling/s).*

Considering gender differences, we obtain statistically significant results only in the category of perceived educational dispositions. Despite the weak significance, we can conclude that female respondents perceived their dispositions more often as ‘better’ and ‘comparable’ (in comparison with their siblings) than males, who assess their predispositions more often as ‘worse’. Table 1 summarizes our findings specifically to each sub-hypothesis.

	Dimension	Gender	Frequencies			Chi-Square test	Result	p-value
			Better	Worse	Comparable			
H0-1a	School success	Female	148	35	70	9.27	Hypothesis cannot be rejected	.16
		Male	126	57	62			
H0-1b	Efficiency	Female	73	95	85	7.09	Hypothesis cannot be rejected	.31
		Male	48	103	91			
H0-1c	Dispositions	Female	119	25	110	13.73	Hypothesis was rejected	.03
		Male	105	51	87			
H0-1d	Ambitions	Female	114	31	106	7.01	Hypothesis cannot be rejected	.32
		Male	129	22	91			

**Table 1: Gender differences in perceived level of academic self-efficacy, 2019 (source: own calculation)**

H0-2: *There are no siblings-gender differences in the perceived level of academic self-efficacy (in comparison with sibling/s).*

In this viewpoint, gender differences were more determining. We obtain medium statistical differences in all studied dimensions of academic self-efficacy (see Tab. 2). Considering a gender of studied siblings, we had 238 respondents with a sister and 268 respondents with a brother. Therefore, a possible influence of gender-imbalance is negligible. According to the descriptive measures, respondents with a brother assess themselves as more school-successful than respondents

with a sister. Respondents with a brother also assess their dispositions as better and, consequently, need less energy to study something new. We noticed significant differences also by ambitions, but the interpretation is unclear and requires further empirical validation. Although we did not analyse these results in a relation with a gender of respondents themselves, it is interesting to note that having a brother help respondents to feel more school-successful, efficient and disposed, but not as intensively more ambitious. This observation may indicate certain gender differences between the academic self-efficacy and an employment-related self-confidence.

	Dimension	Siblings' gender	Frequencies			Chi-Square test	Result	p-value
			Better	Worse	Comparable			
H0-2a	School success	Female sibling	119	51	67	581.57	Hypothesis was rejected	.00
		Male sibling	159	40	68			
H0-2b	Efficiency	Female sibling	52	96	88	554.43	Hypothesis was rejected	.00
		Male sibling	71	106	88			
H0-2c	Dispositions	Female sibling	100	39	98	571.12	Hypothesis was rejected	.00
		Male sibling	127	38	101			
H0-2d	Ambitions	Female sibling	116	22	97	532.22	Hypothesis was rejected	.00
		Male sibling	129	32	102			

**Table 2: Siblings' gender differences in perceived level of academic self-efficacy, 2019 (source: own calculation)**

H0-3: *The family order does not influence the perceived level of academic self-efficacy (in comparison with sibling/s).*

Similarly to the previous hypothesis, we found medium-significant differences between respondents with different family-order by all dimensions (see Table 3). Based on findings of descriptive statistic, we may assume that first-born children assess themselves more often as more successful at school while youngest children feel more often less successful than their sibling (compared with other categories). By the question about the energy needed to

study something new, the first children chose a possibility 'less' than a sibling apparently more than other possibilities. The youngest children were the only category by which the most frequent response was not 'less' but 'comparable' with a sibling. All respondents assess their ambitions as higher than a sibling; anyway, the dominance of this response was most remarkable by the first children. The overall superiority of the first-born children may be slightly influenced by the status of a university student that has not been reached by their siblings yet because of their younger age.

	Dimension	Family order	Frequencies			Chi-Square test	Result	p-value
			Better	Worse	Comparable			
H0-3a	School success	First-born sibling	151	19	49	616.71	Hypothesis was rejected	.00
		Youngest sibling	84	52	67			
H0-3b	Efficiency	First-born sibling	51	96	71	555.07	Hypothesis was rejected	.00
		Youngest sibling	52	69	80			
H0-3c	Dispositions	First-born sibling	110	28	81	576.19	Hypothesis was rejected	.00
		Youngest sibling	72	37	93			
H0-3d	Ambitions	First-born sibling	108	13	95	552.76	Hypothesis was rejected	.00
		Youngest sibling	93	27	83			

**Table 3: Family order-related differences in perceived level of academic self-efficacy, 2019 (source: own calculation)**

H0-4: *The age difference between siblings does not influence the perceived level of academic self-efficacy (in comparison with sibling/s).*

Comparably as by siblings' gender and family order, we found medium-significant differences (see Tab. 4) between 3 categories of age distance (a between-siblings' distance up to 3 years, between 4-6 years and more than 7 years). All categories assess themselves as more successful than their siblings; however, this dominance is relatively less by the first category of smallest age-distance. Analogically, all respondents need less energy to study something new than their siblings, but this possibility dominates less by the first category. This tendency was similar also by the perception of educational dispositions. All categories perceived themselves as better than siblings; by the first category, the relative difference between this and other responses is less. Similarly, all respondents assess themselves as more ambitious; however, relatively smallest dominance of this response appears by the middle category (age difference between 4-6 years). These differences may be caused by the fact that less age-distant siblings are in a similar phase of their educational trajectory. Therefore, they may have a more realistic base for the comparison (except the questions of ambitions that requires further empirical analysis).

H0-5: *There are no gender differences in the perceived social support from the family.*

From the viewpoint of respondents' gender, we found

differences in all the studied dimensions of family-related social support. According to the results of Kruskal-Wallis analysis of variance (see Table 5), female respondents perceive more overall and specifically emotional support from their families, they refer to the better possibility to talk about problems, help with decision making and a willingness of the family to help in troubles.

H0-6: *There are no siblings-gender differences in the perceived social support from the family.*

Although we found significant differences between categories of respondents with brothers vs. respondents with sisters considering the academic self-efficacy, we did not obtain differences related to perceived social support. The hypothesis cannot be rejected.

H0-7: *The family order does not influence the perceived social support from the family.*

By this hypothesis, there are significant differences between categories of respondents with different family order, specifically in items of emotional support and willingness of the family to help in troubles (see Table 6). The middle siblings perceive this form of social support as insufficient, in contrary with all the other siblings' constellation. Although this statement requires further validation with broader research sample, it seems to be in a correspondence with a concept of 'sandwich' middle siblings that generally perceive less attention of their parents in comparison with both first- and last-born children.

	Dimension	Age-distance Better	Frequencies			Chi-Square test	Result	p-value
			Worse	Comparable	Better			
H0-4a	School success	< 3 yrs.	85	27	41	570.71	Hypothesis was rejected	.00
		4 – 6 yrs.	96	37	50			
		> 7 yrs.	97	30	44			
H0-4b	Efficiency	< 3 yrs.	47	56	51	554.62	Hypothesis was rejected	.00
		4 – 6 yrs.	41	73	68			
		> 7 yrs.	36	73	59			
H0-4c	Dispositions	< 3 yrs.	63	29	62	566.44	Hypothesis was rejected	.00
		4 – 6 yrs.	84	28	71			
		> 7 yrs.	80	21	68			
H0-4d	Ambitions	< 3 yrs.	73	19	60	538.08	Hypothesis was rejected	.00
		4 – 6 yrs.	86	18	79			
		> 7 yrs.	87	18	62			

**Table 4: Age-distance related differences in perceived level of academic self-efficacy, 2019 (source: own calculation)**

	Dimension	Min	Max	Gender	Mean	Std. Dev.	Std. Error Mean	Result	p-value
H0-5a	Overall support	0	7	Female	6.21	1.28	.07	Hypothesis was rejected	.01
				Male	6.17	1.11	.07		
H0-5b	Emotional support	0	7	Female	5.99	1.40	.08	Hypothesis was rejected	.00
				Male	5.69	1.44	.09		
H0-5c	Talking about problems	0	7	Female	5.53	1.60	.09	Hypothesis was rejected	.02
				Male	5.26	1.63	.10		
H0-5d	Help with decision making	0	7	Female	5.58	1.50	.08	Hypothesis was rejected	.02
				Male	5.24	1.65	.10		
H0-5e	Help in troubles	0	7	Female	6.26	1.30	.08	Hypothesis was rejected	.03
				Male	6.18	1.12	.07		

**Table 5: Gender differences in perceived social support, 2019 (source: own calculation)**

	Dimension	Min	Max	Family order	Mean	Std. Dev.	Std. Error Mean	Result	p-value
H0-7a	Overall support	0	7	First-born sibling	6.09	1.28	.09	Hypothesis cannot be rejected	.05
				Youngest sibling	6.32	1.03	.07		
H0-7b	Emotional support	0	7	First-born sibling	5.65	1.52	.10	Hypothesis was rejected	.04
				Youngest sibling	6.03	1.28	.09		
H0-7c	Talking about problems	0	7	First-born sibling	5.31	1.63	.11	Hypothesis cannot be rejected	.38
				Youngest sibling	5.46	1.53	.11		
H0-7d	Help with decision making	0	7	First-born sibling	5.31	1.57	.11	Hypothesis cannot be rejected	.14
				Youngest sibling	5.46	1.53	.11		
H0-7e	Help in troubles	0	7	First-born sibling	6.14	1.21	.08	Hypothesis was rejected	.02
				Youngest sibling	6.40	1.04	.07		

**Table 6: Family order-related differences in perceived social support, 2019 (source: own calculation)**

H0-8: *The age difference between siblings does not influence the perceived social support from the family.*

We found no statistically significant differences regarding this presumption; the hypothesis cannot be rejected.

## DISCUSSION

Compared with our previous study (Krejčová et al., 2019), we worked with another, broader research sample and dealt not only with dimensions of the academic self-efficacy, but with the perceived social support as well. In the current research, we found fewer gender differences between respondents. While female respondents had assessed themselves as more school-successful and better educationally disposed in the previous study, the broader research revealed female dominance only in educational dispositions.

On the other hand, we found more siblings-related gender differences. In the previous study, respondents with a brother had assessed their dispositions and school success as better compared with respondents with a sister. The current research proved differences between respondents with brothers and sisters in all observed dimensions of academic self-efficacy. Generally speaking, the differences point out on the stronger perceived academic self-efficiency (relatively compared with a sibling) by respondents with a brother. These findings seem to correspond with a meta-analytical study of Voyer and Voyer (2014) which confirms an overall superiority of females in school marks. This statement agrees with a stereotype about better school assessment by girls that is broadly extended. In the light of findings of Jensen and McHale (2015), we should consider that the existence of this stereotype may influence parental expectations and therefore reinforce these gender differences in education, especially in the academic self-efficacy and, consequently, in the school assessment as well.

Moreover, our research revealed more differences between respondents with a different family order and age-distance in comparison with the previous study that had found differences only in the career ambitions of first-born children, assessed more frequently as 'higher' compared with a sibling. The level of perceived school success, educational disposition and needed energy invested in learning had been not different (in terms of statistical significance) from later-born children. Current research proved statistically significant family order-related differences in all observed dimension of the academic self-efficacy. Based on descriptive analysis, the data indicate the dominance of first-born children in perceived school success, efficiency, and educational dispositions as well as in ambitions. Moreover, our current research pointed out on the role of age-distance in siblings' constellations (compared with previous research complicated by a limited number of respondents). However, these differences require further empirical analysis because in case of younger siblings, better academic self-efficacy by more distant siblings may be caused by the fact that these siblings are too young for serious comparison.

The role of family-order in education is an objective of both scientific research and a stereotyping. Kalmijn and Kraaykamp (2005) proved a slightly negative impact of birth-order on education. On the contrary, a metanalytical study of Steelman

(1985) questions the perceived superiority of the firstborn child, because the possible advantage of his position consists of non-shared socioeconomic resources of the family. However, Steelman (1985: 381-382) points out that 'the general tendency for families to move upward in economic standing by the time later-born children arrive may counteract this initial advantage'. Our research points out also on differences in perceiving of social support. Because of the nature of our variables, we did not analyse a relationship between total scores from both questionnaires. However, we presumed a positive dependence between the social support and the academic self-efficacy, because a family-influence is one of the important sources of the self-efficacy in general (Bandura, 1994). We revealed gender-related differences in all studied dimensions of family-related social support (overall support from the family, emotional support, a possibility to talk about problems, help with decision making and a willingness of the family to help in troubles) perceived more by females. This observation is in a contradiction with a conclusion of Waite et al. (2011). According to their study, the quality of siblings' relationship serves as a protective factor by family-wide events but not by personal stressful events nor by experiencing of siblings' stressors. Interestingly, they found any gender-dependency of the results. This difference from our study may be caused by another objective, methodology and also by age specifics because the cited study dealt with children and youth between 9 and 18.

Based on interpretation of both parts of our research, we may conclude certain superiority of female respondents in perceiving of both stronger academic self-efficacy compared with a sibling and better social support from their family. Although this statement requires further empirical verification, it is in correspondence with findings of Gutiérrez et al. (2017) who stated that the perceived support of family and teachers influence positively, significantly and directly the study engagement of respondents.

In analysis of siblings-related factors of perceived social support from the family, we noticed certain inferiority of middle siblings. This finding requires further empirical analysis, because our research sample contains only 63 middle children. However, it is in a great correspondence with a study of Salmon (2003) that revealed fewer positive attitudes toward their family and more positive views toward their friends by middle siblings compared with both first- and last-born children. The author explains this finding in a light of a weaker perceived parental investment by the middle children. Interestingly, the study of Salmon, Cuthbertson and Figueredo (2016) refers about a moderately positive impact of the family order on a prosociality, whereas the greater increase in prosocial measures was observed between the first- and second-born children.

In the interpretation of our findings, it is necessary to consider their restricted ecological validity, because they are plausible only for students of the Czech University of Life Sciences Prague. The internal validity enables their application in counselling services and in support of students' personal growth at this institution, especially in the Career Centre at the Faculty of Economics and Management. The external validity

of the research is limited; however, our findings bring stimuli for further research at other universities and even in different educational institutions.

The next factor that may limit the validity of our findings is the inclusion of half-blood related siblings into the research sample. This factor limits biological interpretations based on shared genetic equipment. Nevertheless, we decided to include the half-blood siblings in correspondence with a statement of Steelman (1985: 355): ‘since most social scientists espouse environmental rather than physiological interpretations of the impact of sibling structure, the usual decision is to include any living children present in the household, blood-related or not’. Moreover, our study limits itself to the ‘smaller families’ with two children. Respondents from 3-and-more children families are included, but we assessed only their relations to one of their siblings (the first one they mentioned in the questionnaire, usually the older one). This fact may limit the plausibility of our findings because we extracted only certain elements from the comprehensive system, which a family undoubtedly is (McHale, Updegraff and Whiteman, 2012). This fact may be restrictive for possible cross-culture interpretations, because the Czech Republic belongs to countries with a considerable dominance of 2-children families, as we may induce e.g. from the international comparative study by Gondal (2012) with a research sample of 32,712 respondents from 25 countries using selective methods of random or multistage selective choice.

## CONCLUSION

Primary socialization radically determines the educational and career trajectory of an individual. Therefore, the influence

of parents was the subject of many theoretical studies. Despite their undeniable importance, formal education may be significantly influenced also by siblings. Expectably, this influence is observable in the development of social skills (Vágnerová, 2000). Nevertheless, our research shows that siblings’ constellation may affect also the academic self-efficacy, specifically a perceived level of school success, efficiency, educational dispositions, and career ambitions.

Although our findings are plausible only for the population of students of Czech University of Life Sciences Prague and their broader generalization requires further research with a more heterogeneous sample, they may be fruitful for the area of the university counselling services and for overall support of students’ personal and professional growth. Further research should deal with other differences of siblings’ constellations, namely the number of siblings as a categorization variable with special attention to specifics of only-children, twins, and respondents with more than two siblings. Moreover, we would like to study in a more detail a relationship between the academic self-efficacy and the social support by siblings. Nevertheless, the conclusions of our current study themselves emphasize the need to study both self-efficacy and social support as crucial factors of study-engagement in a context of siblings’ constellation and family dynamics.

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