

THE INFLUENCE OF FAMILY SOCIOECONOMIC STATUS ON STUDENTS' SELF-BELIEFS IN LARGE SCALE STUDIES

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ABSTRACT

The prolonged pandemic situation that left its damaging footprints not only in global economy but in many families, struggling with options to maintain their pre-pandemic income levels and social status, has raised the issue about the impact of family socioeconomic status (SES) on child's personality, especially self-beliefs. It has been previously studied that SES has a significant impact on child's academic achievement. Inherited social status has been the subject of studies for many years, and some researchers argue that it is rooted in the child's self-beliefs. The aim of this article is to examine the impact of family SES factors. The research question for this study is as follows: does family SES impact significantly primary school students' academic self-beliefs?

To evaluate the significance of factor impact, the authors used linear regression models where the dependent variable was students' self-beliefs, but family SES and students' achievement were the independent variables. The authors analysed the students' questionnaire data collected from such studies as the International Association's for the Evaluation of Educational Achievement (IEA) Progress in International Reading Literacy Study (PIRLS) 2016, Trends in International Mathematics and Science Study (TIMSS) 2019, International Civic and Citizenship Education Study (ICCS) 2016 and OECD Programme for International Student Assessment (PISA) 2018. In particular, the students' questionnaire data from countries around the Baltic Sea were explored.

The results of this study demonstrated a small but significant impact of family SES on the child's self-perception. If SES was analysed in linear regression models together with achievement, the models explained variations from 16–25% for academic self-concept in reading, 14–27% for academic self-concept in Mathematics, 3–13% for academic self-concept in Science of Grade 4 students, and 1–7% of variation for Grade 8 students' self-efficacy in citizenship, 10–18% of variation for 15 year old students' academic self-concept in reading, 2–7% for academic self-concept in finance, and 6–12% of 15 year old students' global self-efficacy.

Keywords: *large scale assessment, PISA, ICCS, TIMSS, PIRLS, academic self-perception, self-efficacy, academic self-concept.*

Introduction

Although it is widely discussed and in the Western culture well understood that public education should be equally accessible for every child regardless of his/her socioeconomic background, race, ethnicity, religion and other family factors, since 2016 the UNESCO global education reports alarm that children from lower socioeconomic backgrounds worldwide would more likely not attend school or fail to finish primary education more often than children from economically advanced families (UNESCO, 2016; UNESCO, 2017). Although the society support for public (i. e., a state or local government provided) education is strong, the UNESCO acknowledges that it is not for free (every kind of education requires some resources from family to be invested), and there are variety of reasons why increasing number of parents decide to educate their children at private institutions (UNESCO, 2021). As education equity being one of the goals of sustainable development in Education 2030 Declaration (UNESCO, 2015), the Organisation for Economic Co-operation and Development (OECD) Programme for International Student Assessment (PISA) defines educational equity as ability for all students to obtain similar levels of academic performance, non-cognitive skills and social-emotional well-being including self-confidence despite of their socioeconomical background (OECD, 2018). Meanwhile, the Covid-19 pandemic has left its footprints not only in global economies, but in family budgets as well, making parents to struggle to maintain their pre-pandemic income levels; and in schools making educators to struggle for getting children back to regular school settings. While performance-based factors like student's/school's academic achievement will prevail as measurement of educational quality and efficacy, the debate about family SES will be relevant.

Socioeconomic status

There are several definitions of socioeconomic status (SES) or social class but simplifying them one can say that the SES is a position (stratified or perceived) of one's (individuals or groups) wealth (material and non-material), prestige and power (APA, 2007; Diemer et al., 2013; APA, 2018; Rice University, 2021). SES includes resources (material and non-material, and time) that one has access to (Cowan et al., 2012). The scale of measuring socioeconomic status differs from study to study (Powers, 2021), but for educational studies it is recommended to include "the big 3" (Cowan et al., 2012): 1) parental education (converted in the International Standard Classification of Education (ISCED) levels), 2) parental occupation (classified in International Standard Classification of Occupations (ISCO-08) and then converted in International Socioeconomic Index of Occupational

Status (ISEI) as described by Ganzeboom, 2010), and 3) indicators of family possessions from which the number of the printed books at home are very widely used (when searching Google Scholar with key words “«socioeconomic» OR «socio economic» status «books at home» school achievement”, more than 2500 articles were found issued in last four years). Despite critique of the validity of these scales (Engzell, 2021), American Psychological Association (APA, 2007) states that these three indicators provide different dimensions of possible social stratification. Some studies include the number of family members and family income levels, but some studies (e. g. OECD PISA) use ESCS (Index of Economic, Social and Cultural Status) instead of “three item SES”, as this index allows to analyse SES with “gradient approach” (APA, 2007) and includes description of more resources an individual has access to in comparison with just an educational level and occupation (Aavisati, 2020).

International large scale comparative studies use both student’s and school’s SES in order to explain the variation of learning outcomes such as achievement (Mullis et al., 2017; Mullis et al., 2020; Hoskins et al., 2021; Finch & Finch, 2022). Association for the Evaluation of Educational Achievement (IEA) analyses SES as opportunity (Broer et al., 2019), i. e., students with lower SES backgrounds have less opportunities than those from higher SES backgrounds, thus introducing the term “gap”. Due to SES, the gap in achievement has been well studied in international large-scale assessments and documented as significant (Eriksson et al., 2021; Mullis et al., 2017; Mullis et al. 2020; OECD, 2020) and increasing (Harwell et al., 2017; Chmielewski, 2019), although the increase in SES gaps can be explained with expanding accessibility for education of those society groups that have been outside education. APA Task Force on Socioeconomic Factor (APA, 2007) states that SES determines human functioning lifelong. Besides, there exists studies that associate SES with quality of life inherited from parents (Krapohl & Plomin, 2016) and by the age of 15 the economical gap has already developed (Filippin & Paccagnella, 2011). Nonetheless, Kim and colleagues (2019) argue in their meta-analysis study that SES has a significant impact not only on educational achievement but on educational attainment as such. Letourneau and colleagues (2013) and Korous and Causadias (2022) have come to conclusion that family SES has a small but significant impact on child’s development when excluding a combination of such factors as individual, family or community. Meanwhile, the number of studies that describe family SES relationships with child’s academic self-beliefs in particular are significantly lower, some of them are conducted recently (OECD, 2015; Chevalere et al., 2022) but some are fairly old (Trowbridge, 1972). The findings of these two studies contradict each other; however, both emphasize the necessity to do more

research as the relationship between SES and self-beliefs are not yet unambiguously explained.

Academic self-beliefs

The concept of self-belief is broadly used and explained in various domains across psychology and other social sciences. One can find self-belief defined in the context of self-perception (Haasi & Laursen, 2015) or in the context of student agency (Jääskelä et al., 2017), others define this term as self-concept (Marsh & Craven, 2006), self-efficacy (Bandura, 2001), self-esteem (Branden, 2011) or confidence (Stankov et al., 2012). Some researchers have tried to distinguish the difference between them all (Leary et al., 2013), but mostly all scholars state that these self-beliefs can either strengthen or weaken development, academic choices and lifelong learning.

Likewise, the studies about SES and academic achievement relationships, there are many studies about students' academic self-beliefs and achievement (Marsh & Craven, 2006; Valentine et al., 2004), which state that these concepts have reciprocal effects.

Research motivation

The aim of this article is to examine the impact of family SES factors. The research question for this study is as follows: does family SES impact significantly primary school students' academic self-beliefs?

Methodology

In order to get more detailed view of the children's self-beliefs and the impact of family SES during primary school years, the data from four studies have been analysed. Two studies were conducted at the 4th grade (IEA PIRLS-2016, IEA TIMSS-2019), one study examined 8th graders (IEA ICCS-2016) and one – 15-year-olds¹ (OECD PISA-2018).

The PIRLS stands for "The Progress in International Reading Literacy Study" it takes place every five years, and its primary purpose is to measure 4th grade student reading achievement. The TIMSS stands for "The Trends in International Mathematics and Science Study", it takes place every four years, and its primary purpose is to measure 4th grade and 8th grade student achievement in Mathematics and Science. In Latvia, this study in 2019 was conducted only at the 4th grade and for the purpose of this study, only 4th grade students were examined. The ICCS stands for "The International Civic and

¹ By 15-year-olds in OECD PISA study and in this paper the authors mean students who are enrolled in school and have completed at least 6 years of formal education and are between the age of 15 years 3 months and 16 years 2 months at the time of the PISA assessment (OECD, 2018).

Citizenship Education Study” it takes place every five years, and it measures young citizens’ civic knowledge and attitudes. All these three studies are conducted by International Association for the Evaluation of Educational Achievement (IEA). PISA stands for “Programme for International Student Assessment”, it takes place every three years and participation is compulsory for all OECD (Organisation for Economic Co-operation and Development) countries. All studies consist of two main parts: the knowledge test and the questionnaires. TIMSS-2019 and PIRLS-2016 studies had questionnaires for both – students and parents, whereas ICCS-2016 and PISA-2018 had questionnaires for students only.

Data from Latvia, Lithuania, Poland, Germany, Denmark, Sweden, Finland and the Russian Federation were chosen for comparison. Sample size in TIMSS-2019 was 32’485 students, in PIRLS-2016 was 34’352 students and in ICCS-2016 was 28’286 students; Poland did not participate in ICCS-2016, and Germany participated only with North-Rhine Westphalia region. Poland, Finland, Denmark, Germany, and Sweden did not participate in PISA-2018 Global Competence module, and the sample size of this data set was 32’148 students. The Russian Federation did not participate in PISA-2018 Reading Self-Efficacy module and the sample size of this data set was 44’116 students. Denmark, Germany, and Sweden did not participate in PISA-2018 Financial Self-efficacy Module and the sample size of this data set was 22’141 students. In all studies all the data were weighted and represented the whole nation.

SES measurement scales

In PIRLS-2016 and TIMSS-2019, the family SES was measured with a “Home Resources for Learning Scale” that was created from the following questions:

1) Parental questionnaire questions:

- About how many children’s books are there in your home?
- What is the highest level of education completed by the child’s mother/father?
- What kind of work do the child’s father and mother do for their main jobs?

For the purpose of the scale all options were summarized and coded as follows: number of children’s books at home: 0–10 (1 point), 11–25 (2 points), 26–50 (3 points), 51–100 (4 points), 101 and more (5 points); highest level of parental education of either parent(s): “Finished some primary or lower secondary or did not go to school” (1 point), “Finished lower secondary” (2 points), “Finished upper secondary” (3 points), “Finished post-secondary education” (4 points), “Finished university of higher” (5 points); highest level of occupation of either parent(s): ? “Has never worked outside home for

pay, general labourer, or semi-professional” (1 point), “Clerical” (2 points), “Small business owner” (3 points), “Professional” (4 points).

2) Student questionnaire questions:

- About how many books are there in your home?
- Do you have any of these things at your home?

For the purpose of the scale all options were summarized and coded as follows: number of books at home: 0–10 (1 point), 11–25 (2 points), 26–100 (3 points), 101–200 (4 points), 201 or more (5 points); number of home study supports: “None” (0 points), “Your own room” or “Internet connection” (1 point), “Your own room” and “Internet connection” (2 points).

The scales were continuous, and the Cronbach’s Alpha Reliability Coefficient values for the countries of comparison varied between 0.63 to 0.72 for TIMSS-2019 and from 0.64 to 0.74 for PIRLS-2016.

In ICCS-2016 the SES scale was called “National Index of Students’ Socioeconomic Background”, it was constructed from three other scales for students’ questionnaire:

- Highest occupational status of parents – constructed from a question “What is your father’s/mother’s or <male/female guardian>’s main <job>?”
- Highest educational level of parents – constructed from a question “What is the highest level of education completed by your father/mother or <male/female guardian>?”
- The number of books at home – constructed from a question “About how many books are there in your home?”

For the purpose of the scale all options were coded as follows: highest occupational status of parents: coded according to ISEI – ISCO-08 scale corresponding values; highest educational level of parents: “ISCED level 6, 7 or 8” (4 points), “ISCED level 4 or 5” (3 points), “ISCED level 3” (2 points), “ISCED level 2” (1 point), he/she did not complete “ISCED level 2” (0 points); the number of books at home: 0–10 (0 points), 11–25 (1 point), 26–100 (2 points), 101–200 (3 points), 201 and more (4 points).

The scale was continuous and the Cronbach’s Alpha Reliability Coefficient values for the countries of comparison varied between 0.7 and 0.84, with ICCS-2016 average value of 0.81.

In PISA-2018 the family SES scale was composed from three indices – highest parental education (none, ISCED levels from 1 to 5 (including A and B separately)), highest parental occupation (like in ICCS-2016, coded in ISEI – ISCO-08 scale corresponding values), and home and cultural possessions. The scale was called “Index of Economic, Social and Cultural Status”. The Home and Cultural Possessions Index was composed from three questions in students’ questionnaire:

- “Which of the following are in your home?” with 16 dichotomously coded options.
- “How many of these are there at your home?” with 8 options measured in amount of “None”, “One”, “Two”, “Three or more”.
- “How many books are there in your home?”, with options: 0–10 books (1 point), 11–25 (2 points), 26–100 (3 points), 101–200 (4 points), 201–500 (5 points), 501 or more (6 points).

The scale was continuous, and the Cronbach’s Alpha Reliability Coefficient values were from 0.59–0.69.

Self-belief measurement scales

In PIRLS-2016 study, the students’ self-beliefs in the reading literacy were measured by Students Confident in Reading Scale. The scale was composed from a question “How well do you read? Tell how much you agree with each of these statements?” of the students’ questionnaire. The statements were as follows:

- I usually do well in reading
- Reading is easy for me
- I have trouble reading stories with difficult words (Reverse coded)
- Reading is harder for me than for many of my classmates (Reverse coded)
- Reading is harder for me than any other subject (Reverse coded)
- I am just not good at reading (Reverse coded)

All statements were measured in the Likert-type scale where “Agree a lot” got 1 point, “Agree a little” – 2 points, “Disagree a little” – 3 points and “Disagree a lot” – 4 points. If the statement was reverse coded, then “Agree a lot” got 4 points and “Disagree a lot” – 1 point respectively.

Both scales were continuous, the Cronbach’s Alpha Reliability Coefficient values were from 0.79 to 0.83.

In TIMSS-2019 study, the students’ self-beliefs in the Mathematics/ Science were measured by Students Confident in Mathematics/Science Scales. These scales were composed from a question “How much do you agree with these statements about <Mathematics/Science>?” followed by these statements:

- I usually do well in <Mathematics/Science>
- <Mathematics/Science> is more difficult for me than for many of my classmates (Reverse coded)
- <Mathematics/Science> is not one of my strengths (Reverse coded)
- I learn things quickly in <Mathematics/Science>
- My teacher tells me I am good at <Mathematics/Science>
- <Mathematics/Science> is harder for me than any other subject (Reverse coded)

- <Mathematics/Science> makes me confused (Reverse coded)
- I am good at working out difficult Mathematics problems
- Mathematics makes me nervous (Reverse coded)

All statements were measured in the Likert-type scale where “Agree a lot” got 1 point, “Agree a little” – 2 points, “Disagree a little” – 3 points and “Disagree a lot” – 4 points. If the statement was reverse coded, then “Agree a lot” got 4 points and “Disagree a lot” – 1 point respectively.

Both scales were continuous, and the Cronbach’s Alpha Reliability Coefficient values for countries of comparison were from 0.86 to 0.9 for Mathematics and from 0.8 to 0.86 for Science.

In the ICCS-2016 students’ self-beliefs were measured with “Students’ Sense of Citizenship Self-Efficacy” Scale that was constructed from a question “How well do you think you would do the following activities?” and the following statements:

- “Discuss a newspaper article about a conflict between countries.”
- “Argue your point of view about a controversial political or social issue.”
- “Stand as a candidate in a school election.”
- “Organise a group of students in order to achieve changes at school.”
- “Follow a television debate about a controversial issue.”
- “Write a letter or email to a newspaper giving your view on a current issue.”
- “Speak in front of your class about a social or political issue.”

All statements were measured in the Likert-type scale where “Very well” got 4 points, “Fairly well” – 3 points, “Not very well” – 2 points, and “Not well at all” – 1 point.

Both scales were continuous, and the Cronbach’s Alpha Reliability Coefficient values for countries of comparison were from 0.82 to 0.87.

PISA-2018 measures students’ self-beliefs in reading with “Self-Concept of Reading: Perception of Competence” Scale, financial matters with “Confidence in Dealing with Money Matters” Scale and global competence using “Self-Efficacy Regarding Global Issues” Scale.

“Self-Concept of Reading: Perception of Competence” Scale was built from the following three statements in the students’ questionnaire:

- “I am a good reader.”
- “I am able to understand difficult texts.”
- “I read fluently.”

All statements were measured in the Likert-type scale where “Not at all” got 1 point, “Very little” – 2 points, “To some extent” – 3 points, and “A lot” – 4 points.

“Confidence in Dealing with Money Matters” Scale was built from a question “How confident would you feel about doing the following things?” that was followed by statements:

- Making a money transfer;
- Filling in forms at the bank;
- Understanding bank statements;
- Understanding a sales contract;
- Keeping track of my account balance;
- Planning my spending with consideration of my current financial situation.

All statements were measured in the Likert-type scale where “Not at all confident” got 1 point, “Not very confident” – 2 points, “Confident” – 3 points, and “Very confident” – 4 points.

“Self-Efficacy Regarding Global Issues” Scale was built from a question “How easy do you think it would be for you to perform the following tasks on your own?”, followed by statements:

- “Explain how carbon-dioxide emissions affect global climate change.”
- “Establish a connection between prices of textiles and working conditions in the countries of production.”
- “Discuss the different reasons why people become refugees.”
- “Explain why some countries suffer from more global climate change than others.”
- “Discuss the consequences of economic development on the environment.”

All statements were measured in the Likert-type scale where “I couldn’t do this” got 1 point, “I would struggle to do this on my own” – 2 points, “I could do this with a bit of effort” – 3 points, and “I could do this easily” – 4 points.

Achievement

The achievement value in corresponding discipline was used as a reference value, i. e., TIMSS-2019 achievement in Mathematics/Science, PIRLS-2016 achievement in reading literacy, ICCS-2016 achievement in civic knowledge, PISA-2018 achievement in reading literacy, achievement in financial matters, and achievement in global competence.

The sample

The sample from the population for all studies was selected with two-stage stratified sampling design. Both studies in the first stage sampled schools with target grade/age students. IEA in the second stage sampled one to two classes from the sampled school with random sampling method and equal probability for every class, whereas OECD PISA sampled 42 students

from the sampled school whose age corresponded to the required age with a random sampling method and equal probability for every student. If the school did not have 42 students, all students were sampled. If the school had less than 20 students, the school had to be replaced. The study design predicted that student age and gender were approximately equally distributed.

The total PIRLS-2016 sample size was 34'352 4th grade students, TIMSS-2019 sample size was 32'485 4th grade students, ICCS-2016 sample size was 28'286 8th grade students, and PISA-2018 sample size was 44'682 15-year-old students. Although the precise number of participants was different in every study and country, all calculations were done with student weighting, and the results of this study are applicable to the population.

Results

As each study has its own sample and SES measurement scales, the authors of this article studied each sample with each measures separately. First, authors analysed the correlation between each SES item and students' academic self-beliefs. The authors found that from all analysed items the ones that were included in the SES measurement scale showed the best correlation and there was no need to create new scales and add other factors or remove any factors from the existing scales that were provided by the conductor of the chosen study. Second, the authors ran the null model of liner regression analysis with academic self-beliefs as a dependent variable and students' SES as an independent variable. The analysis showed that SES had a small but significant impact on academic self-beliefs and that SES was linearly related with student's achievement. Linear regression coefficients were higher for lower primary school children than for upper primary school children. The SES impacted more students' academic self-beliefs in reading and Mathematics than in other domains.

With reference to the introduction of the paper, the theory discusses that SES and academic self-beliefs are often related to achievement, and self-beliefs are even reciprocal in nature. Aiming to analyse how this model would change, if the academic achievement would be added, the authors complemented the model with the achievement of the relevant field. The results from the supplemented model can be seen in Table 1.

Table 1. Linear Regression Coefficients of Regression Equations Representing How Students' Self-Beliefs in Five Studies Are Affected by the SES and the Achievement

Study	Country Factors	Country							
		Latvia	Denmark	Finland	Germany	Lithuania	Poland	Russian Federation	Sweden
P2016	Home Resources for Learning	0.08	0.02*	0.05	0.06	0.05	0.07	0.16	0.04
	Achievement in Reading	0.38	0.49	0.40	0.37	0.44	0.38	0.35	0.39
T2019 Maths	Home Resources for Learning	-0.03*	0.00*	0.00*	0.04*	-0.06	0.03*	0.04*	-0.02*
	Achievement in Mathematics	0.52	0.48	0.43	0.46	0.52	0.44	0.37	0.38
T2019 Science	Home Resources for Learning	0.02*	0.02*	0.07	0.1	0.07	0.06	0.11	0.06
	Achievement in Science	0.19	0.26	0.17	0.30	0.21	0.21	0.15	0.16
ICCS-2016	National Index of Socioeconomic Background	0.09	0.13	0.14	0.08	0.10	N/A	0.06	0.07
	Achievement	0.06	0.16	0.19	0.20	0.04*	N/A	-0.07	0.17
PISA-2018 Reading	Index of Economic, Social and Cultural Status	0.11	0.05	0.07	0.05	0.07	0.09	N/A	0.08
	Achievement in Reading	0.35	0.36	0.4	0.35	0.29	0.37	N/A	0.31
PISA-2018 Finance	Index of Economic, Social and Cultural Status	0.05	N/A	0.05	N/A	0.05	0.04	0.08	N/A
	Achievement in Finances	0.18	N/A	0.11	N/A	0.12	0.18	0.16	N/A
PISA-2018 Global	Index of Economic, Social and Cultural Status	0.17	N/A	N/A	N/A	0.19	N/A	0.16	N/A
	Achievement in Global Competence	0.25	N/A	N/A	N/A	0.16	N/A	0.16	N/A

* not significant, $p > 0.05$

As one can see in Table 1, both the achievement and SES are linearly related to academic self-beliefs. When looking at each study separately, the achievement has a more significant impact on academic self-beliefs than the SES. Comparing with the null model, it can be stated that in some cases the SES lost its significance in the model, mainly in academic self-concept in Mathematics, when it was analysed together with achievement. The authors of this article suggest that the students' academic self-concept in reading in PIRLS-2016 in Denmark, the students' self-concept in Mathematics for all countries, and the students' self-concept in Science in Latvia and Denmark indicate stronger intercorrelations of SES with achievement than for other countries of comparison. The only country and study where the achievement was not significant in the model was ICCS-2016 in Lithuania, but it was negatively regressed for the Russian Federation. This finding should be analysed in detail in further studies.

In order to evaluate the explained variance in the Coefficients of Determination (R^2) for the linear regression, models are summarised in Table 2.

Table 2. Coefficients of Determination (R^2) of the Linear Regression Equations Displayed in Table 1

Study	PIRLS-2016	TIMSS-2019 Mathematics	TIMSS-2019 Science	ICCS-2016	PISA-2018 Reading	PISA-2018 Finances	PISA-2018 Global competence
Country							
Denmark	0.25	0.23	0.07	0.06	0.15	N/A	N/A
Finland	0.18	0.18	0.04	0.07	0.18	0.02	N/A
Germany	0.16	0.23	0.13	0.07	0.14	N/A	N/A
Latvia	0.18	0.27	0.04	0.06	0.15	0.04	0.12
Lithuania	0.22	0.24	0.07	0.02	0.10	0.02	0.08
Poland	0.17	0.20	0.06	0.01	0.17	0.04	N/A
Russian Federation	0.20	0.15	0.04	0.01	N/A	0.04	0.06
Sweden	0.17	0.14	0.04	0.04	0.12	N/A	N/A

As it can be seen in Table 2, the total explained variance is very diverse between studies and countries. The model explains a larger amount of variance for lower primary students and for reading literacy and Mathematics than for Science, financial, global and citizenship efficacy. One can argue that the model explains better the variance in the self-beliefs sub-domain, i. e. academic self-concept rather than self-efficacy. The model

explains the largest variance in academic self-concept in reading literacy at lower primary age (PIRLS-2016 study) for students in Denmark, followed by Lithuania and the Russian Federation. The variance in academic self-beliefs in Mathematics is best explained in Latvia, followed by Lithuania, Denmark and Poland. The third most explained variance is academic self-concept in reading literacy in the PISA-2018 study for Finland, followed by Poland, Latvia and Denmark. In the previous study (Kampmane & Ozola, 2021), the authors discovered that academic self-concept in Science correlated stronger with students liking to learn it (on average 0.64 points) than with achievement (on average 0.22 points), and this might be the reason why the model, where there are students' SES and achievement, explains less variance for academic self-concept in Science for younger students than in Mathematics and reading literacy.

As the PISA-2018 questionnaire for measuring self-efficacy in global competence contained questions that required extensive knowledge and even broad experience, the influence of SES and achievement was understandable, whereas the authors of this research were surprised by the results of self-efficacy in financial matters. In the authors' opinion this item should be directly related to the SES as for disadvantaged SES students banking and private accounting could be less affordable than for the advanced ones.

As it can be seen in Table 2, the variance in self-efficacy in citizenship is explained the least for all countries. There have been studies that try to explain the low results in civic achievement in the Baltic countries (Cekse & Alksnis, 2021), but the results show a very weak relationship between the achievement and factors analysed, that is why the authors of this study suggest conducting more studies in the future to try to explain self-efficacy in citizenship, exploring other explanatory factors than the SES and achievement of students.

Conclusions

This study aimed to analyse the impact a student has on his/her academic self-beliefs from such a family background factor as socioeconomic status. SES is linearly related to students' academic self-beliefs. As it is seen in Table 2, the lower grade students' achievement and SES explain a larger part of the variance of academic self-beliefs than it is for older students. The study contributes to the studies that differentiate self-efficacy from academic self-concept. Table 2 shows that the academic achievement together with SES explain a smaller part of the variance of self-beliefs if these self-beliefs are measured in the scale of self-efficacy. If self-beliefs are measured in the scale of academic self-concept, the SES and achievement explain the larger part of the variance of self-beliefs for both Grade

4 students (approximately 14–27%) and 15-year-old students (10–18%). The model summarized in Table 2 explains also the larger variance in such domains as reading literacy and Mathematics than Science. The authors of this article argue that it could be because of academic self-concept relationships with academic achievement, i. e., it has been previously studied that in TIMSS-2019 Science academic self-concept is more linearly related to the fact that students like learning Science than with achievement itself.

The results from ICCS-2016 and PISA-2018 self-efficacy in financial matters opens the door for a need to do in-depth research to enlarge the explained variance in students' self-beliefs. Although the results of linear regression analysis are very diverse between studies and countries, the result of this study shows that SES has a small but significant impact on students' academic self-beliefs, thus this study confirms the findings from different studies mentioned before, where a huge impact of SES on achievement and self-beliefs were doubted.

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