



NACIONĀLAIS
ATTĪSTĪBAS
PLĀNS 2020



EIROPAS SAVIENĪBA

Eiropas Sociālais
fonds

IEGULDĪJUMS TAVĀ NĀKOTNĒ



Izglītības un zinātnes
ministrija

The Influence of Family Socioeconomic Status on Students' Academic Self-Beliefs in Large Scale Assessment Data

Eiropas Sociālā fonda finansētā projekta Nr.8.3.6.1/16/I/001
"Dalība starptautiskos izglītības pētījumos"



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**PEDAGOĢIJAS,
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MĀKSLAS FAKULTĀTE**

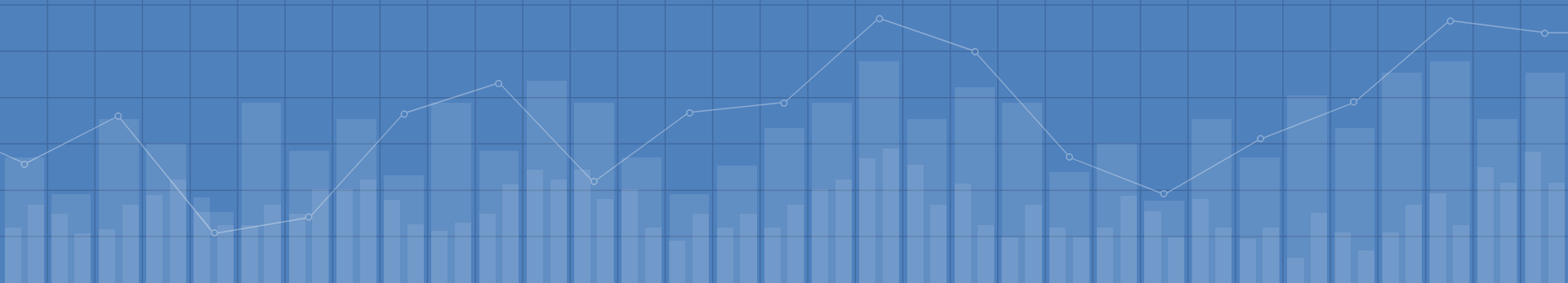
A. Geske, A. Ozola, K.Kampmane

Previous studies and research question

- Family has significant impact on child's academic self-concept in PIRLS 2016 (Geske, Kampmane & Ozola, 2021)
- Family has significant correlations with child's academic self-concept in TIMSS 2019 both Mathematics and Science* (Kampmane & Ozola, 2022)
- Family SES have strong impact on academic achievement in all International Large Scale competitive assessment data (Geske, Grīnfelds, 2020)

Research question

Does family SES have significant impact on elementary school's child academic self-beliefs?

The background features a light blue grid. At the bottom, there is a decorative graphic consisting of a white line graph with circular markers and a semi-transparent blue bar chart with vertical bars of varying heights.

International Large scale comparative assessment data

- PIRLS 2016, TIMSS 2019
 - Students Confident in Reading/Mathematics/Science Scale
 - Home Resources for Learning Scale
 - Achievement in domain area
- ICCS 2016
 - Students' Sense of Citizenship Self-Efficacy
 - National Index of Students' Socioeconomic Background
 - Achievement
- PISA 2018
 - Self-Concept of Reading: Perception of Competence
 - Confidence About Financial Matters
 - Self-Efficacy Regarding Global Issues
 - Index of Economic, Social and Cultural Status
 - Achievement in reading, finances, global competence

Academic Self-beliefs

- ▣ PIRLS 2016, TIMSS 2019:
 - *Self-concept: students perceived competence in a domain*
- ▣ ICCS 2016
 - *Self-efficacy: reflects students' self-confidence in active citizenship behavior, judgements of their capability to organize and execute courses of action required to attain designated types of performances*
- ▣ PISA 2018
 - *Self-efficacy: students perceived capacity of performing specific tasks*
 - *Self-concept: students own perceived abilities in a domain*

SES scale in PIRLS 2016, TIMSS 2019

- ▣ Home Resources for Learning Scale
 - Number of books at home
 - Number of children's books at home
 - Number of home study supports
 - Highest level of education of either parent
 - Highest level of occupation of either parent
- ▣ PIRLS 2016, TIMSS 2019
 - Cronbach's Alpha Reliability Coefficients: 0.63 – 0.74

SES scale in ICCS 2016

- National Index of Students' Socioeconomic Background
 - Highest occupational status of parents
 - Highest educational level of parents
 - The number of books at home
- Cronbach's Alpha Reliability Coefficients: 0.61 – 0.67



SES scale in PISA 2018

- Index of Economic, Social and Cultural Status
 - Parents' highest level of education
 - Parents' highest occupational status
 - Household possessions
 - Number of books at home
- Cronbach's Alpha Reliability Coefficients: 0.59 – 0.69



Linear regression equations

$$y = a + b_1x_1 + b_2x_2$$

- ▣ y = dependent variable – *students' self-beliefs*
- ▣ a = intercept (value of y when $x = 0$)
- ▣ b_1 = slope of x_1
- ▣ b_2 = slope of x_2
- ▣ x_1 = independent variable – *SES*
- ▣ x_2 = independent variable – *achievement*

In Linear Regression models Standardized Regression Coefficient (statistically significant for confidence interval of 95%) is displayed

Linear Regression Models

Study	Country	Latvia	Denmark	Finland	Germany	Lithuania	Poland	Russian Federation	Sweden
	Factors								
P2016	Home Resources for learning	0,08	<i>0,02*</i>	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 M	Home Resources for learning	<i>-0,03*</i>	<i>0,00*</i>	<i>0,00*</i>	<i>0,04*</i>	-0,06	<i>0,03*</i>	<i>0,04*</i>	<i>-0,02*</i>
	Achievement in Mathematics	0,52	0,48	0,43	0,46	0,52	0,44	0,37	0,38
T2019 S	Home Resources for learning	<i>0,02*</i>	<i>0,02*</i>	0,07	0,1	0,07	0,06	0,11	0,06
	Achievement in Science	0,19	0,26	0,17	0,3	0,21	0,21	0,15	0,16
ICCS2016	National index of socioeconomic background	0,09	0,13	0,14	0,08	0,94	...	0,06	0,07
	Achievement	0,06	0,16	0,19	0,2	<i>0,00*</i>	...	-0,07	0,17
PISA 2018 R	Index of economic, social and cultural status	0,11	0,05	0,07	0,05	0,07	0,09	...	0,08
	Achievement in Reading	0,35	0,36	0,4	0,35	0,29	0,37	...	0,31
PISA 2018 F	Index of economic, social and cultural status	0,05	...	0,05	...	0,05	0,04	0,08	...
	Achievement in Finances	0,18	...	0,11	...	0,12	0,18	0,16	...
PISA 2018 G	Index of economic, social and cultural status	0,17	...	...	...	0,19	...	0,16	...
	Achievement in Global competence	0,25	...	...	...	0,16	...	0,16	...

* Not significant, $p > 0.05$

R² for Liner Regression Models

Country \ Study	PIRLS 2016	TIMSS 2019 Mathematics	TIMSS 2019 Science	ICCS 2016	PISA 2018 Reading	PISA 2018 Finanses	PISA2018 Global competence
Denmark	0,25	0,23	0,07	0,06	0,15	...	...
Finland	0,18	0,18	0,04	0,07	0,18	0,02	...
Germany	0,16	0,23	0,13	0,07	0,14	...	...
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	...
Russian Federation	0,20	0,15	0,04	0,01	...	0,04	0,06
Sweden	0,17	0,14	0,04	0,04	0,12	...	...

Main Conclusions

- There are different measurements in different studies for
 - SES (different factors and different scale values)
 - Achievement (different calculations IEA vs OECD)
 - Self-beliefs (different aspects of self-concept)
- The results from different studies are not comparable*
- Family SES has small but significant impact on students' academic self-beliefs
- If analysed with academic achievement, for some countries in some studies SES loses its significance



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