

A glimpse of the complexity of factors that influence financial literacy

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Abstract

Financial literacy has been recognised as a vital life skill, but there is little evidence of the factors behind the differences in managing personal finance. Socio-economic factors and the provision of financial education do explain the variance in financial literacy in some countries, but not in all. In the PISA 2012 financial literacy test, Estonian students ranked very highly in international comparison; although only a few had received financial education at school. Compared with other countries, socio-economic factors explained the smallest proportion of variance in the test score. There was, however, a significant difference between the mean financial literacy scores of Estonian- and Russian-language communities. The aim of the article is to analyse the factors behind the differences in financial literacy when financial education is not provided. It also offers insight into how students in a similar education system in two different cultural and language frameworks achieve different financial literacy scores. Moreover, the results demonstrate how indicators, such as family background can work through different channels as opposed to the usual parental education or occupation based socio-economic indicators. The latter implies that unexplained factors remain, such as cultural, developmental and societal indicators, which most researchers pay little attention to when explaining efficient policies for improving financial literacy. Multivariate regression models show that the level of financial literacy in Estonia is correlated with gender, language of the school, the number of books at home, mathematics and reading scores. The Blinder–Oaxaca decomposition explains less than half of the gap between the two communities. The only variable significantly explaining the gap is the number of books at home. Books can be interpreted as a symbol of social status, evidence of cultural background or source of influence for broader picture and better problem solving skills.

Introduction

Financial literacy is a life skill needed for improving financial welfare at all life-stages. Its increasing importance in the changing society has ranked it highly on the global policy agenda (OECD, 2014). Being financially literate is not only necessary for the individual household and family, but also of growing importance to communities and societies (Hogarth, 2006).

There are two schools of thought in defining financial literacy: one views behaviour as a part of financial literacy, while the other treats behaviour as an outcome of financial literacy. Both approaches have their strengths, but the authors of the current article agree more with researchers who consider behaviour as part of financial literacy. It is hard to separate knowledge, skills and attitudes from actual behaviour and decision making. One may lead to another and vice versa. Good

knowledge can result in wise behaviour, but also behaviour can influence knowledge (Monticone, 2010). It may be that excellent knowledge does not result in wise behaviour – in the comparison of 14 countries, Estonia ranked second in financial knowledge and last in behaviour (Atkinson and Messy, 2012). That indicates there is “something more” to behaviour in personal finance than knowing the basics of finance and having access to well-designed and -regulated financial services.

The definition used in the Programme for International Student Assessment (PISA) suggested that financial literacy includes also the motivation and confidence for wise behaviour in managing personal finance:

Financial literacy is knowledge and understanding of financial concepts and risks, and the skills, motivation and confidence to apply such knowledge and understanding in order to make effective decisions across a range of financial

contexts, to improve the financial well-being of individuals and society, and to enable participation in economic life (OECD, 2014).

Data from the PISA 2012 financial literacy test results for Estonia will be used for the analysis of the factors behind the differences in financial literacy. Students of this country ranked very highly in international comparison, but the least proportion of variance in financial literacy scores is explained by socio-economic factors. There are two language communities in Estonia, both studying according to the same curriculum under the same educational policy and regulatory framework, but the gap between their financial literacy scores is substantial.

The analysis will concentrate on two main issues: the factors behind the differences in financial literacy levels and the factors behind the gap between two language communities. It contributes to research on financial literacy by challenging the assumptions that knowledge and socio-economic factors are of greatest influence in managing personal finance.

The empirical estimation technique is inspired by the framework for education production function. It assumes that the skills are influenced by a number of factors which can be divided into categories such as inputs from home and school, individual skills and other related factors (Hanushek and Woessmann, 2012). In addition to the effects of the school, family and individual, this study includes the experience of planning personal finances and using financial services in various specifications in regression models.

To provide insight into the possible reasons for the gap between the scores of Estonian- and Russian-language schools, the Blinder–Oaxaca decomposition technique is used. This technique is used mostly to explain the differences in wage between genders or ethnic groups, but can also be used to analyse the group difference in any continuous explained variable (Jann, 2008).

In the PISA assessment, Estonia was the only country to stratify the sample by the language of the school; therefore, data from other countries with similar two language communities cannot be analysed on the same basis.

In the following sections, a brief overview of the background and theoretical framework is provided, followed by descriptive statistics of the PISA 2012 financial literacy test results. In the fourth section, the estimation method is explained in greater detail, and the multivariate models are provided. Finally, the results of the statistical analysis are indicated and discussed in order to conclude with the possible implications of these findings.

Background

Research has found evidence that better knowledge of financial issues leads to wiser choices in saving and investing (Lusardi and Mitchell, 2014), in preparing for retirement (Lusardi and Mitchell, 2007); increasing stock market participation (Van Rooij *et al.*, 2011) and preventing the incurrence of debt (Huston, 2012; Lusardi and Tufano, 2015). Less evidence has been found in relation to the factors constituting the differences in financial literacy.

There is no clear formula or “financial literacy production function” that would sufficiently explain the factors required

for managing personal finances well both for the short and long term. Long-term planning has mainly been analysed by measuring increases in net worth or performance of investments. Individuals may not necessarily think in fiscal terms, they can think of their health, education, enterprise or even children as the tools for long term planning. Planning and measuring the sufficiency of investments for increasing personal welfare in all life-stages is a key challenge. Furthermore, there is limited evidence of a high level of financial literacy, and in turn wealth, leading to more happiness or increased life satisfaction. Kahneman and Deaton (2010) found that having more money may not necessarily lead to more happiness, but having less money does cause emotional pain. They found evidence that emotional well-being satiates with high income, but life evaluation does not.

For the first time, in 2012 PISA contained a financial literacy measurement option for 15-year-olds, in addition to the traditional mathematics, reading, and science tests. The financial literacy test was taken by 29 000 students in 18 countries and economies, including Estonia (OECD, 2014). The majority of students taking the PISA test in Estonia had not received financial education at school; it had been added to the national curriculum by that time, but not yet implemented.

Estonian national strategy for financial education was being designed at the time of the survey but not yet implemented. Teachers and representatives from both public and private sectors had taught about money matters at some schools; this, however, was inadequate to provide financial education at a sufficient level even in those few schools. Nevertheless, Estonia ranked very highly in the international comparison; it was in third place after Shanghai-China and the Flemish Community of Belgium (OECD, 2014).

A more disturbing fact in the PISA 2012 results was the large gap between the schools with Estonian and Russian language of instruction. Almost a third of the population of Estonia is Russian speaking, but nearly all Russian speaking students were born in Estonia as their parents or grandparents moved to Estonia during the Soviet regime. Therefore, students of both Estonian- and Russian-language schools have been living in the same society, have been taught based on the same curriculum and education policy and have had access to the same financial services and sources of financial education. Despite that, they are not at the same financial literacy level. Students of schools in which Estonian is the language of instruction scored on average 42 points more than the students of Russian-language schools.

Research on improving financial literacy

Research on financial literacy can roughly be divided into three streams: analysis of the outcomes of financial literacy and the effectiveness of financial education programmes; analysis of financial literacy levels in different countries and subpopulations; and research on behavioural finance. The current research contributes mainly to the second topic, but the other two are briefly covered to provide relevant suggestions for policy implications.

At first, it may seem that providing clear, unbiased and impartial information free of charge at all life stages is sufficient to create change. Nevertheless, this assumption overlooks human

nature. One may know that eating too much sugar and fat is unhealthy, but a great deal more is necessary to change one's diet and lifestyle for one's own good. The same applies to behaviour in personal finance – the usefulness of saving for a rainy day is clear, but yet not many do it. Besides knowledge and skills, also attitudes, social norms, motivation and opportunities influence financial behaviours (Ipsos *et al.*, 2013). Opportunities in the context of this paper, for example, access to financial services or having sufficient resources. Awareness of psychological biases and limitations could increase the effectiveness of financial education (West, 2012) and the power of social norms could improve the impact of interventions for behaviour change (Fertig *et al.*, 2015). The provision of objective information is, of course, necessary, but the public may fail to make use of it and not start saving for retirement. It is easier not to choose from such complex services and take the “path of least resistance” as Choi *et al.* (2002) call it.

Finding ways to overcome the heuristics and biases hindering wise choices is the domain of behavioural economics. Kahneman and Riepe (1998) explain that financial decisions are often made based on intuition, rather than on an objective analysis. Ariely *et al.* (2006) show that people do not even reliably know their own preferences; therefore, it cannot be a solid basis for saving and investment choices. Thaler and Sunstein (2009) suggest that governments and providers of financial services could design nudges “that are most likely to help and least likely to inflict harm” instead of providing education and expecting people to make rational investment decisions. O'Donoghue and Rabin (1999) summarise the findings of behavioural economists by stating that people have a ‘tendency to pursue their immediate well-being in a way that their “long-run selves” do not appreciate’.

Jappelli and Padula (2013) note that financial literacy itself is a choice; it does not just involve acquiring a sufficient level for choosing among financial services, but also deciding whether to invest time, money and effort in improving financial literacy. Atkinson (2008) points out the difficulty of measuring the effectiveness of financial education provided at school as the main measurable results appear in adulthood behaviour. The ability to measure it years later and separate it from other sources of influence is a challenge.

Financial education has been found to have a ‘positive but modest’ effect on behaviour (De Meza *et al.*, 2008). A one-time training session may influence behaviour in the short term,

but in order to have an impact in the long term, follow-ups and continuing programmes are recommended (Lusardi *et al.*, 2015). Alsemgeest (2015) suggests including non-cognitive and affective factors into the design of financial education programmes. Sunstein (2015) argues that in the case of certain retirement issues ‘default rules are preferable to financial education’. The defaults help the individual to overcome procrastination, present-bias and hyperbolic discounting that hinder long-term investment, even though the knowledge gained from financial education programmes would be sufficient for wise choices.

There is evidence that the provision of financial education at school has at least short-term effects on attitudes and spending behaviour (Batty *et al.*, 2015). A well-designed financial education programme not only provides information, but it also offers skill-building and motivation (Hilgert *et al.*, 2003). Participants in the programme can share their experiences and motivate each other to take the first step towards behaviour change.

Data and descriptive evidence

The PISA 2012 financial literacy test relied on relevant content, processes and contexts, such as planning and managing finances, evaluating financial issues in individual and societal contexts. The paper-and-pen test used a two-stage stratified sample design (OECD, 2013).

In Estonia, 1088 students took the financial literacy test. They attained a mean score of 529 points, which is significantly above the OECD mean score (500) and statistically similar to the students of Australia and New Zealand (OECD, 2014). Students of schools in which Estonian is the language of instruction scored on average 540 points; students in schools with Russian as the language of instruction scored 498 points. The gap is larger than in PISA mathematics and reading test scores (see Table 1).

The type of the settlement where the school is situated has a significant influence on financial literacy in most of the countries participating in the PISA 2012 financial literacy test; students of the schools situated in a city with more than 100 000 inhabitants usually outperform their rural counterparts. In Estonia, the difference is not significant (Fig. 1).

Test results demonstrate that 36% of students discuss money matters with their parents once or twice a week, while 19% do

Table 1 PISA 2012 financial literacy, reading and mathematics test results

	PISA test scores	Number of observations	Mean	Standard deviation	Min	Max
Financial literacy	Students in Estonia	1088	529.060	78.972	264.557	755.788
	Students of Estonian-language schools	824	538.877	76.882	295.155	755.788
	Students of Russian-language schools	224	498.432	74.694	294.018	700.558
Mathematics	Students in Estonia	1088	533.649	94.202	248.697	805.256
	Students of Estonian-language schools	824	538.536	94.877	250.429	799.573
	Students of Russian-language schools	224	522.254	87.413	275.882	777.282
Reading	Students in Estonia	1088	519.462	87.374	229.085	741.376
	Students of Estonian-language schools	824	525.109	86.737	245.922	741.376
	Students of Russian-language schools	224	505.737	84.407	279.997	713.292

Note: There were 40 students from schools with both languages of instruction; these results were not included in further analysis.

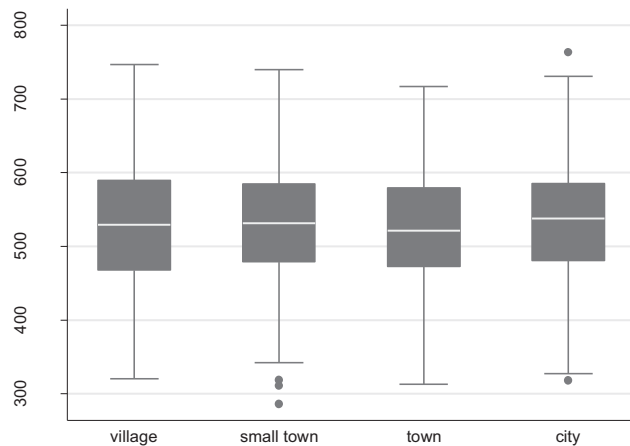


Figure 1 Variance in PISA financial literacy score in villages, towns and cities.

so almost daily. Those who discuss more frequently achieve higher scores in the financial literacy test (Fig. 2).

Similarly to some PISA studies that focus on the effects of family background (Pöder et al., 2016), cultural possessions, such as the number of books at home demonstrate the greatest influence on Estonian students' performance. The more books the student says he or she has at home, the higher the score is in financial literacy test (Figs. 3).

An area of further research could be to examine whether financial literacy scores are influenced by the amount of money students have; however, current data do not provide sufficient information on income levels nor the amount of pocket money received.

Method

First, the datasets of the student questionnaire and school leader questionnaire were merged by the school. Next, multiple regressions were run and the variables to be included in final models were chosen (see Table 2). Indexes created by the OECD were not included as the authors of the current research may not be able to fully explain their effect on financial

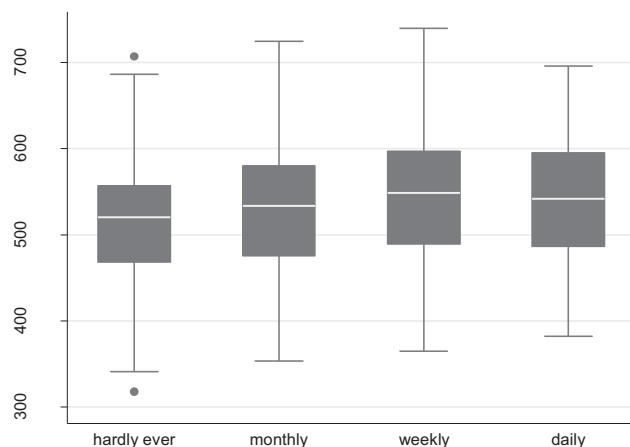


Figure 2 Discussing money matters with parents and PISA financial literacy score.

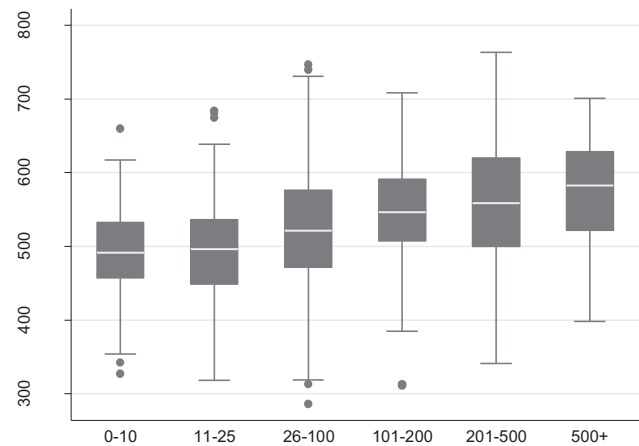


Figure 3 Number of books at home and financial literacy PISA score.

literacy. For example, the family wealth index is calculated based on students' responses to questions about the space or appliances they have in the home, such as their own room, a dishwasher, the number of televisions or mobile phones (OECD, 2014). It does not take into account their parents' income, assets and liabilities. It might be that the number of home electronic appliances is high, but they are all bought on credit. It may also be that the family values saving and investing for future goals more than having many devices today.

Multivariate linear regressions were run to understand the factors behind the differences in financial literacy, using the following model:

$$\begin{aligned}
 pv@flit_{isl} = & \alpha + \beta_n \sum \text{student background characteristics}_{isl} \\
 & + \delta_p \sum \text{influence from home characteristics}_{isl} \\
 & + \gamma_m \sum \text{school background characteristics}_{isl} \\
 & + \zeta_r \sum \text{influence from experience with financial} \\
 & \text{services characteristics}_{isl} + \varepsilon_{isl}
 \end{aligned}$$

where i stands for individual, s for school and l for language of the school, ε is the error term.

A significant number of observations were lost in the questions concerning the frequency of discussing money matters at home and having experiences with financial services due to the fact that because of the survey design only half the participants were asked such questions. Those who reported the frequency of discussing money matters with parents were not asked the question about holding a bank account and vice versa (Table 3).

In PISA data, five plausible values are calculated by the OECD for each test score. The regression techniques have to be cautious about correlated standard errors in the case of school specific unobserved factors. Therefore, in data analysis, a new package designed by the analysts of the OECD was applied. The package *repst* uses replicate weights and all plausible values of test scores to produce unbiased estimates (Avvisati and Keslair, 2015).

In order to analyse the difference between the average financial literacy scores of Estonian- and Russian-language schools, the Blinder-Oaxaca decomposition technique for linear regression models was used. The two-fold decomposition technique has been developed by Blinder (1973) and Oaxaca (1973). It

Table 2 Summary of variables used in multivariate regression models

Variable	Number of observations	Yes	No
Mother has secondary education	1046	947	99
Father has secondary education	966	840	126
Mother has a bachelor's and/or master's degree	898	334	564
Father has a bachelor's and/or master's degree	804	202	602
Male	1088	559	529
Students of Russian language school	1048	224	824
Grade	1088		
	7 grade	3	
	8 grade	232	
	9 grade	837	
	10 grade	16	
Type of the settlement where the school is situated	1088		
	Village	192	
	Small town	307	
	Town	248	
	City	341	
Discussing money matters at home	498		
	Almost every day	94	
	Once or twice a week	182	
	Once or twice a month	161	
	Never or hardly ever	61	
Number of books at home	1078		
	0–10 books	86	
	11–25 books	132	
	26–100 books	349	
	101–200 books	225	
	201–500 books	194	
	More than 500 books	92	
Holding a bank account	527	439	84
Holding a debit card	504	153	203 and 148 “do not know what it is”
Having earned money outside home and family business	502	192	310

breaks down the effect of explanatory variables for both groups of the population and shows the extent to which the effect of those variables explains the difference. The unexplained difference is often interpreted as discrimination.

Results

First, the impact of student background and influence from home were analysed. These factors account for merely 14% of the variance in financial literacy. The strongest positive impact on the financial literacy score was related to having more books at home (see Model 1).

Second, the influence from experience with financial services was analysed. In Model 2, only holding a debit card had a positive influence on the financial literacy score.

Third, influence from both school and home were calculated. This model explains 74% of the variance. Variables that significantly correlated with financial literacy were the language of the school, gender, mathematics and reading scores (see Model 3).

Variables explaining the experience with financial services and discussing money matters at home did not provide sufficient data to be used in explaining the gap between Estonian- and Russian-language schools. Therefore, analysis continued

with only the questions put to all participants. The final model explains 72% of the variance (see Model 4). There is a significant correlation between financial literacy and gender, the number of books at home, the language of instruction of the school, mathematics and reading test scores.

Next, the Blinder–Oaxaca decomposition technique was used with the variables of Model 4. The gap between financial literacy scores of Estonian- and Russian-language schools analysed in the decomposition is 39 points. Forty-two percent of the gap is explained by the chosen model (see Table 4).

The first part of Table 4 reflects the mean increase in Russian-language students' test scores if they had the same characteristics as students in Estonian-language schools. The second part indicates the factors that explain part of that difference. The difference is explained significantly by the number of books at home only (see Figure 4). The last part of Table 4 displays the unexplained difference; none of the factors is statistically significant. The unexplained gap can be interpreted as a discriminatory part of the score difference. However, it can also be the result of the influence of unobserved variables.

The main limitation of the Blinder–Oaxaca approach is related to the choice of reference group. As the decomposition is effectively a comparison of two identically specified

Table 3 Linear regression models, coefficients and (school robust standard errors)

	Model 1	Model 2	Model 3	Model 4
Student background				
Mother has secondary education	33.325* (14.695)	10.504 (14.525)	10.617 (8.134)	7.467 (6.291)
Father has secondary education	−2.911 (15.372)	1.535 (16.438)	−10.029 (8.156)	−9.440 (5.394)
Mother has a bachelor's and/or master's degree	7.320 (10.315)	4.420 (11.365)	−7.817 (5.963)	−5.780 (3.700)
Father has a bachelor's and/or master's degree	7.538 (13.209)	9.364 (13.070)	1.305 (7.361)	−1.470 (4.674)
Male	11.698 (9.381)	11.268 (10.160)	11.811* (5.424)	13.690*** (3.801)
Influence from home				
Discussing money matters at home				
Once or twice a week	2.546 (15.950)		−6.249 (10.438)	
Once or twice a month	19.411 (13.823)		7.451 (9.060)	
Never or hardly ever	13.283 (16.395)		0.695 (11.785)	
Number of books at home				
11 – 25 books	10.749 (16.580)		6.247 (10.915)	4.566 (6.447)
26–100 books	20.636 (13.292)		7.119 (10.421)	11.043 (6.683)
101–200 books	46.917*** (14.707)		19.817 (10.890)	20.778** (7.128)
201–500 books	50.239** (16.396)		16.009 (12.375)	19.560** (7.583)
More than 500 books	74.583*** (18.347)		17.503 (14.296)	23.477** (8.400)
Experience with financial services				
Holding a bank account		7.038 (11.393)		
Holding a debit card		46.515*** (11.031)		
Having earned money outside home and family business		−16.616 (10.430)		
Influence from school				
Students of Russian-language school			−21.910** (7.775)	−22.381*** (5.607)
Grade 9 or 10			3.171 (5.654)	5.609 (4.344)
Type of the settlement where the school is located				
small town			−1.894 (7.956)	−0.027 (5.801)
Town			−6.365 (8.553)	−8.910 (6.070)
City			−8.740 (8.239)	−9.110 (5.603)
Mathematics test score			0.432*** (0.045)	0.397*** (0.036)
Reading test score			0.302*** (0.050)	0.350*** (0.038)
Constant	466.558	505.678	136.487	125.915
Number of observations	349	333	338	732
R Squared	0.140	0.117	0.735	0.722

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

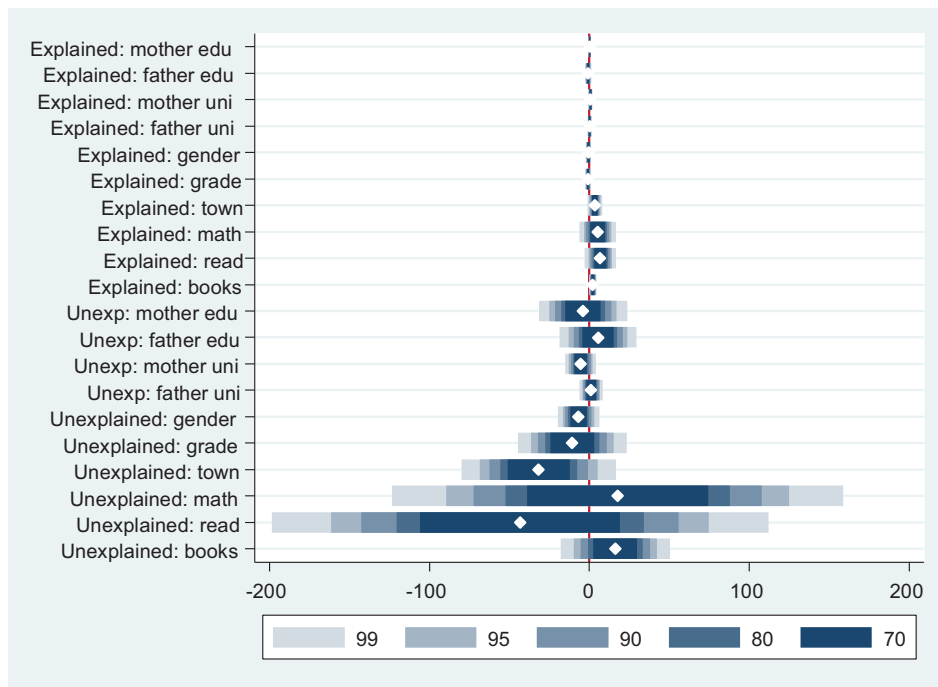


Figure 4 Blinder–Oaxaca decomposition of the difference between the financial literacy scores of the students of Estonian- and Russian-language schools.

regression models that incorporate categorical variables (such as parental education, number of books at home), an omitted reference category is required for each set of categorical variables. In some cases, the choice of reference category is obvious (e.g. no secondary education in the case of parental education), and in other cases the decision is much more arbitrary (e.g. the number of books at home). Finally, as the regression models in the decompositions are based on the linear regression, the decomposition results are a statement about the effects on the scores of the “average” Estonian-language school student compared with the “average” Russian-language school student. These “average” results may not be reflective of the results for “extreme” students (e.g. 10th percentile or 90th percentile).

Discussion

The multivariate regression analysis revealed the more significant influencers to be the language of the school and the number of books at home. The first can be interpreted as the cultural differences between two language communities, while the unexplained part of the gap could reflect some discrimination against the minority language group or a difference in the teaching methods in Russian-language schools. It might also be that the more than 900 variables in the merged dataset were still not sufficient to explain the factors behind differences in financial literacy.

The second major source of influence, the number of books at home, can be interpreted in several ways. On the one hand, it can be the indicator of the socio-economic status. It has been argued by some authors (Schütz *et al.*, 2008; Evans *et al.*, 2010) that books are a preferred indicator for showing the impact of various family inputs, such as family contributions to education, the cultural capital of families, and their preferences in education, especially in inter-cultural research. However, as

Fuchs and Wößmann (2006) demonstrate, books at home are the only and most significant predictor of the students’ performance that combines various impacts from educational, income-based and social background information. Furthermore, arguing along the lines of Schütz *et al.* (2008), it can be stated that differences in reported educational levels using education categories can be misleading.

The quantity of books may as well be an indicator of family wealth, but in the Estonian context, it should be borne in mind that during the Soviet regime books were extremely cheap and it was almost a social norm to have large numbers of books at home. Regardless of whether they were read or not the books served more as an element of interior decoration.

On the other hand, the link between financial literacy and the number of books at home might imply that well-read students and children of families with more interest in cultural issues are better prepared for the challenges of making choices in our modern society. Because of having a broader picture, they are better able to solve problems in domains that are not specifically taught at school. There is evidence that a larger number of books at home does have a positive influence on the IQ of the child (Terman and Oden, 1959). There is also evidence that the quantity of books at home has a positive influence on educational attainment in all parts of the world (Evans *et al.*, 2010).

There was a strong correlation with mathematics and reading test scores, but the students in Estonia performed even better in financial literacy than these scores would have predicted (OECD, 2014). Both mathematics and reading skills are needed to understand the terms of complex financial services: mathematics, for calculating the costs and earnings, and critical reading for finding relevant information in marketing messages and surviving information overload.

Table 4 Blinder–Oaxaca decomposition of the financial literacy gap between Estonian and Russian-language schools, pooled data with school robust standard errors

Variable	Coefficient	Robust standard error
Overall:		
Difference in financial literacy	38.902***	9.235
Explained difference	16.382*	7.458
Unexplained difference	22.520***	5.599
Explained:		
Mother has secondary education	0.233	0.314
Father has secondary education	−0.752	0.734
Mother has a bachelor's and/or master's degree	0.720	0.554
Father has a bachelor's and/or master's degree	0.145	0.503
Male	−0.617	0.654
Grade 9 or 10	−0.838	0.673
Type of the settlement where the school is located	3.434	1.773
Mathematics test score	5.147	4.416
Reading test score	6.772	3.750
Number of books at home	2.137*	0.952
Unexplained:		
Mother has secondary education	−3.994	10.726
Father has secondary education	5.436	9.346
Mother has a bachelor's and/or master's degree	−5.427	3.773
Father has a bachelor's and/or master's degree	1.100	2.863
Male	−6.783	5.003
Grade 9 or 10	−10.689	13.156
Type of the settlement where the school is located	−31.724	18.758
Number of books at home	16.189	13.256
Mathematics test score	17.666	54.806
Reading test score	−43.413	60.315
Constant	84.168	46.802

Number of observations: 732.

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

In general, the study raises more questions than it answers. Why does the number of books at home have a positive influence on financial literacy? How does parents' income influence financial literacy? There were no direct questions concerning income in PISA, but there are reasons to doubt whether having more money leads to higher financial literacy scores. It was found that 'some OECD countries with lower levels of GDP per capita perform better in financial literacy than wealthier OECD countries' (OECD, 2014). Therefore, it can be speculated that also family background factors do not explain the difference as much as they might at first glance.

This is clear evidence of the complexity of financial literacy; there is a great deal more than merely knowledge and resources behind the differences. It involves a combination of a much wider scope of issues, from psychological factors to social norms and cultural differences not yet measured in PISA. Thus, in line with Meyer and Schiller (2013), it can be argued that there is a combination of a much wider scope of non-educational factors that have a strong but unexplored impact on PISA outcomes.

Conclusion

In order to succeed in behaviour change, it is vital to understand the sources of the influences on financial literacy. As discussed above, much still needs to be revealed. It has been

assumed that knowledge and socio-economic status influence behaviour in managing personal finance the most. Empirical data from Estonia discussed in this paper shows these may not be as vital factors as considered to be so far. The fact that in current data only the number of books at home explained the differences in financial literacy indicates the much broader scope of cultural and societal factors influencing financial behaviours. That should provoke discussion in any of the WEIRD (Western, Educated, Industrialized, Rich, and Democratic; Henrich *et al.*, 2010) countries that strive to improve the levels of financial literacy.

Policymakers could take a step back and consider the extent of their understanding of the factors preventing individuals from making wise choices. If the answer is not clear, further research might be a solution, as opposed to the provision of information only. In addition to research on behavioural factors, further analysis of the influence obtained from experiences with managing personal finance and the role of socio-economic factors not covered in the present data might be the paths to follow.

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