

Social inequality in skills: Exploring the moderating role of extracurricular activities related to socio-economic differences in non-cognitive and cognitive outcomes

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Abstract

Engaging in extracurricular activities is known to affect both cognitive and non-cognitive outcomes, but there is social inequality in access to these activities. In this study, we examine the role of extracurricular activities in moderating the relationships between secondary school students' social background and their cognitive and non-cognitive outcomes. Secondly, we examine variations in these relationships among three European cities that represent different educational systems in managing student heterogeneity. Based on the study findings, the effects of extracurricular activities on academic outcomes varied with regard to measured skills and the city of study. Extracurricular activities were related to enhanced interpersonal skills in all cities studied. However, in Turku and Ghent, extracurricular activities buffered the socio-economic gradient in interpersonal skills, whereas in Barcelona, such activities increased it. Rather surprisingly, in all cities, engaging in extracurricular activities magnified the effect of socio-economic status on cognitive skills.

KEYWORDS

academic outcomes, cross-country differences, extracurricular activities, non-cognitive skills, secondary school

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1 | INTRODUCTION

Participation in extracurricular activities is linked to positive youth development and education (OECD, 2012). These activities provide opportunities to acquire specific social, physical and intellectual skills that prove beneficial in diverse life settings, including the school environment. These informally acquired skills, in turn, facilitate school engagement and achievement, foster subsequent educational and occupational aspirations and attainment and shape general life choices (Behtoui, 2019; Eccles et al., 2003).

Most controversies in studying extracurricular activities (EAs hereafter) educational payoffs relate to the understanding of the very nature of the impact of EAs on academic achievement (cf. Coulangeon, 2018). While numerous studies have investigated the relationship between extracurricular activities and cognitive outcomes, the relationship between EAs and non-cognitive skills is investigated less (Covay & Carbonaro, 2010). Studies consistently show that engagement in EAs leads to enhanced non-cognitive outcomes, improving collaboration and communication skills (Eccles et al., 2003; See et al., 2017). Moreover, EAs increase civic engagement (Fredricks & Eccles, 2006; Raffo & Forbes, 2021) and reduce risk behaviour, such as substance use or youth delinquency (Feldman & Matjasko, 2005).

Research indicates that the impact of EAs in students' cognitive outcomes is, at least partly, indirect, with non-cognitive skills serving as a potential explanation for this indirect effect (Covay & Carbonaro, 2010). Additionally, research shows that the availability of extracurricular activities is unevenly distributed among communities and schools, usually with notably lower availability in schools where students are at the highest risk for poor outcomes (Eccles et al., 2003; Guest & McRee, 2009; Stearns & Glennie, 2010). This unequal distribution of extracurricular opportunities between the schools makes participation in these activities a crucial equity issue, especially so because families with lower socio-economic status (SES hereafter) would benefit the most from practicing EAs (Morris, 2015; Nordlander, 2016). As Bourdieu and Passeron (1990) argued, the cultural capital that young people with lower SES lack in home and school contexts, can be counterbalanced by the cultural capital they gain in other contexts, for instance, when attending EAs. Thus, engagement in EAs can moderate the social inequality in the cognitive or non-cognitive outcomes of lower SES youth.

Cross-national research examining the impact of educational systems on students' outcomes has revealed that while education tends to perpetuate social inequality across all studied systems, the extent of this reproduction varies (Dupriez et al., 2012). Specifically, social reproduction appears more pronounced in systems applying stringent forms of tracking compared to those with more comprehensive systems (Bol & Van de Werfhorst, 2013). This same mechanism may be applicable to the social gradient in EA involvement and its resulting outcomes. However, to what extent the social gradient related to EAs and its association with cognitive and non-cognitive outcomes is country-dependent remains unknown. As reproduction tends to be less prominent in more comprehensive systems (Bol & Van de Werfhorst, 2013; Mons, 2007), it can be hypothesized that the social gradient in EA participation is likewise less pronounced in these systems. Building on this rationale, EAs may possess a greater potential to reduce social inequalities in tracked systems compared to comprehensive ones. This is because the social gradient in cultural capital might be more emphasized in the latter.

The objective of the present study is to assess the impact of EAs on social disparities in both cognitive and non-cognitive outcomes among students in three countries, each representing distinct models for addressing academic heterogeneity (Mons, 2007). For comparative purposes, we have chosen three specific educational systems: The Finnish system in Turku, representing an 'individualised integration model' characterized by a comprehensive system with rare grade retention; the Spanish system in Barcelona, illustrating a 'uniform integration model' that resembles a comprehensive system but involves extensive grade retention; and the Flemish system (the Dutch-speaking, northern part of Belgium) in Ghent, representing a 'separation model' with stringent tracking and extensive grade retention.

2 | CONCEPTUAL BACKGROUND

2.1 | Extracurricular activities

Extracurricular activities refer to organized activities that are unrelated to the primary curricula, provide opportunities for participants to develop specific skills or knowledge and take place outside school hours. These activities are organized by schools, youth organizations and after-school programs and include a variety of different activities. Of these, the school-based extracurricular activities are linked to the school, promoted by the school staff or students themselves and have a clear instrumental purpose in the acquisition of learning. Science and literature competitions, students' councils or singing in a choir are examples of these activities.

The majority of adolescents report some level of school-based extracurricular involvement (Feldman & Matjasko, 2005), highlighting EAs as a key arena for understanding the academic achievement of students. The research evidence on the developmental significance of EAs has long been accumulating and suggests a positive relationship between adolescents' participation and diverse student outcomes, including achievement (Covay & Carbonaro, 2010), dropout (Mahoney & Cairns, 1997) and even educational and risky behaviour outcomes (Eccles et al., 2003). Eccles and colleagues argue that EAs may among other things enhance students' problem-solving, academic confidence, analytical and critical skills through co-operative activities and hands-on experiences.

2.2 | Different dimensions of non-cognitive skills

In most research, non-cognitive skills are considered to encompass personality traits or individual skills not assessed by measures of cognitive ability (West et al., 2016). As personality traits, the 'Big Five'—extraversion, neuroticism, openness to experience/intellect, conscientiousness and agreeableness (Fletcher, 2013), are most commonly included as non-cognitive skills. While the 'Big Five' personality dimensions are recognized for their ability to explain variation in educational attainment, there is also evidence linking non-cognitive skills to various other outcomes. For example, extraversion has been associated with earnings (Doren & Grodsky, 2016) as well as career and health outcomes (Kautz et al., 2014).

In addition to personality traits, which are considered relatively stable, non-cognitive skills encompass a spectrum of more flexible and malleable abilities, including perseverance, self-control, motivation and social and communication skills. These varied skills have been described in the literature also as 'soft skills', '21st century skills', 'competencies' and 'life skills' (see, e.g. Lamb et al., 2015). This study specifically focuses on these dynamic skills. Existing research commonly categorizes non-cognitive skills into intrapersonal and interpersonal domains (Doren & Grodsky, 2016; Kautz et al., 2014; West et al., 2016). The intrapersonal skills include three groups of competencies: intellectual openness, work ethic and conscientiousness and positive core self-evaluation (Lamb et al., 2015). Conversely, interpersonal skills encompass teamwork and leadership, incorporating competencies such as collaboration, communication, responsibility and conflict resolution (Pellegrino & Hilton, 2013).

2.3 | Extracurricular activities and non-cognitive skills

There are different explanations for the association between EA participation, non-cognitive skills and cognitive skills. One considers the idea of 'transferability' (Merino, 2007), suggesting that extracurricular activities are anticipated to assist young people in acquiring skills and abilities that can be transferred to the academic environment (Merino, 2007; Monteagudo et al., 2017). Another explanation refers to a 'spillover effect' (Elster, 1993), positing that if a person adopts a specific behaviour pattern in one aspect of their life, they are likely to exhibit the

same pattern in other areas. For example, if students participate in decision-making during extracurricular activities, they may also show an increased interest to participate in decision-making at school.

A third rationale suggests that participation in EAs fosters the development of non-cognitive skills, subsequently enhancing a sense of identification with the school. This increased identification, in turn, would boost overall participation and broader engagement (Finn, 1989). In Spain, for example, students who actively practice sports tend to exhibit higher levels of emotional and cognitive engagement with their school (Palou et al., 2020). Literature on engagement consistently underscores the interconnectedness of school engagement and academic achievement, demonstrating that heightened involvement with school positively influences academic performance (Finn & Zimmer, 2012; Fredricks et al., 2004; Pöysä et al., 2020). In short, various theoretical explanations and empirical work show engagement in EAs to foster non-cognitive and cognitive skills.

2.4 | Social inequality in extracurricular activities and non-cognitive and cognitive skills

2.4.1 | Individual and family level inequalities

Based on the social reproduction theory (Bourdieu & Passeron, 1990), scholars have anticipated varying levels of participation in EAs among students from diverse social backgrounds due to the distinct economic and cultural capital they possess (Epps et al., 2013). Parents with greater economic capital use their financial resources to support their children, covering expenses such as tutors and school fees, but also extracurricular activities that contribute to their academic success (Lareau, 1987). According to Lareau (1987), middle- and upper-middle-class parents, characterized by what she terms 'concerted cultivation', organize their parenting around four key dimensions shaping their child's habitus: perceptions of parental responsibilities, language patterns, relationships with social institutions and their children's participation in EAs. A wide body of literature endorses this social inequality in extracurricular activities (Shildrick & MacDonald, 2006). This disparity arises because these activities are neither compulsory nor equally provided in schools. Economic barriers, such as *pay to play* practices (Putnam, 2015), further restrict access for some young people to certain EAs.

Notably, social background not only influences participation in EA but also shapes the impact of such activities on student outcomes (Covay & Carbonaro, 2010). Students from low-SES families stand to gain the most from practicing EAs (Morris, 2015; Nordlander, 2016). This suggests that EAs have the potential to moderate social inequalities in other outcomes (Merino, 2007). This effect is particularly significant because students from low-SES families typically have less cultural capital both at home and at school. However, the cultural capital developed through participation in EAs may compensate for this deficit (Sullivan, 2001). Consequently, we anticipate that involvement in EAs will play a moderating role in the social inequality observed in cognitive and non-cognitive outcomes.

2.4.2 | System-level inequalities

Mons (2007) outlines different models for addressing academic heterogeneity adopted by different countries. She divides education systems into four categories. The first is the separation model, characterized by rigorous tracking and extensive grade retention. Countries such as Germany, the Netherlands and Belgium exemplify this model. The second category is the individualized integration model, where grade retention is the exception, and pedagogic strategies prioritize individualized instruction and small groups. Denmark and Finland serve as examples of this model. The third category is the *a la carte* integration model, where students follow a common program at the same pace, but some form of ability grouping is employed. The USA and the UK operate under this system. The

last category is the uniform integration model, where all students experience the same educational conditions, and the only adjustment is through grade repetition. France and Spain exemplify this model.

According to Dupriez and Dumay (2005), education systems utilizing the individualized integration model are more equitable than others. The individualized integration models in education strive to avoid prolonged divisions among students based on their academic outcomes. This is rooted in the belief that schools can compensate for social and cultural inequalities among students from diverse backgrounds. Moreover, this model asserts that schools should offer each student genuine opportunities for success before any form of selection occurs. In this model, separate classes for low-achieving students are infrequent, and repetition is considered an exception, distinguished by its pedagogical strategies. In contrast, systems employing separation and uniform integration models divide students early on based on academic skills and outcomes. Separation models utilize pedagogy with early track selection, employing orientation and division strategies as a means of managing educational pathways. In a uniform integration model, there is no tracking, either between groups or within groups. All students are being subjected to the same educational conditions, at least until a certain age. The only adjustment mechanism is grade repetition, aimed at regulating the flow of students and separating those less capable from those who can meet the imposed performance standards.

3 | RESEARCH CONTEXT: FINLAND, BELGIUM AND SPAIN

In the current study, we focus on three educational systems, respectively, exemplifying the individualized and uniform integration models and the separation model. Finnish 9-year basic education system includes primary (grades 1–6) and lower secondary education (grades 7–9). The Finnish comprehensive school rests on the principle of providing equal educational opportunities, ensuring that all individuals, regardless of gender, religion, socio-economic or cultural background and place of residence, have equal access to education, including higher education. Operated through public funding, the school is cost-free for families. There is no ability grouping in the Finnish comprehensive school. Due to delayed tracking, pupils with different abilities and backgrounds are kept together until the age of 16 when they first choose between academic or vocational studies (VET) after comprehensive school. Finnish education system is known to be highly standardized with a relatively low level of stratification (Tikkanen et al., 2015). In recent decades, however, Finnish educational policies have gone through remarkable changes to a neoliberal direction (Berisha et al., 2017). This has encouraged and promoted the selection of the children from different socio-economic backgrounds to different educational paths within-school levels, which increases social segregation across schools, and thus, endangers the idea of educational equality.

Flanders is the Dutch-speaking, northern part of Belgium. Children usually attend nursery school (i.e. pre-school) from the age of two and a half and education is compulsory from the age of five until the age of 18. At 12 years of age, after six grades of primary education, children transfer to secondary education. There are also six grades of secondary education (comprising both middle school and high school). There are four main tracks in secondary education: academic education preparing for higher education, technical education, vocational education and artistic education (the last of which is marginal in terms of the number of students). Between-school tracking is most common, though within-school tracking exists (Van Houtte et al., 2012). The different tracks are commonly classified hierarchically, placing vocational tracks at the lower end of the scale. At the end of each secondary grade, students receive a certificate indicating whether they can continue their current school path (certificate A) or not (certificate B or C). A certificate B allows progress into the next grade, but the student needs to join another track (usually lower), whereas a certificate C indicates grade retention. Due to the hierarchical nature of the system, a 'cascade effect' has emerged, in which students start in higher tracks, but if they fail, they move to lower—and less valued—tracks. This cascade effect is determined by B certificates, but it is also possible for students to change tracks voluntarily. While in theory it is possible to switch to higher tracks, in practice the flow of students predominantly moves from the academic track, through the technical track, to the vocational track.

Catalonia is the Catalan-speaking, north-eastern part of Spain. Its system includes five different levels. The first level is early childhood education, which is not compulsory and is divided in two cycles. The first cycle is from zero until 3 years old. As it is not compulsory and is not in the public school's network offer, this stage of education has a cost. In contrast, most public schools offer the second cycle of education, from 3 to 6 years old, hence it is more often offered for free. Elementary education, from 6 to 12 years old, is the second level, which is free of charge and compulsory for all students. The third level is secondary education, called ESO (from *Educación Secundaria Obligatoria* in Spanish), which is also compulsory and offered for free in public schools, although there are plenty of private ones. This stage includes four grades, from 12 to 16 years old. After these four grades, at 16 years of age if there is no grade retention, adolescents can choose between different options: transfer to high school, called academic track, or transfer to vocational training, called professional track. School is not compulsory at that stage, so students can also enter the labour market. On the one hand, high school or baccalaureate is a post-compulsory education with a propaedeutic focus to prepare students for university. There are two courses, from 16 to 18 years old, and three modalities: arts, sciences and technology and humanities and social sciences. On the other hand, vocational training is also part of post-compulsory education but is very much focused on insertion into the labour market. Spain is one of the countries in the OECD with the lowest rate of participation in vocational training, namely 13% women and 17% men, whilst the OECD average is 16% and 19% respectively (OECD, 2017). The fifth and last level of the education system is higher education, composed of university education. There are two main access to university, either through advanced vocational training or through high school/baccalaureate. The latter option requires a university entrance exam (SAT).

4 | CONCEPTUAL MODEL

The theoretical model of this study and the hypothesized role that EAs play in the transmission of educational (dis)advantages is depicted in Figure 1. The model recognizes that differences in academic outcomes initially originate from differences in students' social backgrounds. It emphasizes that these differences in social backgrounds affect participation in EAs, thus affecting students' possibilities to acquire non-cognitive skills. Moreover, these non-cognitive skills are expected to foster cognitive skills. Lastly, the model incorporates the variations in these variable relationships across different educational systems.

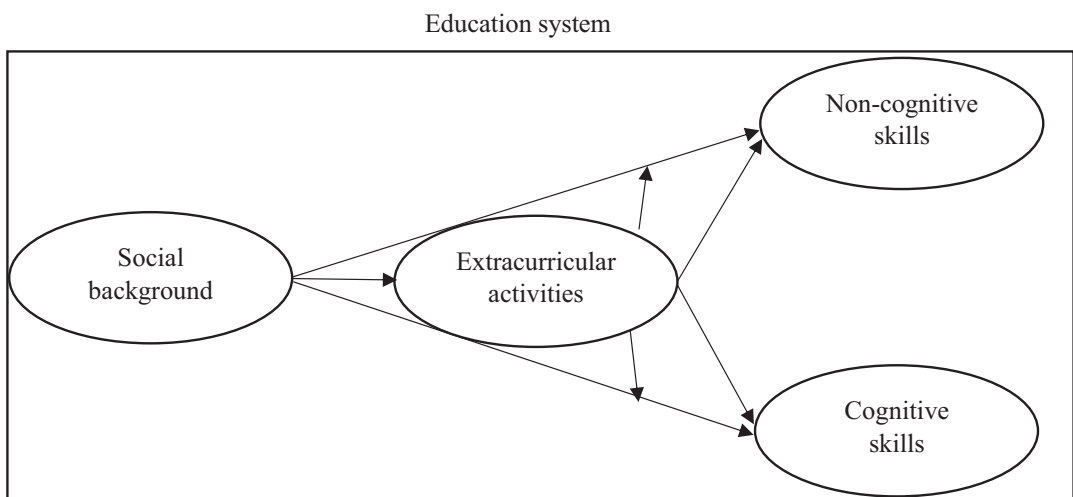


FIGURE 1 Conceptual model of the relationships between variables.

The aim of this study is to analyse the impact of parental socio-economic status on students' participation in extracurricular activities and its correlation with both non-cognitive and cognitive skills across three distinct European cities. Building on the literature review we put forward various hypotheses.

Hypothesis 1. Students with lower socioeconomic status are likely to exhibit fewer non-cognitive and cognitive skills.

Hypothesis 2. Extracurricular activities moderate the impact of socioeconomic background on the non-cognitive and cognitive skills.

Hypothesis 3. The moderating effect of extracurricular activities on the effect of socioeconomic background on non-cognitive and cognitive skills is lower in countries with comprehensive education system.

5 | METHOD

5.1 | Data

This study draws on the International Study of City Youth (ISCY), a cross-national panel study. The study tracks a cohort of students beginning in the academic year 2013–2014 when the students were in the last year of compulsory secondary education (around 15 years old) in each city and follows their progress for a maximum of 5 years. For the present study, we used data from the first wave of data collection in Turku, Ghent and Barcelona. The data were collected similarly in every city using a census approach; all lower secondary schools in Turku (27 schools), Ghent (39) and Barcelona (29) were asked to participate in the study, yielding a response rate of 42.5% in Turku (12 schools), 76.9% in Ghent (30 schools) and 92% in Barcelona (27 schools). The study participants included all students with parental consent in the classrooms who were present at schools at the time of data collection. Altogether 5397 students participated in the study: 1023 took part in Turku, 2317 in Ghent and 2057 in Barcelona.

5.2 | Measures

5.2.1 | Outcomes

Non-cognitive skills

The non-cognitive skills were analysed using two scales, of which one measured *intrapersonal* and the other *interpersonal skills* (Murnane & Levy, 1996). The intrapersonal skills scale comprised four items assessing students' conscientiousness (e.g. 'I always get my work in on time' or 'I always try to do my best') and three items measuring self-management (e.g. 'I tend to be lazy' or 'I am easily distracted in class'). The interpersonal skills scale included four items measuring communication skills (e.g. 'I express ideas clearly in written text' or 'I am good at getting ideas across in discussions') and five items to measure collaboration skills (e.g. 'I work well in groups' or 'I take time to help others'). Students answered these items on a 4-point scale (1 = strongly disagree to 4 = strongly agree). A confirmatory factor analysis with varimax rotation performed on the 14 items confirmed the existence of two latent factors, each corresponding to intra- and interpersonal skills (for factor loadings, see Table 1) Regression factor scores were used to compute factor scores, which were eventually standardized to a mean of zero and standard deviation of 1 (see Table 2 for univariate characteristics).

TABLE 1 Factor loadings of the confirmatory factor analysis.

	Intrapersonal skills	Interpersonal skills
I understand how others are feeling	0.628	0.017
I get along well with others	0.599	0.085
I work well in groups	0.611	0.113
I treat others fairly	0.517	0.176
I take time to help others	0.446	0.190
I express ideas clearly in oral presentations	0.660	0.028
I express ideas clearly in written text	0.634	0.069
I am good at getting ideas across in discussions	0.615	-0.141
I am good at leading others	0.593	0.017
I always try to do my best	0.124	0.640
I always get work in on time	0.258	0.631
I persevere with a job until it is done	0.381	0.599
I am a hard-working student	0.258	0.729
I am easily distracted in class	0.086	-0.610
I tend to be lazy	0.072	-0.677
I tend to leave things to the last minute	0.090	-0.686

Intrapersonal skills alpha = 0.775.

Interpersonal skills alpha = 0.786.

Cognitive skills

The International Study of City Youth includes achievement tests, based on standardized questions used in the PISA (2012) tests. Cognitive skills were assessed using students' scores on the reading test. For the total sample, the mean score was 12.09 ($SD=4.27$). There were some differences between the cities in reading scores ($F=21.07$, $p<.001$), with students from Turku ($M=12.46$; $SD=4.03$) and Ghent ($M=12.35$; $SD=4.41$) scoring higher than their peers in Barcelona ($M=11.53$; $SD=4.17$).

5.2.2 | Independent student-level variables

Participation in EAs was measured with six binary indicators. The students were asked to indicate (1=yes, 0=no) whether they participated in any of the following extracurricular activities at school: drama (7.7%), music (11.3%), math or science contests (13.2%), sports contests (31.1%), student council (13.4%) or community service (11.8%). An additional dichotomized variable was built indicating whether the students took part in at least one of the proposed activities (coded 1) or not (coded 0). Altogether 49.8% of the respondents indicated to have taken part in at least one of these extracurricular activities. The highest involvement in extracurricular activities was recorded in Barcelona (62.4%), followed by Turku (51.5%) and Ghent (43.4%).

Student demographics included the variables of gender, age, socio-economic status and immigrant background. The gender was coded 1 for girls (51.7%) and 0 for boys (47.5%). The mean age of the respondents was 15.28 ($SD=0.71$). To measure students' socio-economic status (SES), we used the International Socio-Economic Index (ISEI; see Ganzeboom & Treiman, 1996) to code the occupational status of students' parents. We applied the score of the parent with the highest occupational status as the SES score of the family. Family SES ranged from 11.56 to 88.96, with a mean of 54.94 ($SD=23.04$; see Table 2). Differences arose between the cities ($\chi^2(2)=48.83$, $p<.001$), with Ghent having the highest ($M=57.2$, $SD=23.0$) and Barcelona having the lowest mean SES ($M=52.0$,

TABLE 2 Univariate characteristics.

Variables	%	M	SD	N
Dependent variables				
Interpersonal skills		0	1	4943
Intrapersonal skills		0	1	4943
Cognitive skills				
City distribution				
Barcelona	38.1%			2057
Turku	19.0%			1023
Ghent	42.9%			2317
Total	100%			5397
School level				
SES composition		52.68	13.16	69
Ethnic composition		0.33	0.27	69
Student level				
SES		54.94	23.04	5019
Extracurricular activities	49.80% ^a			5160
Age		15.28	0.71	5371
Gender				5356
Girl	51.7%			
Migrant				5281
Migrant	28.4%			

^aPercentage of respondents who indicated having participate in at least one of the extracurricular activities.

$SD=23.5$). Immigrant background was measured by asking the students whether they were themselves or their parents were born in the country in which the survey was administered—Spain, Finland or Belgium. Based on the answers, a dichotomous variable was formed; students were considered having an immigrant background when at least one of the family members was born abroad. Eventually, 28.4% of the respondents were considered from immigrant descent. The number of students with an immigrant background was remarkably lower in Finland (11.8%) compared to Ghent (31%) and Barcelona (35.2%).

5.2.3 | Independent school-level variables

The *SES composition* was operationalized by calculating the mean of students' individual SES (see above) per school (e.g. Opdenakker & Damme, 2001). Within the sample, the mean SES composition was 52.67 ($SD=13.16$). Respectively, the *Immigrant composition* of the schools was operationalized by calculating the proportion of immigrant students in each school based on the individual-level data. The mean immigrant composition in the sample was 0.33 ($SD=0.27$).

5.3 | Research design

As the data have a nested structure—students are nested in schools, which are nested in cities—multi-level analysis was appropriate (Raudenbush & Bryk, 2002). Given the low number of cities, however, it was impossible to

include city-level random intercepts—that is, to include the cities as a separate level. Thus, the city fixed effects, that is, dummy variables for each city at the school level, were applied (see also Bol et al., 2014; Demanet & Van Houtte, 2019). Since the Ghent sample had the most respondents, it was used as the reference category.

First, we estimated unconditional models, that is, models with no predictors. In the next step (Model 1), the effect of socio-economic status on the outcomes interpersonal, intrapersonal and cognitive skills was analysed. In addition, the interaction terms between the city dummy variables and SES were included in the model to allow the effect of SES to vary between the cities. Extracurricular activities were added to Model 2 to assess whether the hypothetical SES effects on the non-cognitive skills were moderated by them. Again, the interaction terms between extracurricular activities and the city dummy variables were included to allow effects to vary between the cities. In the last model (Model 3) interaction terms between SES and extracurricular activities were added and allowed to interact with the city dummy variables. By enabling the variation of the interaction effects between the cities we examined whether engaging in extracurricular activities buffered or magnified the effects of SES on skills differently across the cities. To account for spurious relationships, at the individual level, we controlled for gender, age and immigrant background, and at the school level, the SES and the immigrant composition of the school were controlled for. To ensure model stability, all variables but the dichotomous ones were grand-mean centred.

6 | RESULTS

The unconditional models showed that 3.03% ($\sigma^2=0.969$; $\tau_0=0.030$; $p<.001$) of the variance in interpersonal skills, 2.24% ($\sigma^2=0.979$; $\tau_0=0.022$; $p<.001$) of the variance in intrapersonal skills and 31.77% ($\sigma^2=12.751$; $\tau_0=5.938$; $p<.001$) of the variance in cognitive skills was situated between schools. This warrants the use of multi-level modelling.

6.1 | Non-cognitive skills

The results of the analyses on interpersonal skills are displayed in Table 3. Model 1 showed that socio-economic status was not related to interpersonal skills, neither in Ghent ($\gamma=0.002$; $p>.05$), nor in Turku ($\gamma=0.002+0.004=0.006$; $p>.05$). The interaction term for Barcelona, however, demonstrated that the effect of socio-economic status was statistically significant there ($\gamma=0.002+0.003=0.005$; $p<.05$). Model 2 demonstrated that engaging in extracurricular activities was, as expected, related to higher interpersonal skills. This effect was the same in Ghent and Barcelona ($\gamma=0.119$; $p<.01$). The association, furthermore, was stronger in Turku ($\gamma=0.119+0.359=0.478$; $p<.001$).

Model 3 revealed interaction effects between socio-economic status and extracurricular activities. These interaction effects can be better understood when plotting the conditional equations for students who either did follow extracurricular activities or did not, in the respective cities (see Figure 1). First, in Ghent, it seems the effect of socio-economic status on interpersonal skills, which is borderline significant and positive for students who have not followed extracurricular activities ($\gamma=0.003$; $p=.079$), is nullified for students who follow extracurricular activities ($\gamma=0.003-0.003=0.000$; $p=.066$). This interaction term between SES and extracurricular activities did not differ between Ghent and Turku ($\gamma=0.001$; $p>.05$). In Barcelona, however, the situation is somewhat different. While, for students who do not attend extracurricular activities, socio-economic status related positively to interpersonal skills as in Ghent ($\gamma=0.003$; $p=.079$), the interaction between SES and extracurricular activities is positive ($\gamma=-0.003+0.005=0.002$; $p=.052$). This means that the effect of SES on interpersonal skills, for students who have attended extracurricular activities, is significantly positive in Barcelona ($\gamma=0.003+0.002=0.005$), as can also be seen in Figure 1. While engaging in extracurricular

TABLE 3 The association between socio-economic status, extracurricular activities and interpersonal skills, in Ghent, Turku and Barcelona. Results of multi-level analyses.

	Model 1	Model 2	Model 3
Intercept			
γ	-0.167***	-0.218***	-0.218***
SE	0.039	0.049	0.048
School level			
SES composition			
γ	0.0001	-0.001	-0.001
SE	0.004	0.004	0.004
Ethnic composition			
γ	0.015	-0.046	-0.042
SE	0.181	0.188	0.186
City fixed effects (Ref cat: Ghent)			
Barcelona			
γ	0.314***	0.224***	0.218***
SE	0.048	0.065	0.063
Turku			
γ	0.072	-0.132	-0.129
SE	0.076	0.084	0.083
Individual level			
Gender			
γ	0.107**	0.119**	0.118**
SE	0.038	0.039	0.039
Age			
γ	0.013	0.016	0.016
SE	0.028	0.028	0.028
Migrant			
γ	-0.028	-0.035	-0.036
SE	0.045	0.043	0.043
Socio-economic status			
Main effect			
γ	0.002	0.001	0.003 ^o
SE	0.001	0.001	0.001
*Barcelona			
γ	0.003*	0.003*	0.0003
SE	0.001	0.001	0.002
*Turku			
γ	0.004 ^o	0.003	0.003
SE	0.002	0.002	0.003
Extracurricular activities			
Main effect			

(Continues)

TABLE 3 (Continued)

	Model 1	Model 2	Model 3
γ		0.119**	0.129***
SE		0.04	0.038
*Barcelona			
γ		0.096	0.092
SE		0.065	0.059
*Turku			
γ		0.359***	0.349***
SE		0.075	0.075
Interactions			
SES* Extracurricular activities			
Main effect			
γ			-0.003 ^o
SE			0.002
*Barcelona			
γ			0.005 ^o
SE			0.003
*Turku			
γ			0.001
SE			0.004
Variance components			
Intercept			
U_0	0.021***	0.022***	0.022***
Gender			
U_1	0.033**	0.039***	0.038***

^o $p < 0.1$. * $p \leq 0.05$. ** $p \leq 0.01$. *** $p \leq 0.001$.

activities thus seems to nullify the socio-economic gradient in interpersonal skills in Ghent and Turku, it increases it in Barcelona.

The results for intrapersonal skills are displayed in Table 4. From the first model, it seems that socio-economic status was unrelated to intrapersonal skills ($\gamma = -0.001$; $p > .05$) in all cities. In the second model, engaging in extracurricular activities appears as a significant feature, as in Ghent and Turku, partaking in such activities was related to higher scores on intrapersonal skills ($\gamma = 0.099$; $p < .05$). This association was larger in Barcelona ($\gamma = 0.099 + 0.117 = 0.216$; $p = .088$). From the third model, it seemed that there was no interaction effect between socio-economic status and extracurricular activities since all interaction terms were not statistically significantly related to on intrapersonal skills.

6.2 | Cognitive skills

The analyses on cognitive skills are depicted in Table 5. The first model shows socio-economic status to be related to cognitive skills: the higher the socio-economic status of students, the better they performed on the reading

TABLE 4 The association between socio-economic status, extracurricular activities and intrapersonal skills in Ghent, Turku and Barcelona. Results of multi-level analyses.

	Model 1	Model 2	Model 3
Intercept			
γ	-0.219 ^{***}	-0.252 ^{***}	-0.252 ^{***}
SE	0.042	0.043	0.043
School level			
SES composition			
γ	0.001	-0.001	-0.001
SE	0.003	0.003	0.003
Ethnic composition			
γ	0.365 [*]	0.333 [*]	0.339 [*]
SE	0.15	0.15	0.15
City fixed effects (Ref cat: Ghent)			
Barcelona			
γ	-0.012	-0.107	-0.114
SE	0.049	0.06	0.06
Turku			
γ	0.241 ^{***}	0.232 ^{***}	0.233 ^{***}
SE	0.058	0.056	0.056
Individual level			
Gender			
γ	0.278 ^{***}	0.290 ^{***}	0.290 ^{***}
SE	0.042	0.041	0.041
Age			
γ	-0.129	-0.119	-0.118
SE	0.032	0.03	0.03
Migrant			
γ	0.079	0.066	0.066
SE	0.046	0.047	0.047
Socio-economic status			
Main effect			
γ	-0.001	-0.001	-0.001
SE	0.001	0.001	0.001
[*] Barcelona			
γ	0.00025	0.00027	-0.001
SE	0.002	0.002	0.002
[*] Turku			
γ	0.001	0.001	0.002
SE	0.002	0.002	0.002
Extracurricular activities			
Main effect			

(Continues)

TABLE 4 (Continued)

	Model 1	Model 2	Model 3
γ		0.099 [*]	0.097 [*]
SE		0.044	0.045
[*] Barcelona			
γ		0.117 [°]	0.126 [°]
SE		0.063	0.065
[*] Turku			
γ		-0.005	-0.002
SE		0.064	0.064
Interactions			
SES [*] Extracurricular activities			
Main effect			
γ			0.001
SE			0.002
[*] Barcelona			
γ			0.001
SE			0.003
[*] Turku			
γ			-0.001
SE			0.004
Variance components			
Intercept			
U_0	0.014 [*]	0.010 [°]	0.010 [*]
Gender			
U_1	0.054 ^{***}	0.042 ^{**}	0.042 ^{**}
Age			
U_2	0.019 ^{**}	0.012 ^{**}	0.011 ^{**}

[°] $p < 0.1$. ^{*} $p \leq 0.05$. ^{**} $p \leq 0.01$. ^{***} $p \leq 0.001$.

test ($\gamma = 0.020$; $p < .001$). The interaction terms showed this effect to be the same in Barcelona ($\gamma = 0.004$; $p > .05$), but larger in Turku ($\gamma = 0.020 + 0.015 = 0.035$; $p < .05$). Interestingly, model 2 shows that engaging in extracurricular activities was unrelated to students' cognitive outcomes ($\gamma = 0.256$; $p > .05$), and the interaction terms showed this effect to be the same across all cities.

Nevertheless, model 3 shows that extracurricular activities are important for cognitive skills since they seem to moderate the socio-economic status effects (see [Figure 2](#) for a graphical depiction of these effects). Specifically, the effect of socio-economic status in Ghent and Barcelona, for students who do not partake in extracurricular activities, was positive ($\gamma = 0.016$; $p < .001$) and this effect was – contrary to expectations – even larger for students who do partake in extracurricular activities ($\gamma = 0.016 + 0.011$; $p < .001$). The same can be observed in Turku, although the effect of SES is larger there, for both values of the measure on extracurricular activities (for non-participation in EAs: $\gamma = 0.016 + 0.019 = 0.035$; $p = .057$; for participation in EAs: $\gamma = 0.035 + 0.011 = 0.046$; $p = .057$). As such, it appears that, in all cities, engaging in extracurricular activities magnifies the effect of socio-economic status on cognitive skills similarly ([Figure 3](#)).

TABLE 5 The association between socio-economic status, extracurricular activities and cognitive skills (reading score), in Ghent, Turku and Barcelona. Results of multi-level analyses.

	Model 1	Model 2	Model 3
Intercept			
γ	12.175 ^{***}	12.078 ^{***}	12.082 ^{***}
SE	0.252	0.249	0.253
School level			
SES composition			
γ	0.084 ^{***}	0.083 ^{***}	0.083 ^{***}
SE	0.021	0.02	0.02
Ethnic composition			
γ	-0.888	-0.915	-0.907
SE	1.095	1.046	1.050
City fixed effects (Ref cat: Ghent)			
Barcelona			
γ	-0.172	-0.097	-0.100
SE	0.301	0.331	0.336
Turku			
γ	0.104	0.301	0.294
SE	0.378	0.315	0.321
Individual level			
Gender			
γ	-0.146	-0.137	-0.139
SE	0.161	0.167	0.167
Age			
γ	-0.816 ^{***}	-0.822 ^{***}	-0.822 ^{***}
SE	0.103	0.105	0.104
Migrant			
γ	-0.872 ^{***}	-0.879 ^{***}	-0.874 ^{***}
SE	0.181	0.179	0.179
Socio-economic status			
Main effect			
γ	0.020 ^{***}	0.021 ^{***}	0.016 ^{***}
SE	0.004	0.004	0.004
^a Barcelona			
γ	0.004	0.004	0.008
SE	0.005	0.005	0.01
^a Turku			
γ	0.015 [*]	0.016 [*]	0.019 ^o
SE	0.006	0.007	0.01
Extracurricular activities			
Main effect			

(Continues)

TABLE 5 (Continued)

	Model 1	Model 2	Model 3
γ		0.256	0.207
SE		0.205	0.193
*Barcelona			
γ		-0.185	-0.135
SE		0.275	0.273
*Turku			
γ		-0.492	-0.447
SE		0.364	0.354
Interactions			
SES* Extracurricular Activities			
Main effect			
γ			0.011 ^o
SE			0.007
*Barcelona			
γ			-0.011
SE			0.013
*Turku			
γ			-0.009
SE			0.015
Variance components			
Intercept			
U_0	1.141 ^{***}	1.043 ^{***}	1.039 ^{***}
Gender			
U_1	0.745 ^{***}	0.780 ^{***}	0.785 ^{***}
Immigrant			
U_3	0.465 ^{***}	0.409 [*]	0.403 [*]

^o $p < 0.1$. ^{*} $p \leq 0.05$. ^{***} $p \leq 0.001$.

7 | DISCUSSION

The aim of the present study was to analyse the impact of EAs on social disparities in both cognitive and non-cognitive outcomes among students from three different models for addressing academic heterogeneity. In evaluating the first hypothesis, regarding the association between students' social background and their non-cognitive and cognitive skills, the findings revealed a consistent pattern. Higher socio-economic status is associated positively with better performance on reading tests, a trend substantiated by numerous studies (Bourdieu & Passeron, 1990; Doren & Grodsky, 2016; Lareau, 1987; Sullivan, 2001). In general, students from Turku have the best scores among all respondents, a result aligned with both recent PISA results and the literature review (Tikkanen et al., 2015). However, it is noteworthy that the impact of SES on reading scores appeared somewhat more pronounced in the Finnish education system. Regarding cognitive skills, the Finnish system, as an example of the individualized integration model, thus seems not to be more equitable than the separation and uniform integration systems proposed by Dupriez and Dumay (2005) and Mons (2007). Socio-economic status was not

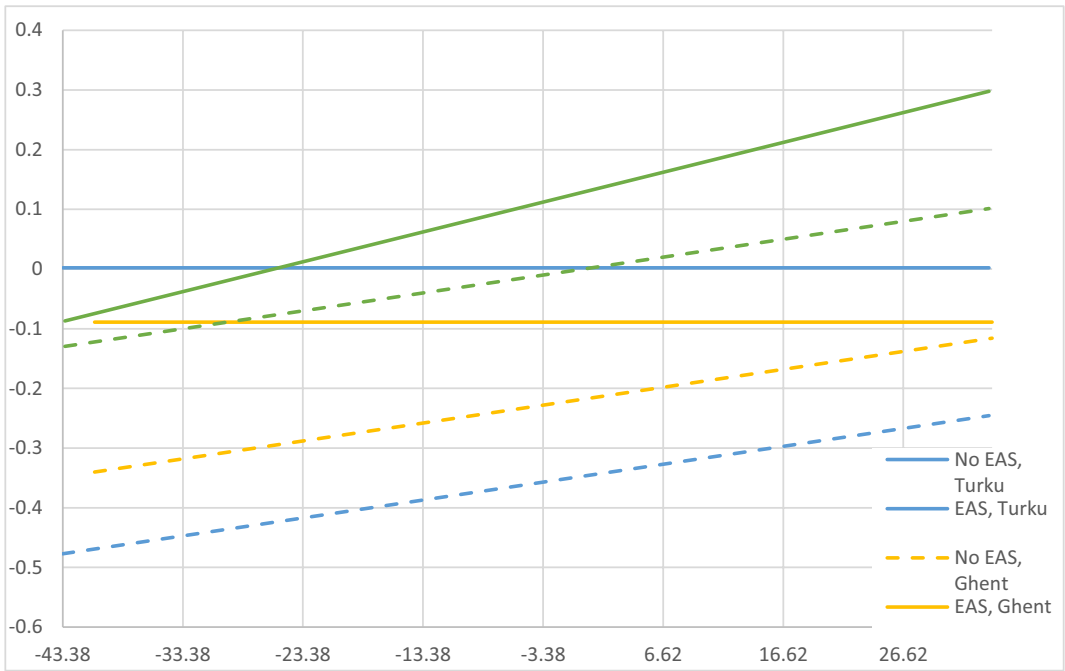


FIGURE 2 The interaction effect between socio-economic status and extracurricular activities on interpersonal skills in Ghent, Turku and Barcelona. Results of multi-level analyses.

related to interpersonal skills, neither in Ghent nor in Turku. However, the interaction term for Barcelona showed a statistically significant impact of SES on interpersonal skills. Consequently, the first hypothesis is partially validated, as students with lower socio-economic backgrounds exhibit fewer cognitive skills across all countries, but fewer non-cognitive skills only in Barcelona.

While we found no significant association between extracurricular activities and students' cognitive outcomes across all cities, the importance of these activities became evident in explaining non-cognitive skills. Engaging in extracurricular activities was related to higher interpersonal skills in all cities. Youth engaged in EAs demonstrated enhanced collaboration and communication skills, potentially fostering supportive social relationships at school (Eccles et al., 2003; See et al., 2017) and, consequently, increasing their sense of belonging (Finn, 1989; Juvonen et al., 2012). The social mechanism known as the "spillover effect" (Elster, 1993) may explain the link between participating in EAs and interpersonal skills at school. In this case, if a student 'works well in groups' or 'effectively communicates ideas' during extracurricular activities, they are likely to apply these interpersonal skills within the school environment. Simultaneously, the mechanism of 'transferability' (Merino, 2007) contributes to understanding this association, as students transfer to the school environment the interpersonal skills they acquired in EAs. From the perspective of human capital theory, families investing in their children's extracurricular participation are fostering skills that can enhance their educational and professional opportunities.

The analysis of the moderating role of EAs in the relationship between socio-economic status and academic skills (Hypothesis 2) revealed unexpected findings. In Ghent and Barcelona, the effect of SES for students who do not partake in extracurricular activities is positive but—contrary to expected—is larger for students who participate in extracurricular activities. The same is observed in Turku, where the effect of SES was even more pronounced. Therefore, contrary to Hypothesis 2, EAs do not seem to counterbalance deficits in cultural capital acquired at home, as argued among others by Sullivan (2001). Instead, they seem to magnify educational inequality. Our finding challenges previous empirical research that has proposed the capacity of extracurricular activities to reduce educational inequalities in terms of school attainment (Merino, 2007; Morris, 2015; Nordlander, 2016).

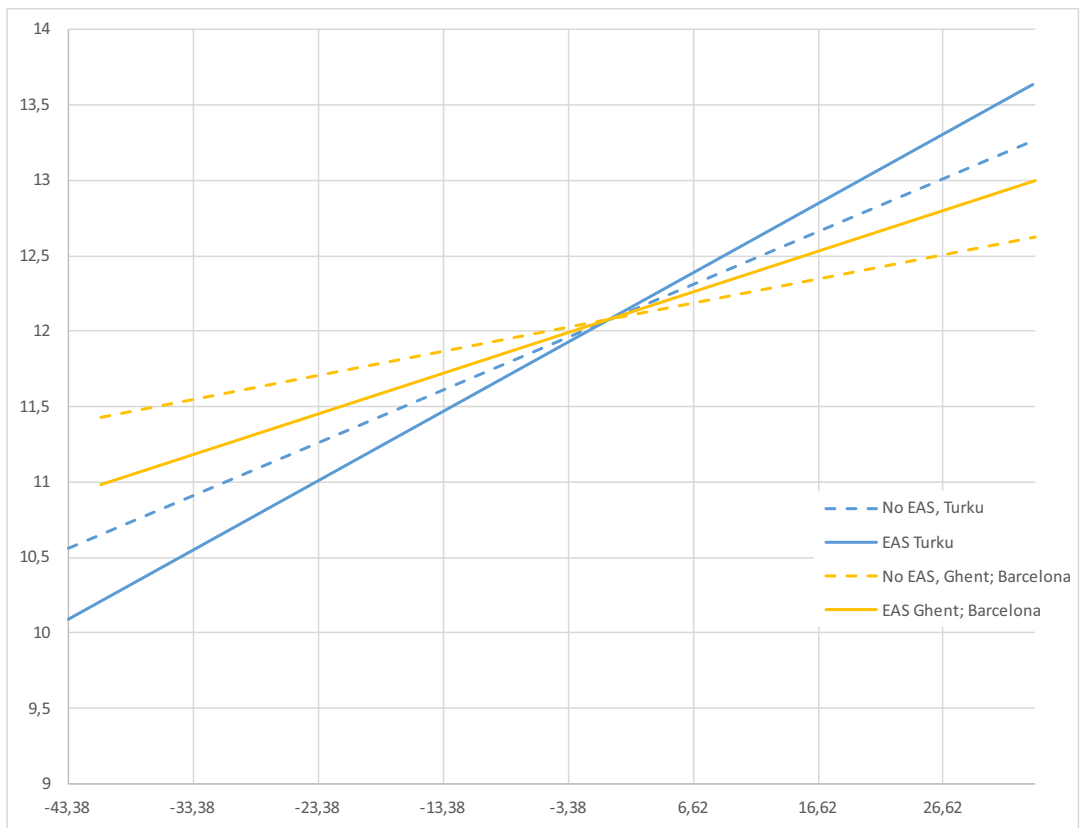


FIGURE 3 The interaction effect between socio-economic status and extracurricular activities on cognitive skills in Ghent, Turku and Barcelona. Results of multi-level analyses.

Aligning with Hypothesis 3, we found cross-national differences in the association between SES, EA participation and cognitive skills. Especially in Finland, participation in extracurricular activities rather strengthens the effect of socio-economic status on cognitive skills instead of neutralizing it. This partly aligns with our hypothesis that in countries with the comprehensive education systems, such as Finland, participation in EAs has less potential to moderate the effect of SES on cognitive skills since they show less educational inequalities in the first place. It stays, however, for further studies to examine why participation in EAs strengthens the socio-economic gradient in cognitive skills.

The study showed that EAs reduce the effect of SES on interpersonal skills for students in Ghent and Turku. In these cities, EAs contribute to reducing social inequality linked to interpersonal skills. This implies that students who may not have acquired sufficient communication and collaboration abilities at home could potentially compensate for this deficiency through participation in EAs, aligning with the literature and Hypothesis 3 (Morris, 2015; Nordlander, 2016). Thus, depending on the skill measured, extracurricular activities may also possess the ability to puffer social inequalities in academic skills.

The situation is different in Barcelona, where the effect of SES on interpersonal skills for students who have attended extracurricular activities was significantly positive. Therefore, in Barcelona, engaging in extracurricular activities appears to accentuate the socio-economic gradient in interpersonal skills. This highlights cross-national variation in the associations between SES, EAs and non-cognitive skills as hypothesized; the moderation effect of extracurricular activities on the influence of socio-economic background on non-cognitive skills is more pronounced in countries without comprehensive education systems, such as Spain.

The findings of the present study should be interpreted considering the following limitations. The measured indicator of participation in EAs is not without its shortcomings, as it fails to account for factors such as the intensity of participation or the quality of activities. Additionally, the inclusion of only in-school activities in the analyses precludes comparisons to activities conducted outside the school, potentially resulting in a differential effect on academic outcomes.

The identified limitations serve as a starting point for future lines of research. For instance, a more nuanced exploration could involve analysing the impact of each extracurricular activity individually (e.g. drama, sports, music) while considering factors like the intensity of participation (daily, weekly frequency). Another promising avenue for future research is linked to the educational system level. The unexpected finding suggesting a slightly higher impact of SES on reading scores in individualized integration models prompts questions about the underlying explanation and whether extracurricular activities may play a role in this phenomenon.

Interpreting our study results from the human capital perspective, all the observed education systems have the potential to invest in extracurricular participation to enhance the non-cognitive skills of young people, especially regarding interpersonal skills. When students engage in EAs, they develop increased collaboration and communication skills. While we didn't uncover a direct correlation between EAs and improved reading scores, educational systems that invest in such activities can anticipate indirect improvement in academic achievement through the acquisition of non-cognitive skills.

From the perspective of educational inequalities and cultural reproduction, the findings indicating that extracurricular activities may amplify the socio-economic gradient in academic skills raise concern. Whether this suggests a higher level of involvement from families with higher socio-economic status in encouraging their children to participate in such activities is a matter of interpretation. We underscore the importance of making these activities accessible to all young people. Implementing measures such as reducing the cost of extracurricular activities, expanding grant systems for youth with limited resources and broadening the range of extracurricular offerings in neighbourhoods with fewer facilities can encourage participation from young people of diverse backgrounds.

8 | CONCLUSION

This study offers valuable insights into the impact of extracurricular activities on students' cognitive and non-cognitive skills, employing a cross-national analysis. In conclusion, extracurricular activities play a significant role in influencing students' educational outcomes. However, the mechanisms underlying these effects are not straightforward; instead, they vary in strength and direction depending on the skill observed and the school system studied. As expected, extracurricular activities were related to higher non-cognitive skills in every city. In addition, EAs also play a moderator role either mitigating (in Turku and Ghent) or strengthening (Barcelona) the socio-economic gradient in interpersonal skills. Contrary to what expected, participation in EAs magnified the effect of socio-economic status on cognitive skills in all cities.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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