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This is a pre print version of the following article:

Original

Subjective well-being and school outcomes among children of immigrants and natives in Italy / Ambrosetti, E; Bettin, G; Cela, E; Paparusso, A. - In: POPULATION SPACE & PLACE. - ISSN 1544-8444. - 29:4(2023). [10.1002/psp.2639]

Availability:

This version is available at: 11566/315709 since: 2024-03-23T17:08:28Z

Publisher:

Published

DOI:10.1002/psp.2639

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Subjective well-being and school outcomes among children of immigrants and natives in Italy

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Authors' version

Article published in **Population, Space and Place**, <https://doi.org/10.1002/psp.2639>
<https://onlinelibrary.wiley.com/doi/abs/10.1002/psp.2639>

Abstract

Children of immigrants are generally disadvantaged in terms of educational outcomes in most European countries and this remains true even after controlling for their socio-economic status.

Factors affecting the long-term educational careers among children of immigrants and natives have been broadly investigated in the literature, although limited attention has been paid so far to the role of subjective well-being in this context.

In this paper we aim to fill this gap by analyzing how subjective well-being in the school and family context is related to objective school outcomes of immigrant and native children residing in Italy, after controlling for several relevant socio-demographic factors.

We use rich and unique data from the “Integration of the Second Generation” survey carried out by the Italian National Institute of Statistics (ISTAT) in 2015, that has not been used to analyse this relationship so far. The national representative sample includes 68,127 students interviewed in both lower and upper secondary schools. Around 47% of them are immigrant children without Italian citizenship.

Our results show that subjective well-being is positively correlated with school performance, but well-being at school is much more important for immigrant students' achievements, as compared to their native peers, especially in the lower secondary school. The same result does not hold for well-being in the family domain.

Keywords: school achievements, subjective well-being, Italy

Introduction

In Europe research on children of immigrants and their integration processes has developed with a considerable delay compared to the United States. It is from the 1980s that the academic debate addressed migrants' socio-economic integration, focusing later on, also on the integration patterns of the second generation (Crul & Vermeulen, 2003; Timmerman et al., 2003; Worbs, 2003; Heat et al., 2008; Giovinazzi & Cocchi, 2022).

Investigating the pathways of immigrant children is a topic of great interest for many reasons. Firstly, youth of immigrant origin are constantly growing in all destination countries (Crul et al., 2012). Secondly, their integration patterns represent a good test for the integration policies in the host societies, considering that the conditions experienced by the first generation strongly influence the trajectories that their children undertake (Santelli, 2001; Ricucci, 2010; Ambrosini, 2011; Fleischmann et al., 2011). A core dimension for the integration of immigrants' children is represented by school performance, which has been largely analysed in Europe so far (Zhou & Lee, 2007; Kasinitz et al., 2008; Ricucci, 2010; Crul et al., 2012). Some studies have compared second generation migrants with native peers (Ricucci, 2010; Crul et al., 2012; Fangen et al., 2012; Beauchemin et al., 2015; Santagati & Colussi, 2020); others have analysed the role played by the school system and the family in determining the chances of academic success (Crul & Vermeulen, 2003; Crul et al., 2012; Crul, 2015); others have focused on the role of teachers in the persistence of possible disadvantages in education (Triventi, 2020; van Ewijk, 2011; Sprietsma, 2013).

Despite the increasing attention towards school performance of the second generation, very little is known about the role that subjective well-being (SWB) plays in such performance. SWB refers to "how people feel or how they assess their lives" (OECD 2013, 123); it has recently become prominent both in the European scientific debate and in the policy agenda (e.g., Arpino & de Valk, 2018; Hendriks & Burger, 2019; OECD, 2018a; 2020a; Stranges et al., 2020). In fact, alongside objective indicators related to health, educational careers, or economic status, used to assess quality of life and well-being, subjective well-being has also become important to measure individual and societal

progress (Bache, 2019; Corlet Walker et al., 2020; Kaminitz, 2020) and the “apparent quality of life within a country or a specific social group” (Veenhoven, 2012, 3). As for immigrants, SWB can be used to evaluate the integration process within the country of residence, since it conveys immigrants’ perceived conditions (Sand & Gruber, 2018).

The most recent international research has shown that there are significant differences between adults and children’ SWB (e.g., Bimonte et al., 2020; Losada-Puente et al., 2020). Whereas adults’ SWB is more dependent on objective life conditions, children’s SWB is sensitive to changes in subjective and relational variables, including relationship with parents and peers; this makes their SWB less stable during the early stages of their life (Losada-Puente et al., 2020). The school environment, in particular, represents the main place of socialization for children and plays a key role in shaping their inclusion path into society (e.g., Balatsky & Diener, 1993; Konu et al., 2002; Marquez & Main, 2021). Especially in the case of immigrants’ children, SWB at school is often used as a proxy of perceived integration and of the possibility of gaining parity with natives (OECD, 2018b).

In Italy, the academic debate on school performance of children with migration background is quite recent and was triggered by their increasing numbers in the last two decades (e.g., Ambrosini & Molina, 2004; Strozza, 2008; 2015; Barban & White, 2011; Di Bartolomeo, 2011; Minello & Barban, 2012; Mussino & Strozza, 2012; Azzolini & Barone, 2013; Contini, 2013; Triventi, 2020; Gabrielli & Impicciatore, 2022). In 2020 children of immigrants represent about 20% of the total immigrant population (1,022,471 individuals between 0-17 years), and account for 10.8% of the youth resident population, while they were 2.9% of the youth resident population in 2002 and 9.4% in 2011 (ISTAT, 2021). The phenomenon is well visible in the school system; from 1999 to 2008, students with non-Italian citizenship increased overall by 425.9% (+510 thousand); in the following decade, the rate of growth was much lower (+27.3%), but still significant. Most of them are second generation students, i.e. born in Italy to non-Italian parents: in the 2018/2019 academic year, Italian schools hosted 857,729 students of immigrant origin (10% of total students), 64.5% of whom was born in Italy (Ministero dell’Istruzione, 2020). If we look at the origin countries, there is a huge heterogeneity with

a prevalence of students from Eastern Europe (mostly from two of the largest communities, Romania, and Albania), followed by North Africa (Morocco) and Asia (China and India), a picture that reflects the general composition of the migrant population in the country (Ministero dell'Istruzione, 2020). Following the rapid increase in the numbers of immigrants' children in the last decades, Italian research started to focus on the key determinants of migrant-native educational gaps, highlighting the large native-migrant educational gap and the role of socioeconomic background and cultural factors, which were important especially for the most deprived groups (Azzolini et al., 2019)¹. Previous research has explored, for example, the role and quality of relationship with peers and teachers, considered as a possible explanation of the migrant-native educational gaps, and as a key factor for their subjective well-being and school integration (Colombo et al., 2014). A recent special issue in the *Journal of Ethnic and Migration Studies* has investigated how children of immigrants can overcome existing barriers and gaps in educational performance compared to natives in Southern European countries (Gabrielli and Impicciatore 2022); the picture that emerged is that, compared to other European countries, children of immigrants in Italy face the highest educational disadvantage and have the highest percentage of early drop outs from education and training; Triventi et al. (2022) for example, found that the native-migrant gap in Italian and mathematical skills in primary and lower secondary school depend upon family's socio-economic background (parents' educational and occupational levels), language barriers and negative school-related attitudes and behaviours; in the same vein, Gabrielli et al. (2022) found a north-south European gradient in students' resilience and a lower resilience among students with migration background as compared to natives, highlighting the key role of the quality of school environment especially for migrant students. In general, since the immigration phenomenon in Italy is more recent compared to northern European countries, the Italian school system still lags behind in compensatory strategies to reducing the gap of disadvantaged students with a migration background (Gabrielli and Impicciatore 2022).

¹ For an overview of studies carried out from 1990 to 2017 see Azzolini et al. (2019).

Although research on children of immigrants in Italy has rapidly expanded, the role of SWB on school outcomes of migrant students compared to native ones is still relatively unexplored.

In this paper, we aim to fill this gap and contribute to the literature by investigating the influence of SWB in the school and family context on school outcomes of secondary school students in Italy and exploring the potential differences between native students and students with migration background in this respect. Our analysis is based on the Survey on Integration of the Second Generation (ISG) carried out in 2015 by the Italian National Institute of Statistics (ISTAT, 2017) in a random sample of lower and upper secondary schools that had at least 5 foreign students. Out of 68,127 interviewees, 31,687 were foreign citizens (sampling units) and 36,440 had Italian citizenship (control group). The extensive questionnaire covered all the main aspects of teenagers' life. Compared to other data sources on students in Italy, such as the Invalsi national tests or the OECD Programme for International Student Assessment (PISA) surveys, it is a unique source of information on children with migration background in Italy that provides rich information on the conditions of well-being at school: from relations with other classmates, to those with teachers and with studying, to the attitude of students' family towards school (Conti and Prati, 2020).

We measure school performance through an objective outcome, calculated as the average grade on Italian and Mathematics, and we also check the robustness of our results by considering grades in Italian and Mathematics separately. Proxies for SWB refer to two different domains, school and family, and were built via Principal Component Analysis to extract two synthetic indicators.

The paper is structured as follows: section 2 displays the theoretical background and our research hypotheses. Section 3 presents data and methods followed by results of our analysis in section 4. The last section reports the discussion and conclusions of our research and policy recommendations.

Theoretical background

Subjective well-being

SWB has been conceptualized as both cognitive and emotional-affective evaluations of individuals' lives (Diener et al., 2002). The cognitive component refers to life satisfaction, conceived as the assessment of life as a whole, or alternatively to satisfaction in specific life dimensions; the affective dimension of SWB mirrors emotions, feelings, or moods, that can be either positive or negative.

Existing studies focused mainly on the main determinants of the cognitive dimension of children' SWB, namely self-reported life satisfaction, showing that surrounding environments related to family, school and community are the main factors influencing their SWB (Lee & Yoo, 2015; Marquez & Main, 2020). Studies that analysed SWB (life satisfaction) of immigrant children highlighted that they are more disadvantaged compared to native peers with important consequences in terms of sociocultural integration, school outcomes and self-esteem (e.g., Bankston III & Zhou, 2002; Cha, 2003; Katja et al., 2002; Guerra et al., 2019; Wang et al., 2019).

Much less attention has been paid so far to the emotional-affective component of SWB; in particular to the effects that evaluations and emotions regarding different life dimensions such as school context (e.g. enjoying attending school, having good relations with teachers and school mates), or family environment might have on school outcomes, which is also the focus of our research. The lack of research on this topic holds in particular for students with migration background, as most of the studies carried out so far are conducted on predominantly native samples (see for example the meta-analysis carried out by Bückner et al., 2018).

School outcomes and subjective well-being

There is a growing attention on the SWB of children as it is considered as a key ingredient of good quality of life, and it is associated with academic success (Amholt et al., 2020; Simovska et al., 2016; WHO, 2005). High SWB and academic success are two related indicators: SWB might influence academic success and vice versa. As stated by Bückner et al. (2018: 85) “although different studies make different assumptions about the causal direction and the underlying mechanisms of the

association between academic achievement and SWB, they agree that such an association should exist and that it should be positive”.

Empirical evidence shows that positive emotions are associated with positive school outcomes as they increase students’ learning motivations, have a positive effect on attention, memory, engagement, and productivity and allow students to build new skills and accumulate personal resources which in turn enhance school achievements (Bücker et al., 2018; Fiedler & Beier, 2014; Mega et al., 2014). Well-being at school is often defined as “quality of life, proactive interaction with the school community, internal state of feelings, emotions, and motivation, and personal experiences at school” (Phan et al., 2016: 80). Positive feelings about classroom environment and good relations with classmates and teachers increase students’ motivations and interest and support them to cope with school difficulties, whereas negative emotions and stressful relationships are negatively correlated with academic performance (Holfve-Sabel, 2014; Gumora & Arsenio, 2002). For all these reasons, many governments in Europe have adopted well-being programs in the school environment to improve student’s academic achievement (Amholt et al., 2020).

Despite an increasing attention on the relation between SWB and school outcomes (OECD, 2015; 2017; WHO, 2005), the evidence collected on this association is still spare and has shown mixed results. Huebner et al. (2014) for example, provide evidence on the importance of positive student-teacher relationships in increasing SWB and subsequently improving school outcomes; positive relationships with both teachers and peers make students feel safe and supported at school and this perception improves their scholastic performance. The systematic review carried out by Amholt et al. (2020), indicates that depending on the typology of the data employed, the outcomes range from a positive association between SWB and school outcomes (in cross-sectional studies, where measures of SWB relate to home environment, or to the quality of outdoor relations such as those with friends and teachers), to no relation at all (in studies based on longitudinal data), or to a rather weak relation suggesting that students who have worse outcomes at school do not necessarily report low level of SWB and vice versa (Bücker et al. 2018).

As for the descendants of immigrants, school experience is considered essential in influencing and orienting their integration trajectories; education, indeed, is one of the main keys to accessing upward mobility (Zhou & Lee, 2007; Kasinitz et al., 2008; Ricucci, 2010; Crul et al., 2012). However, it is worth noting that there is a strong relation between social background and success at school; the empirical evidence shows indeed that migration background is a source of disadvantage as children of immigrants score lower in PISA tests, are less likely to enroll in higher education paths and more likely to enroll in vocational secondary schools, have higher probability of school dropouts and higher probability of living in poverty compared to their peers without a migration background (OECD, 2018c). Language barriers and teachers' perceptions and expectations might also contribute to the persistence of poor educational performance among migrant students (Sprietsma, 2013). Poor school outcomes translate into downward assimilation, low inter-generational mobility and lower chances of life success and wellbeing (Heckman 2006; Portes and Rumbaut 2001).

Despite the relation between school performance and SWB, and the many studies focusing on school performance of children with migration background, very little attention has been paid to the association of subjective well-being at school with such performance for offspring of immigrants.

The above evidence leads to our first hypothesis: positive SWB in the school domain reflected by good relationships with teachers and peers, or by enjoying attending school, is positively associated with students' outcomes; on the contrary negative assessment and feelings will be reflected in worse results (H1).

Besides school environment, family is another key context that plays an important role in determining children's academic outcomes. Chau et al. (2016) for example found a strong role of the family on school achievement that they define as 'troubling', because poor living environment and low socio-economic conditions of the family (parents' occupational and educational status and family income) were strongly associated with low school performance.

Similar evidence is reported also in the reviews carried out by Huebner et al. (2014), Amholt et al., (2020) and the meta-analysis of Bücker et al. (2018). School success and educational careers are rooted in the family context which represents one of the main socialization places for children (Heckman, 2006; Llie & Liez, 2010); if this environment is characterized by parents' lack (or limited) of belief and engagement in the school project and by poor parenting practices and poor learning and living conditions (depending on both economic and in-kind resources like for example a computer or a room for studying, attention and parental control), the chances of school success drop significantly (Chau et al., 2016).

Most of the research on the relation between school outcomes and SWB carried out so far, has been conducted with predominantly native samples without considering possible differences between native children and children with any kind of migration background. There are however few exceptions; for example, the study by Dryden-Peterson (2018), on a sample of black African immigrant children attending elementary schools in the United States reported that good family-school relationship fosters children emotional well-being and academic success. Likewise, Kalmijn (2017), Eremenko and Bennett (2018) and Cebolla Boado and Gonzalèz Ferrer (2022) highlighted that father's absence and long-term physical separation from parents, which is more common among immigrant families as part of a migratory project, has negative effects on immigrant children's subjective well-being and, consequently, on their school outcomes (Guetto et al. 2022).

Given the above-cited evidence, we expect that SWB within the family environment will have a significant association with children engagement and accordingly with their results at school; the hypothesis we make is that a collaborative and supportive family context will play a positive role on school outcomes (H2).

SWB, school outcomes and native-migrant gap

The empirical evidence shows that children of immigrants are more disadvantaged at school as compared to their native peers; this is partly explained by the family economic, social and human capital. In particular, immigrant families have on average poorer economic conditions which might hinder their capacity to provide material support to their children; moreover, lower educational credentials, often used as a proxy of human capital and home environment, lack of host country language proficiency, and lack of time, as migrant parents are often employed in time demanding, low-paid and unskilled jobs, may prevent them from supporting their children in education (Cheung & Heath, 2007; Gabrielli and Impicciatore 2022; Van Niekerk, 2007; Heath et al., 2008; Alba & Holdaway, 2013).

Several studies suggest for example that integration policies, the nature of the educational system, school environment and resources have an important role in reducing or increasing the gap between native and migrant students beyond individual and family characteristics (Rumbaut & Portes, 2001; Crul & Vermeulen, 2003; Ricucci, 2010, Crul et al., 2012; Fangen et al., 2012; Beauchemin et al., 2015; Santagati & Colussi, 2020; Gabrielli et al. 2022). Findings from international comparative surveys² focusing on school outcomes of immigrants' children from the same country of origin across different host countries (Penn & Lambert, 2009; Crul et al., 2012; Alba & Holdaway, 2013; Lutz et al., 2014; Schnell, 2014) suggest for example that age when compulsory education begins and scholastic support play a key role on increasing (or decreasing) disadvantages at school among students with migration background: entering the educational path at a younger age facilitates the learning process of the host country's language, especially for those children whose parents do not have strong linguistic skills. Moreover, when the school environment is supportive, parental attitudes toward schooling become less important compared to those contexts that are highly dependent on parental support (Crul, 2015). For example, extracurricular activities (Blomfield and Barber 2011;

² E.g., the Effectiveness of National Integration Strategies for Children of International Migrants (EFFNATIS) project; the Integration of the European Second Generation (TIES) project; the Children of Immigrants Longitudinal Study in Four European Countries (CILS4EU) project.

Gabrielli et al. 2022) and, in general, the number of hours spent at school are important in determining chances of scholastic success for students with migration background as they are related to the host country language exposure: fewer hours spent at school, possibly compensated for by a greater load in homeworking, may be an additional source of burden and disadvantage for immigrant children. Given the above-cited evidence, we expect that the association between SWB and school outcomes will differ between native and migrant origin students. More precisely, we expect that for immigrant children a supportive school environment will be much more important than the family one (H3).

Data and methods

Data

Our analysis is based on the survey on “Integration of the Second Generation” (ISG) carried out by the Italian National Institute of Statistics in 2015 (ISTAT, 2017). The survey was implemented in 1,427 Italian lower and upper secondary schools, that had at least 5 students with migratory background. This sample of schools was randomly selected from an overall population composed by 9,386 institutes that were stratified according to the administrative region, the type of municipality, the type of school and the incidence of foreign students. In the sampled schools, all foreign students were interviewed through an electronic questionnaire at school, together with Italian students randomly selected as control group in the same class of the foreign students. The sample was made up of 68,127 students: 31,687 had foreign citizenship whereas 36,440 had Italian citizenship. According to ISTAT, it is representative of the ten most frequent nationalities at the national level and of the most frequent three at the regional level. Among those with foreign citizenship, 72% was born abroad and 28% was born in Italy. By considering only non-missing answers to all the questions selected for our empirical analysis, we end up with an estimation sample of 25,241 upper-secondary school students and 17,279 lower-secondary school students.

The questionnaire was organized in 6 broad sections gathering information on migration history, use of native and local languages, school performance, relationships within the school and within the family, social interactions, and household conditions.

Variables

The dependent variable in our analysis is represented by school outcomes (SO); students were asked to declare the grade in Italian and Mathematics they got in the last school report. The range goes from 0 (the lowest grade) to 10 (the highest grade), and 6 represents the passing grade.

If we look at the self-reported grade distribution (Figure 1), we can see that on average grades are slightly lower for immigrant children compared to Italians.

Figure 1 about here

This is confirmed also when comparing the two distributions by means of t-tests³, according to which the difference in the average grade between Italian and immigrant children is always statistically significant. The concentration of immigrant children is higher compared to Italian children in the left-hand side of the distribution (below the minimum threshold that is 6) both in lower and upper secondary school. At the same time, they are far less concentrated in the higher part of the distribution (7/10 grades).

Given that grades in Italian and Mathematics could be differently affected by language skills, we also consider the two subjects separately and no great heterogeneity emerges between the two distributions (Table 1).

³ The difference in the mean is always statistically significant at 1% level and is equal to -0.578 for lower secondary school and to -0.162 for upper secondary school. In both cases, the negative sign indicates that grades are higher for Italian compared to immigrant children and the difference is larger in magnitude in the lower secondary school.

Table 1 about here

When discussing the relationship between academic achievement and SWB, Clarke (2020, 271) highlights the importance of a multidimensional conceptualization and measurement of well-being by “recognizing the need to understand children’s functioning across a range of domains, including social connectedness, school engagement and emotional wellbeing”. In terms of relationship within the school, on one hand, and within the family on the other, the survey questionnaire is extremely rich and include several questions. In order to preserve as much information as possible on the different domains while limiting, at the same time, the number of variables of interest to be included in the model, we use the Principal Component Analysis (PCA) to extract two synthetic indicators. Subjective well-being at school (*School_SWB*) is the first PCA component constructed from a set of 5 questions on their relationships with teachers and school mates. SWB at home (*Family_SWB*) is the first PCA component constructed from a set of 6 questions in which students are asked about their relationship with their family and more specifically about how much the family cares about their school experience. All technical details on the PCA are reported in Appendix A.

Apart from the SWB variables, we use PCA to build also a synthetic indicator called *DISCRIM* to capture perceived discrimination, or bullying, in social relations. The *DISCRIM* variable is computed as the first component of the PCA applied to a set of 14 relevant questions referring to the frequency of events such as exclusion, offenses, scorn, threats, bullying and violence in students’ interactions with their peers (see Appendix B), which may all exert a significant influence on school performance.

Methods

The empirical model we estimate is the following:

$$\begin{aligned} SO_i = & \beta_0 + \beta_1 * IMMIG_i + \beta_2 * Family_SWB_i + \beta_3 * School_SWB_i + \beta_4 * Discrim_i + \\ & + \beta_5 * IMMIG_i * Family_SWB_i + \beta_6 * IMMIG_i * School_SWB_i + \beta_7 * X_i + \mu_i \end{aligned}$$

where SO represents the school outcome of student i , expressed as the average grade on Maths and Italian. $IMMIG$ is a dummy variable equal to 1 for students with foreign citizenship and to 0 for those with Italian citizenship.

Our variables of interest $Family_SWB$ and $School_SWB$ are the first PCA components derived to represent subjective well-being in the family and in the school domain, respectively, as explained above. The two SWB variables are interacted also with the $IMMIG$ dummy. The sign and the significance of β_5 and β_6 will allow us to assess whether the relationship between subjective well-being and school outcomes is structurally different between immigrant and native children.

In addition, we include $Discrim$, the indicator of perceived discrimination/bullying, which is supposed to be negatively correlated ($\beta_4 < 0$) with school performances.

X_i is a wide set of variables at both the individual and the household level which are not included in the model as determinants of school outcomes which we investigate *per se*, but rather as control variables in order to better identify the correlation between our variables of interest related to SWB and school outcomes.

To this end, following previous empirical work, we include individual-level characteristics that may be correlated with both school outcomes and well-being such as gender, age (in classes), a variable capturing whether the children get support for their homework and from whom (family, friends and classmates, private tutoring or additional activities at school) and the average commuting time to go to school (5 classes, from less than 15 minutes to more than one hour) (Mantovani et al. 2022; Thomas, 2016; Triventi et al. 2022). Among the household-level characteristics available in the questionnaire that may also be correlated with school outcomes, we take into account: household structure (whether children live with their parents, their siblings and their grandparents); parents' place of birth and education level; household economic well-being (from 1, very poor, to 5, very rich) and parents' employment status; the size of the town where the household lives (small vs. big municipality) (Chau et al. 2016; Gabrielli et al. 2022; Triventi et al. 2022).

Finally, μ_j represents a set of dummies that account for the region of residence in Italy.

The model is estimated with OLS separately for the two subsamples of lower secondary and upper secondary students. To test the robustness of the baseline model on the average school outcome, we consider outcomes in Math and Italian separately, and we further extend our specification by including an interaction between the immigrant status and *DISCRIM*.

Results

Our main results are reported in Table 2. Column 1 refers to lower secondary school, column 2 to upper secondary school and the dependent variable is the school outcome expressed as the self-reported average grade on Mathematics and Italian.

School performance is significantly lower for immigrants compared to natives ($\beta_1 < 0$) in both lower and upper secondary school. The coefficient on our variables of interest *Family_SWB* and *School_SWB* are positive and statistically significant ($\beta_2, \beta_3 > 0$), thus confirming that subjective well-being in these two domains is strongly related to students' outcomes as stated in the hypotheses H1 and H2.

Table 2 about here

When looking at the interaction between the immigrant status and SWB indicators, we can see that results differ across school levels. For younger students, interaction terms are both strongly significant and with opposite signs. The positive sign on β_4 shows that the correlation between SWB at school and outcomes is much stronger for immigrant children compared to native ones. The reverse holds for family SWB ($\beta_5 < 0$), which is far less important in affecting school outcomes for immigrant compared to native children, according to our last hypothesis H3.

If we move to upper secondary school students in Column 2, we observe the same effect for the interaction between immigrant status and *Family_SWB*, which is still negative and significant, whereas no appreciable differences emerge between immigrant and native students as far as

School_SWB is concerned. Also in upper secondary school, therefore, it is confirmed that a supportive school environment is more important than the family one in determining the school outcomes of immigrant children compared to natives (H3). A negative and significant association is detected between school outcomes and perceived discrimination/bullying, both in lower and in upper secondary school.

When looking at the control variables, girls have better outcomes than boys in both lower and upper secondary school whereas the association with age is highly heterogeneous. In lower secondary school, the older the students the worse their outcomes, whereas results significantly improve with age for upper secondary school students. Getting help in doing homework, irrespective of the source, tends to be associated to lower grades. In particular, students exploiting private tutoring or additional activities at school get the worst outcomes. Commuting times has no significant effect for lower secondary school. On the other hand, commuting times over 45 minutes are significantly and positively related to school outcomes for older students thus hinting at some sort of positive selection mechanism that may be at work, in line with the findings of Mantovani et al. (2022) who show that there is not a native-migrant gap in educational opportunities and school proximity although native students with highly educated parents are more likely to attend schools farther from home.

When looking at household characteristics, the presence of either grandparents or siblings is negatively related to school performance. The latter might be related to the fact that living in large families, for example, with many siblings, increases the competition for resources (for example time spent working with a computer) and parents' attention and support which seems to be related to lower educational attainment (Llie and Lietz, 2010). Having parents born in Italy instead displays a positive correlation, as well as their education level; the latter is usually considered as an indicator of students' socio-economic status (SES) (Crede et al., 2015). In this respect, in line with previous findings showing a positive role of mothers' education only on children's school achievements (Crede et al., 2015; Davis-Kean, 2005), mothers' education seems to matter more compared to fathers', as we know that women bear the disproportionate responsibility for care, which include children assistance and

supervision. Household economic status also plays a role: both self-rated economic well-being and parents' employment status are positively related with school outcomes, although the correlation is much stronger among lower secondary school students compared to upper secondary school ones. For the latter, only the coefficient on father's employment status is significant whereas the other two economic dimensions do not matter. Finally, school performance has a negative correlation with the size of municipality where students live. *Ceteris paribus*, living in a small town is associated with better outcomes although such relationship is significant only for upper secondary school students. We test the robustness of our results by considering the grades in Italian and Mathematics as separate dependent variables in Table 3.

The sign and the significance of the coefficients on the SWB variables are in line with the baseline results, with no relevant differences when considering grades in Math or in Italian. The positive and significant interaction between the immigrant status and SWB discussed in Table 2 for lower secondary school students seems to be mainly related to school outcomes in Italian whereas no significant relationship emerges as far as outcomes in Math are considered.

The behavior of the control variables is also broadly in line with the main specification.

Table 3 about here

In order to better explore the result on perceived discrimination/bullying and assess whether the unique coefficient may conceal different dynamics between native and immigrant students, as in the case of SWB indicators, we estimate an additional model, which is augmented with the interaction between the dummy *IMMIG* and the indicator *Discrim*. Results are reported in Table 4 for the different school levels⁴.

⁴ For the sake of brevity, we only show the variables of interest and do not report the entire set of control variables. However, the complete estimate does not present appreciable differences compared to Table 2 and 3 and is available upon request.

Family SWB displays the same pattern we had in the baseline specification: the correlation with school outcomes is always positive, whereas the interaction with the immigrant status is negative and significant across both specifications thus hinting at a weaker effect among immigrant students compared to native ones. School SWB, on the other hand, is likely to play a stronger role for immigrants compared to natives, even though this difference is significant only at lower school levels. The correlation between perceived discrimination/bullying and school outcomes is negative, but differently from the baseline estimates significant only at lower school levels. What is worth highlighting is the negative and significant – for upper secondary school – coefficient on the interaction with the immigrant status: the negative correlation between perceived discrimination and school performance tends to be stronger for immigrant students, compared to native ones. If we compute the net effect of perceived discrimination/bullying for immigrant students, it turns out negative and significant⁵.

Table 4 about here

Discussion and conclusions

In this paper we analysed the role of subjective well-being on school achievements among students with migration background and their native peers in Italy. In particular, we focused on the relationship between subjective well-being related to school and family environment on average grades in Italian and Mathematics (Clarke, 2020). Differently from previous evidence provided on the Italian context, mainly based on either Invalsi or PISA tests, we can exploit a survey specifically aimed at investigating the integration of second generation, which is extremely rich in information on their social inclusion and well-being in different contexts.

⁵ The coefficient is estimated as a linear combination $\beta[\text{Discrim}] + \beta[\text{IMMIG} * \text{Discrim}]$ and is equal to -0.012 (p-value: 0.003) for lower secondary school and -0.017 (p-value: 0.000) for upper secondary school.

In general immigrant children have worse school performances compared to native Italian students in both lower and upper secondary school. In this regard, our results broadly confirmed the existing international evidence provided for other countries. In accordance with our research hypothesis (H1 and H2), we found that subjective well-being in two of the most important dimensions of children lives, the school and the family, is significantly and positively correlated to school outcomes. These results are however different among immigrant and native students. In particular, when we interact SWB with the immigrant status, we found that in lower secondary school the role of SWB at school is more important for migrant students' outcomes compared to native students (confirming our H3), in terms of both average grades and grades in Italian. Well-being at school reflected by positive relations with teachers and school peers is associated to better school outcomes (Phan et al., 2016), especially for immigrant students, in line also with the findings of Amholt and colleagues (2020) and Gabrielli & Impicciatore (2022, 2310) who highlighted that "the 'double origin gap' (socio-economic and migratory) of migrants makes them more dependent on the schools quality and environment in contrast to their native peers". The same result does not hold for SWB in the family domain; although the quality of relations within the family has been found to be an important predictor of children subjective well-being (see for example Marquez & Main, 2020), this dimension matters much more for native students compared to immigrant ones. A possible explanation for this finding is related to the fact that immigrant parents might be less able to provide support to their children, because of language difficulties, lower human capital compared to natives, and hard-working conditions (Crul, 2015; Triventi et al. 2022); for all these reasons, SWB within the family context might be less determinant for immigrant students' school performance (e.g., OECD, 2021). Moreover, school is in general an important environment for children's social and emotional development as it is the place where they spend most of their time interacting with teachers and peers (Marquez & Main, 2020; Podar et al., 2022); for migrant students, school life might be often the sole source of outdoor socialisation (e.g., OECD, 2018b; 2020b; Strozza, 2008; 2015), thus playing a determinant role in their life and achievements.

In line with other studies (e.g., Benner et al., 2018; Borualogo & Casas, 2021; Civitillo et al., 2021; Samara et al., 2021), we found that perceived discrimination/bullying is negatively correlated with school outcomes, especially for immigrant students. For natives, on the contrary, it is hardly significant. In this regard, recent evidence by UNESCO (2017) and Gabrielli et al. (2022) stressed the importance of developing specific strategies at school, to promote the inclusion of disadvantaged immigrant students, especially in Southern European countries.

In line with previous empirical research, economic well-being is positively associated with children's school outcomes. It may provide better education and life opportunities, which turns into better socio-economic integration for children with migration background (Di Bartolomeo, 2011; Gabrielli et al. 2022; Mistry et al., 2002; Walker et al., 1994).

The positive relation between school performance and subjective well-being within the school context suggest that it is crucial to invest in policies that aim at promoting social and emotional well-being at school (WHO, 2005). Higher subjective well-being means improved school outcomes, and (in the longer term) higher educational achievements, which play a key role not only at individual level, but also at the societal one (Bücker et al., 2018). In this respect, the key role of the school environment in student's performance is an important finding from a policy perspective, as school is a much 'easier' environment where to intervene as compared to the more intimate and culturally embedded family context; it is essential to invest resources and adopt specific policies that address students' difficulties and inequalities, improve their subjective well-being and school experience and foster their integration (Gabrielli et al., 2022; Cebolla and Finotelli, 2015). Ethnic penalty is one of the most important sources of inequalities and the school system can really make the difference for disadvantaged students, including those with migration background, by reducing inequalities (and their inter-generational transmission) based on social background; the more supportive and inclusive schools are, the less important parental support becomes for school outcomes. The school environment has a key role not only for educational related aspects but also for socialization and emotional development, given the huge time that children spend there. Thus, investing and promoting

inclusiveness and sense of belonging and addressing both educational and emotional needs might boost well-being and academic achievements (Podar et al., 2022), and reduce stress and mental health problems, especially for the most deprived and disadvantaged students (Fazel et al., 2016; Podar et al., 2022; Schachner et al., 2018; The Lancet Public Health, 2020). As shown in a recent publication in *The Lancet* (2020), education is a social determinant of health; migration is too (Castañeda et al., 2015). Investing in disadvantaged young children and improving students' well-being is "a rare public policy initiative that promotes fairness and social justice and at the same time promotes productivity in the economy and in society at large" (Heckman, 2006: 1902).

Our study has some limitations that should be noted. One is related to the nature of our dependent variables, which is based on self-reported school outcomes. Indeed, as Clarke (2020) points out, the evidence based on national/international level standardised assessments such as PISA tests, is still scant, and might provide more objective results. The second is related to the absence of longitudinal information. This prevents us from providing evidence of intertemporal complex patterns in the relation between subjective well-being and school outcomes (Amholt et al., 2020). By following students over time this relation might be further explored through the analysis of how SWB in different life dimensions correlates with dropouts and future academic carriers, which could exert long-term effects on individuals' labor market integration. Cross sectional data for example do not allow to deal properly with school dropouts, which may be strictly correlated with bad outcomes and also exert a negative feedback effect on SWB. In addition, following students over time may be of great help in better identifying the causality direction between school performances and SWB for both native and migrant adolescents, in line with the recent evidence provided in Bortes et al. (2021). Lastly, as highlighted also by Amholt et al. (2020) and Bucker et al. (2018), future research should consider developing specific measures of subjective well-being according to different age groups to better assess the relation between school outcomes and subjective well-being.

Declarations

Conflict of interest: The authors have no conflicts of interest to declare that are directly or indirectly related to the work submitted for publication. The authors have no financial or non-financial interests to disclose.

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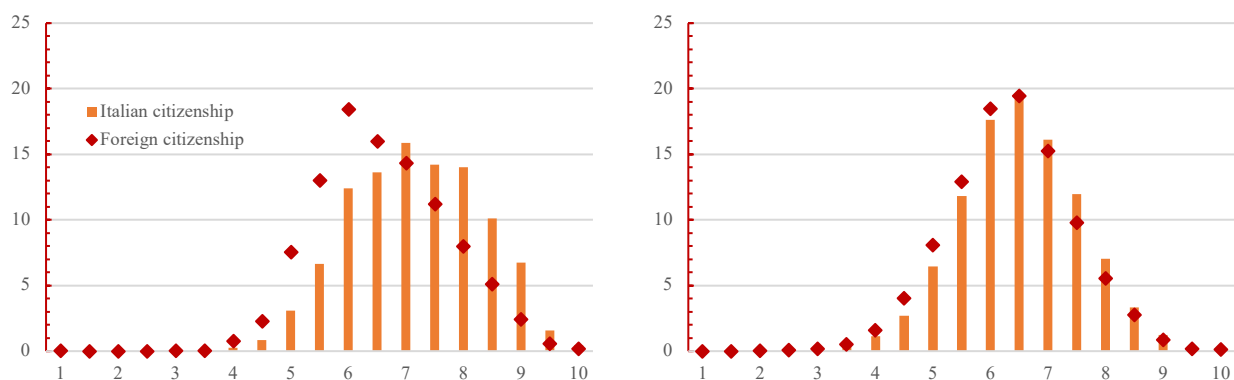
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Figures and Tables

Figure 1: average grade distribution by citizenship and type of school, %

a) Lower secondary school

b) Upper secondary school



Note: grades are calculated as the average between the votes in Italian and Mathematics obtained in the last school report. They range between 0 (the lowest grade) and 10 (the highest grade), with 6 representing the passing grade.
Source: authors' own elaboration on Istat data.

Table 1: grade distribution in Italian and Mathematics by citizenship and type of school, %

Lower secondary					Upper secondary			
Italian			Math		Italian		Math	
Voto	Italian	Foreign	Italian	Foreign	Italian	Foreign	Italian	Foreign
1	0.01	0.02	0.00	0.02	0.05	0.04	0.01	0.02
2	0.03	0.00	0.01	0.00	0.37	0.47	0.07	0.05
3	0.07	0.11	0.02	0.06	1.76	2.25	0.31	0.48
4	1.99	4.72	0.63	1.93	7.12	8.91	1.66	2.90
5	9.61	18.28	5.28	11.78	15.97	17.55	9.09	12.63
6	22.28	29.27	21.25	34.43	29.37	29.12	32.41	35.71
7	25.80	22.76	31.80	29.85	24.06	21.76	36.80	33.04
8	23.12	15.76	27.96	16.78	14.85	13.69	16.43	12.71
9	14.90	7.94	11.81	4.74	5.58	5.34	2.94	2.24
10	2.18	1.13	1.24	0.40	0.87	0.88	0.27	0.22
	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Note: grades in Italian and Mathematics obtained in the last school report. They range between 0 (the lowest grade) and 10 (the highest grade), with 6 representing the passing grade.
Source: authors' own elaboration on Istat data.

Table 2: Baseline results with average school outcomes

	Lower secondary			Upper secondary		
IMMIG (1 yes, 0 no)	-0.263	***	[0.037]	-0.147	***	[0.033]
School_SWB	0.081	***	[0.007]	0.108	***	[0.006]
Family_SWB	0.071	***	[0.009]	0.043	***	[0.007]
School_SWB * IMMIG	0.023	**	[0.012]	0.004		[0.009]
Family_SWB * IMMIG	-0.048	***	[0.013]	-0.045	***	[0.010]
discrimination	-0.010	***	[0.003]	-0.009	***	[0.003]
Individual-level:						
Male (1 yes, 0 no)	-0.237	***	[0.016]	-0.317	***	[0.013]
Age lower secondary (ref. 10-11 years)						
12 years	-0.074	***	[0.023]			
13 years	-0.091	***	[0.023]			
14 years or more	-0.249	***	[0.026]			
Age upper secondary (ref. 13-14 years)						
15 years				0.012		[0.021]
16 years				0.024		[0.022]
17 years				0.111	***	[0.022]
18 years or more				0.135	***	[0.021]
Help with homeworks (ref. None)						
from relatives	-0.317	***	[0.019]	-0.309	***	[0.023]
from peers	-0.431	***	[0.052]	-0.299	***	[0.025]
from private coach	-0.730	***	[0.030]	-0.592	***	[0.032]
Commuting time (ref. within 15 minutes)						
school within 16/29 minutes	-0.033		[0.023]	0.000		[0.016]
school within 30/45 minutes	-0.080	*	[0.043]	-0.002		[0.018]
school within 46/60 minutes	-0.147		[0.092]	0.069	***	[0.024]
school more than 60 minutes	-0.199		[0.139]	0.102	**	[0.040]
Household-level:						
living with parents (1 yes, 0 no)	0.142		[0.101]	-0.134	**	[0.065]
living with siblings (1 yes, 0 no)	-0.071	***	[0.019]	-0.013		[0.015]
living with grandparents (1 yes, 0 no)	-0.134	***	[0.021]	-0.043	**	[0.021]
father born in Italy (1 yes, 0 no)	0.086	**	[0.036]	0.058	*	[0.031]
mother born in Italy (1 yes, 0 no)	0.134	***	[0.034]	0.076	**	[0.030]
Mother's educational level (ref. None)						
primary	0.036		[0.069]	0.123		[0.092]
lower secondary	0.158	***	[0.059]	0.222	***	[0.084]
upper secondary	0.452	***	[0.058]	0.342	***	[0.084]
tertiary or more	0.564	***	[0.060]	0.410	***	[0.085]
Father's educational level (ref. None)						
primary	0.008		[0.068]	0.013		[0.099]
lower secondary	0.027		[0.058]	0.049		[0.094]
upper secondary	0.254	***	[0.058]	0.165	*	[0.094]
tertiary or more	0.366	***	[0.060]	0.233	**	[0.095]
Mother's employment status (1 working, 0 not working)	0.062	***	[0.018]	-0.017		[0.015]
Father's employment status (1 working, 0 not working)	0.135	***	[0.030]	0.100	***	[0.023]
economic well being (1 very poor, 5 very rich)	0.060	***	[0.015]	0.031	**	[0.014]
Municipality size (1 big, 0 small)	-0.019		[0.022]	-0.098	***	[0.016]
Regional dummies		yes			yes	
Observations		17,245			25,212	

Note: * significant at 10%; ** significant at 5%; *** significant at 1%. Robust standard errors reported in brackets.

Table 3: Baseline results with school outcomes in Italian and Mathematics

	Lower secondary		Upper secondary	
	Math	Italian	Math	Italian
IMMIG (1 yes, 0 no)	-0.249 *** [0.037]	-0.273 *** [0.046]	-0.160 *** [0.033]	-0.134 *** [0.045]
School_SWB	0.078 *** [0.008]	0.086 *** [0.009]	0.078 *** [0.006]	0.136 *** [0.008]
Family_SWB	0.072 *** [0.009]	0.070 *** [0.011]	0.043 *** [0.007]	0.043 *** [0.009]
School_SWB * IMMIG	0.014 [0.012]	0.032 ** [0.015]	0.001 [0.009]	0.007 [0.013]
Family_SWB * IMMIG	-0.026 ** [0.013]	-0.071 *** [0.016]	-0.024 ** [0.010]	-0.065 *** [0.014]
discrimination	-0.011 *** [0.003]	-0.010 *** [0.004]	-0.014 *** [0.003]	-0.004 [0.004]
Individual-level:				
Male (1 yes, 0 no)	-0.363 *** [0.016]	-0.112 *** [0.019]	-0.333 *** [0.013]	-0.299 *** [0.018]
Age lower secondary (ref. 10-11 years)				
12 years	-0.049 ** [0.023]	-0.096 *** [0.028]		
13 years	-0.028 [0.023]	-0.152 *** [0.027]		
14 years or more	-0.157 *** [0.027]	-0.340 *** [0.032]		
Age upper secondary (ref. 13-14 years)				
15 years			0.060 *** [0.021]	-0.035 [0.029]
16 years			0.078 *** [0.022]	-0.027 [0.030]
17 years			0.134 *** [0.022]	0.089 *** [0.031]
18 years or more			0.182 *** [0.021]	0.091 *** [0.029]
Help with homeworks (ref. None)				
from relatives	-0.287 *** [0.019]	-0.343 *** [0.023]	-0.300 *** [0.024]	-0.315 *** [0.032]
from peers	-0.405 *** [0.053]	-0.449 *** [0.065]	-0.247 *** [0.025]	-0.350 *** [0.037]
from private coach	-0.649 *** [0.030]	-0.818 *** [0.038]	-0.537 *** [0.035]	-0.653 *** [0.046]
Commuting time (ref. within 15 minutes)				
school within 16/29 minutes	-0.037 [0.023]	-0.025 [0.028]	-0.007 [0.016]	0.006 [0.022]
school within 30/45 minutes	-0.078 * [0.043]	-0.077 [0.053]	-0.009 [0.018]	0.007 [0.024]
school within 46/60 minutes	-0.178 * [0.097]	-0.086 [0.115]	0.070 *** [0.024]	0.068 ** [0.033]
school more than 60 minutes	-0.124 [0.142]	-0.224 [0.169]	0.026 [0.039]	0.181 *** [0.056]
Household-level:				
living with parents (1 yes, 0 no)	0.269 *** [0.101]	0.026 [0.135]	0.051 [0.066]	-0.330 *** [0.089]
living with siblings (1 yes, 0 no)	-0.060 *** [0.019]	-0.081 *** [0.024]	-0.042 *** [0.015]	0.017 [0.021]
living with grandparents (1 yes, 0 no)	-0.122 *** [0.022]	-0.145 *** [0.026]	-0.026 [0.020]	-0.060 ** [0.028]
father born in Italy (1 yes, 0 no)	0.104 *** [0.036]	0.067 [0.043]	0.080 ** [0.031]	0.034 [0.042]
mother born in Italy (1 yes, 0 no)	0.150 *** [0.034]	0.118 *** [0.042]	0.068 ** [0.030]	0.085 ** [0.041]
Mother's educational level (ref. None)				
primary	-0.026 [0.068]	0.104 [0.085]	-0.004 [0.088]	0.251 * [0.133]
lower secondary	0.141 ** [0.058]	0.178 ** [0.073]	0.122 [0.081]	0.320 *** [0.123]
upper secondary	0.410 *** [0.057]	0.495 *** [0.071]	0.274 *** [0.081]	0.408 *** [0.122]
tertiary or more	0.497 *** [0.059]	0.637 *** [0.073]	0.327 *** [0.082]	0.490 *** [0.124]
Father's educational level (ref. None)				
primary	-0.017 [0.067]	0.030 [0.085]	0.050 [0.094]	-0.032 [0.140]
lower secondary	0.021 [0.057]	0.027 [0.073]	0.091 [0.090]	0.005 [0.134]
upper secondary	0.264 *** [0.056]	0.237 *** [0.072]	0.202 ** [0.090]	0.124 [0.134]
tertiary or more	0.386 *** [0.058]	0.335 *** [0.074]	0.267 *** [0.091]	0.195 [0.136]
Mother's employment status (1 working, 0 not working)	0.029 * [0.017]	0.096 *** [0.022]	-0.017 [0.015]	-0.017 [0.020]
Father's employment status (1 working, 0 not working)	0.082 *** [0.030]	0.187 *** [0.038]	0.066 *** [0.024]	0.135 *** [0.032]
economic well being (1 very poor, 5 very rich)	0.065 *** [0.015]	0.055 *** [0.019]	0.038 *** [0.014]	0.024 [0.019]
Municipality size (1 big, 0 small)	-0.054 ** [0.023]	0.017 [0.027]	-0.108 *** [0.016]	-0.091 *** [0.023]
Regional dummies	yes	yes	yes	yes
Observations	17,278	17,279	25,241	25,241

Note: * significant at 10%; ** significant at 5%; *** significant at 1%. Robust standard errors reported in brackets.

Table 4: Augmented specification with the interaction between immigrant status and discrimination/bullying

	Lower secondary	Upper secondary
	[1]	[2]
IMMIG (1 yes, 0 no)	-0.258*** [0.038]	-0.152*** [0.033]
School_SWB	0.082*** [0.008]	0.109*** [0.006]
Family_SWB	0.072*** [0.009]	0.044*** [0.007]
School_SWB*IMMIG	0.021* [0.012]	0.000 [0.009]
Family_SWB*IMMIG	-0.049*** [0.013]	-0.047*** [0.010]
Discrim	-0.008** [0.004]	-0.003 [0.004]
Discrim*IMMIG	-0.005 [0.006]	-0.014** [0.006]
Control variables	yes	yes
Observations	17,245	25,212

Note: * significant at 10%; ** significant at 5%; *** significant at 1%. Robust standard errors reported in brackets.

Appendix A: Principal Component Analysis on Subjective Well-Being

We use Principal Component Analysis (PCA) to build two synthetic indicators of Subjective Well-Being (SWB) at school and in the family.

The sets of questions used in the two different domains are reported in Table A1. For each statement, students are asked to either agree or disagree on a 1/5 scale. Given the different connotation of the statements, the scale has been harmonized before applying PCA.

Table A1. Selected survey questions related to school and family SWB and factor loadings

SCHOOL SUBJECTIVE WELL-BEING	
	Factor loadings/Correlation
In my class I feel good	0.3823
At school I have friends	0.2727
I don't have a good relationship with my school mates	0.1422
The teachers make me feel appreciated	0.4754
Teachers treat all pupils in the same way	0.5179
I trust my teachers	0.5148
FAMILY SUBJECTIVE WELL-BEING	
At home I often talk about what happens at school	0.4288
My family asks me about my school outcomes	0.3829
In my family we help each other	0.4746
My family is sensitive to my needs and feelings	0.4649
My family explains me when I'm wrong	0.4775

PCA has been applied on the selected estimation sample, which is made up of 25,241 upper-secondary school students and 17,279 lower-secondary school students who gave non missing answers to all questions used in our empirical analysis.

For each domain we selected the first principal component, with an eigenvalue of 2.47 (school SWB) and 2.28 (family SWB) and explaining 41.15 and 45.63% of the total variance, respectively. In both domains, the first component is positively related to all questions included in the PCA, as shown by the the factor loadings reported in Table A1.

Appendix B: Principal Component Analysis on discrimination/bullying

Given the rich set of relevant questions on discrimination and bullying episodes provided in the questionnaire, we used PCA also to build a synthetic indicator which may capture these aspects and account for their correlation with school outcomes in our estimates.

As for SWB indicators, PCA has been applied on the selected estimation sample, which is made up of 25,241 upper-secondary school students and 17,279 lower-secondary school students who gave non missing answers to all questions used in our empirical analysis.

We selected the first principal component, with an eigenvalue of 6.46 and explaining 46.18% of the total variance. Factor loadings related to all questions included in the PCA are reported in Table B1.

Table B1. Selected survey questions related to discrimination/bullying and factor loadings

	Factor loadings/Correlation
In the last 12 months, how many times did it happened to be (by your peers):	
Offended with nicknames, swear words, insults	0.2696
Hit with shoves, blows, kicks, punches	0.2520
Offended as a girl / boy	0.2731
Teased /outcast for your opinions	0.2916
Threatened	0.2698
Forced to do things you did not want / blackmailed	0.2537
Targeted by gossiping about you	0.2796
Teased because of your physical appearance	0.2694
Excluded, marginalized with nobody speaking to you	0.2780
Excluded from parties or other meetings with friends	0.2538
Victim of bad jokes	0.2974
Targeted by damaging your property	0.2815
Forced to hand over your money, cell phone or anything else	0.2093
Disappointed by disseminating information confided by you in secret	0.2513