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Against the Odds – Academically resilient students with a migrant background and how they succeed

Final Report

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Against the Odds – Academically resilient students with a migrant background and how they succeed

Final Report

Authors

Ecorys:

Matthew Cutmore

Shona MacLeod

Vicki Donlevy

Caitlin Spence

The University of New South Wales:

Andrew Martin

Rebecca Collie

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EU Member State abbreviations

In the report narrative, EU Member States are referred to by name. However, to ensure tables and figures are presentable, EU country abbreviations are used.

EU abbreviation	Member State	EU abbreviation	Member State
AT	Austria	IE	Ireland
BE	Belgium	IT	Italy
BG	Bulgaria	LT	Lithuania
CY	Cyprus	LU	Luxembourg
CZ	Czech Republic	LV	Latvia
DE	Germany	MT	Malta
DK	Denmark	NL	Netherlands
EE	Estonia	PL	Poland
EL	Greece	PT	Portugal
ES	Spain	RO	Romania
FI	Finland	SE	Sweden
FR	France	SI	Slovenia
HR	Croatia	SK	Slovakia
HU	Hungary	UK	United Kingdom

Other abbreviations

Throughout the report, the following abbreviations are used.

Abbreviation	Term
AM	All migrants (first-generation migrant students and second-generation students)
ESCS	(Index of) economic, social and cultural status
EU	European Union
FG	First-generation (migrant student)
GDP	Gross Domestic Product
M	Mean value
MIPEX	Migrant Integration Policy Index
MS	Member States
N	Sample size
NEET	Young people neither in employment nor in education and training
OECD	Organisation for Economic Co-operation and Development
PISA	Programme for International Student Assessment
SE	Standard errors
SES	Socio-economic status
SG	Second-generation (student)

Executive summary

Research objective

The overall objective of this study is to analyse how disadvantaged students with a migrant background succeed academically in European education systems. We focus on “academically resilient” students who are defined as students who succeed academically despite facing an education-related adversity, for example, low socio-economic status.

Key research questions

What is academic resilience?

- How is academic resilience defined in the scholarly literature?
- How has academic resilience of migrants been operationalised in the scholarly literature?
- How is academic resilience operationalised for this study using student assessment data?

Who are the academically resilient students?

- What is the share of academically resilient migrants across the EU?
- How does this share compare across EU Member States?
- Is there a significant difference in the share of academically resilient migrant and non-migrant students?
- What is the profile of an academically resilient student?

Which factors are associated with academic resilience?

- Which individual characteristics enable or inhibit disadvantaged students with a migrant background to succeed in education?
- Which school-level characteristics enable or inhibit disadvantaged students with a migrant background to succeed in education?
- Which country-level characteristics and measures enable or inhibit disadvantaged students with a migrant background to succeed in education?

This research comes at a time when EU Member States are facing the challenge of integrating high numbers of newly-arrived migrants and refugees into European education systems. We identify academically resilient students and the factors associated with this status for first-generation migrant students and second-generation students. First-generation migrant students are defined as those students (as well as their parents) who were born in a country different to the one where they were attending school at the time of assessment. Second-generation students are those who were born in the country where they are attending school but their parents are migrants.

Methods of analysis

The study utilises a range of analytical techniques and approaches to answer the research questions. Firstly, a comprehensive literature review was undertaken to understand how academic resilience is defined, how academic resilience can be operationalised and what factors may contribute to an academically resilient status – thus, underpinning subsequent analysis. Academically resilient students were then identified and described, at a Member State level, using data from the OECD’s Programme for International Student Assessment (PISA), the key data source for this study. Advanced statistical analyses were then employed to identify the factors associated with academic resilience. Statistical methods included variable-centred approaches (e.g. regression modelling) and person-centred approaches to identify homogenous sub-groups of resilient students for further study.

Throughout the study, there was engagement and input from a select Scientific Committee consisting of respected academics in the fields of education and migration. Prior to finalising the study findings, a written Policy Delphi exercise was undertaken, consisting of a consultation with a wider group of relevant stakeholders, to support the interpretation of our results.

Findings

We found that there are a range of different approaches to identify and study students with a migrant background who can be considered academically resilient. The primary approach focused on students who were in the top two quartiles (i.e. above average) of academic achievement and lowest quartile of economic, social and cultural status (ESCS), within their respective country – which is the most common approach adopted in other studies. Additional approaches explored included a variation of the primary approach and innovative multivariate approaches.

Our analysis highlighted that, at the EU-level, students with a migrant background were more likely than their non-migrant background peers to experience socio-economic disadvantage.

Regarding the shares of academically resilient students across EU Member States¹, the general trend across approaches was that, relative to non-migrant background students, smaller shares of migrant background students were resilient. This was particularly the case for first-generation migrants. However, there were interesting variations between Member States; for example, there were greater shares of academically resilient second-generation students in France, Italy, Luxembourg and the UK than non-migrant background students, and a higher proportion of resilient first-generation students in Ireland.

Based on an analysis of multiple sources, our assessment of country-level factors that may explain these differences in shares of resilient students indicated that the composition and characteristics of migrant populations within a country, as well as the focus of specific migrant integration policies, might play an important role. These potential reasons were reinforced by analysis of a selection of non-EU countries with higher-shares of academically resilient students.

To understand what factors enable or inhibit academic resilience, a wide selection of student and school characteristics were tested in the advanced empirical analysis. It is important to note that, due to the cross-sectional nature of PISA data, our analyses do not imply causality – just that there is a statistical association. Key patterns of association observed across the different approaches used to identify academically resilient students and analytical methods included:

- Higher academic self-expectations had a positive association with academic resilience. In particular, there may be low expectations for, and held by, students with a migrant background when they join a school. Interestingly, very high academic self-expectations were associated with the most 'robust' forms of academic resilience examined in this study. A policy focus on raising expectations could therefore be beneficial to students with a migrant background.
- Skipping or being late for school had a negative association with academic resilience. Here, schools can identify factors within the school to improve migrant background students' inclination and capacity to arrive on time, stay the entire

¹ Some Member States were excluded from the analysis due to small sample sizes.

day and attend all week. There might also be opportunities to connect with the home to understand the underlying factors behind poor attendance.

Other factors that were identified in some (but not all) sets of analyses included:

- School staff providing support with homework was a factor positively associated with highly-resilient first-generation migrant students. Whilst this was not mirrored in other sets of analyses, the positive effects of assisting students with their homework appear likely and may be useful in policy considerations.
- The provision of a study room was a factor associated with academic resilience as defined by one of the more innovative multivariate approaches. Again, although limited to a specific set of analyses, this finding makes intuitive sense, especially for migrant background students from a disadvantaged background who may not have access to the resources required for effective study at home.

A number of other factors were identified that, on first glance, were not so intuitively congruent, which are set out in the full report.

Key conclusions

The study adopted a combination of recognised and innovative approaches to identify academically resilient students and an array of advanced analysis techniques to better understand these groups of students. By not limiting the study to one approach, we were able to identify patterns across different groups that add to the validity of our findings and reveal new information about academic resilience that would have otherwise been missed.

Many of the factors found to be associated with the academic resilience of students with a migrant background align with those identified in other studies focused on all students. It was important however, firstly to confirm these empirically and, secondly to note that, although similar factors prevail, the implications and policy/school response may differ for students with a migrant background.

The study was designed to be both empirically robust and exploratory, developing and employing innovative techniques with appreciation for the PISA design. It uncovered findings in relation to potential means to foster academic resilience for students with a migrant background that we encourage Member States to consider in their own specific context.

Furthermore, the study demonstrated that there are different ways to define and study academically resilient students, as well as a number of potential further research avenues, which we hope will provide an important contribution for future research in this area.

Limitations

This complex study involved a number of challenges. Although we were able to navigate these challenges effectively, it is important to note the limitations to our analyses, in particular:

- PISA data, and thus analysis, is cross-sectional. Our analyses can only highlight statistical associations, not causality.
- PISA is self-reported by students (and in the case of school data, principals). We are unable to account for issues of recall, bias, misinterpretation of questions, etc.

- It was not possible to assess the lived experience of a student with a migrant background with the PISA data – qualitative methods would be required for this type of analysis.
- Owing to the scale and complexity of analysis undertaken, we focus on mathematics achievement only. Related to this, a gender effect is present in some of our analyses. This is flagged on each occasion to avoid any misinterpretation of findings.
- When focusing on academically resilient students with a migrant background, there can be small sample sizes. Some caution in interpreting findings where small samples exist is important.
- Our analyses tested a wide range of student, family, and school-level factors for associations with academic resilience. However, due to a combination of missing data, collinearity and some variables being subsumed by composite variables, it was not possible to include all variables in our analyses. Furthermore, there are factors beyond those in PISA (e.g. student prior academic achievement) that we could not include as they are not measured.

1. Introduction

1.1 Study objectives

The overall objective of this study is to analyse how disadvantaged students with a migrant background succeed academically in European education systems. The analysis explores which individual, school and education system characteristics may explain academic success despite an unfavourable starting point or situation.

The results of the study will inform Commission activities in the areas of:

- Supporting Member States in providing high quality education for all;
- Building academic resilience of young people through education;
- The integration of young people with migrant and minority language backgrounds.

1.2 Study context

This research comes at a time when EU Member States are facing the challenge of integrating high numbers of newly arrived migrants and refugees into European education systems. From 2015 to 2017, almost 3.3 million people applied for asylum in European Member States. More than one-fifth of all applications (712,000) were made for children under the age of 14 (Eurostat, 2017). Recent research underlines the importance of supporting migrants to integrate in the countries in which they arrive: about seven in ten Europeans agree with the view that integrating immigrants is a necessary investment in the long run for their country (European Commission, 2018). This challenge of integrating newly arrived young people comes in addition to the pre-existing task of supporting disadvantaged young people in succeeding in education in many Member States, in particular first-generation and second-generation students from earlier waves of migration and minorities. Producing further evidence, on which education and other policies may help these learners to succeed, can provide valuable support for Member States to address these challenges.

The importance of providing high quality, equitable education for all and including young learners with migrant background has been (re-)emphasised in a number of EU policy documents, including in the 2016 Action Plan on the Integration of Third Country Nationals (European Commission, 2016a: p7):

"Education and training are among the most powerful tools for integration and access to them should be ensured and promoted as early as possible. The acquisition of basic skills is the foundation for further learning and the gateway to employment and social inclusion."

Large-scale student assessment exercises have highlighted the 'achievement gap' of disadvantaged and migrant background learners when it comes to the acquisition of basic competencies, such as reading, mathematics and science. For example, latest data from the OECD's Programme for International Student Assessment (PISA) show that socio-economic background, as well as migrant and minority language background, continue to be important factors in determining students' success in education (European Commission, 2016c). In some Member States, this 'achievement gap' is equivalent to the competencies acquired in several years of schooling. This gap goes beyond the acquisition of basic competencies alone and covers other indicators of educational achievement, including early school leaving, young people not in employment, education or training (NEET), and tertiary attainment (Flisi et al., 2016). Persistent educational

challenges experienced by disadvantaged and migrant background students is an obstacle to upward social mobility in Europe (Crul et al., 2017).

As a means of understanding this achievement gap, the Bertelsmann Foundation (2008) and OECD PISA analysis (2010) introduced the analysis of a new sub-group of interest: academically 'resilient' students - young people who succeed in education despite their unfavourable starting conditions. Focusing the analysis on this group of learners provides new opportunities for policy learning, where analyses try to understand the individual, school and education system-level characteristics which help students to succeed academically.

It has recently been suggested that resilience can be quite domain-specific and multidimensional, such that an individual may be resilient in one aspect of his/her life, but not in another. In relation to educational development, Martin and Marsh (2009) point out that there are risks and adversities that students must deal with in the academic setting. Schools and other educational contexts are places where academic setback, challenge, and pressure are a part of everyday life; research findings clearly support this (e.g., Bertelsmann Stiftung, 2008; Catterall, 1998; Finn & Rock, 1997; Martin & Marsh, 2006, 2008). It is therefore vital that students develop a capacity to be resilient in the face of these academic risks and adversities. It should be noted that there are also mainstream challenges that all children are set to face in their education, but that these can interact with other risks such as linguistic and cultural differences or missed school in the case of migrant children.

Importantly, although many students perform poorly and continue to perform poorly (Dauber, Alexander, & Entwisle, 1996), there is a significant minority of students who overcome academic adversity (Jimerson, Egeland, & Teo, 1999; Ungar, 2012). Understanding these students is vital for knowing how to better assist those who experience academic adversity. Accordingly, "academic resilience" is an important research focus. In the field of education, academically resilient students are generally defined as those who overcome adversity to achieve academic success (Luthar, Cicchetti, & Becker, 2000; OECD, 2011). The present study investigates such students, with a particular focus on migrant background students in the EU.

In this context, this study adds to the existing evidence base by providing evidence on the extent of academic resilience among disadvantaged and migrant background students across Europe, an improved understanding of which groups are most likely to be resilient, and the identification of factors which are associated with the resilience of young people. Such factors include individual and family background, school and education policy, as well as the wider inclusion policy context in specific Member States.

1.3 Research questions

The study is concerned with how students with a migrant background who face education-related adversity are able to succeed academically.

The underlying assumptions of the study (and which are empirically examined herein) are as follows:

- Some disadvantaged migrant background students succeed academically in European education systems despite their unfavourable starting conditions or situations;
- The prevalence of academic resilience in disadvantaged migrant students varies between EU Member States;

- Individual, school and education system characteristics have an inhibiting or supporting effect for the academic resilience of migrant students who face adversity.

The specific study research questions can be operationalised through three overarching questions: What is resilience? Who are the resilient students? Which factors are associated with academic resilience? The key research questions under each of these broader questions are presented below:

What is resilience?

- How is academic resilience defined in the scholarly literature?
- How has academic resilience of migrants been operationalised in the scholarly literature?
- How is academic resilience operationalised for this study using PISA data?

Who are the resilient students?

- What is the share of academically resilient migrants across the EU?
- How does this share compare across EU Member States?
- Is there a significant difference in the share of academically resilient migrant and non-migrant students?
- What is the profile of an academically resilient student?

Which factors are associated with academic resilience?

- Which individual characteristics enable or inhibit disadvantaged students with a migrant background to succeed in education?
- Which school-level characteristics enable or inhibit disadvantaged students with a migrant background to succeed in education?
- Which country-level characteristics and measures enable or inhibit disadvantaged students with a migrant background to succeed in education?

1.4 Key definitions

The following terms are used throughout the study:

- Academic resilience: succeeding academically despite facing education-related adversity.
- Education-related adversity: characteristics, circumstances and experiences that decrease the likelihood of academic success. A key adversity factor used throughout this study is low economic, social and cultural status (ESCS).
- Disadvantaged students: students who have low-levels of ESCS.
- Non-migrant background: students whose mother or father (or both) were born in the Member State where students sat the PISA test, regardless of whether the student himself or herself was born in that Member State.
- Second-generation: students born in the Member State where they sat the PISA test and whose parents are both foreign-born. These students are not migrants themselves but have a migrant background.
- First-generation: foreign-born students whose parents are also both foreign-born.
- All migrant background: second-generation and first-generation students combined.

For the purposes of the study, we use the term 'migrant' to represent both migrant and immigrant student populations. This term aims to account for the fact that migrant young people may have complex movement trajectories that have included moving between more than one country, and education systems, prior to their current country of

residence (rather than solely being immigrants that have moved from one country to another).

1.5 Key data source (PISA)

This study utilises PISA data. The Programme for International Student Assessment (PISA) is a study carried out by the OECD in member and non-member nations. It is conducted among school pupils aged between 15 years and 3 months and 16 years and 2 months at the beginning of the assessment period. It assesses their scholastic performance in mathematics, science, and reading. Given the range and complexity of the statistical techniques undertaken, it was necessary to focus on just one subject in this study. Mathematics has been selected, even though it was not the major domain in 2015, due to the relative reliability and consistency with which this subject is taught across countries compared to other subjects within the PISA dataset.

Since 2000, PISA has been repeated every three years. This study is based on PISA data collected in 2015 (PISA 2015). The aim of PISA is to provide countries with comparable data in order to provide an evidence basis for improving their education policies and outcomes. Only students being educated at school are tested. Further detail about PISA and how the data was prepared for this study is provided in section 1 of the technical report (separate to this report).

1.6 Overview of methodological approach

1.6.1 Overarching research design

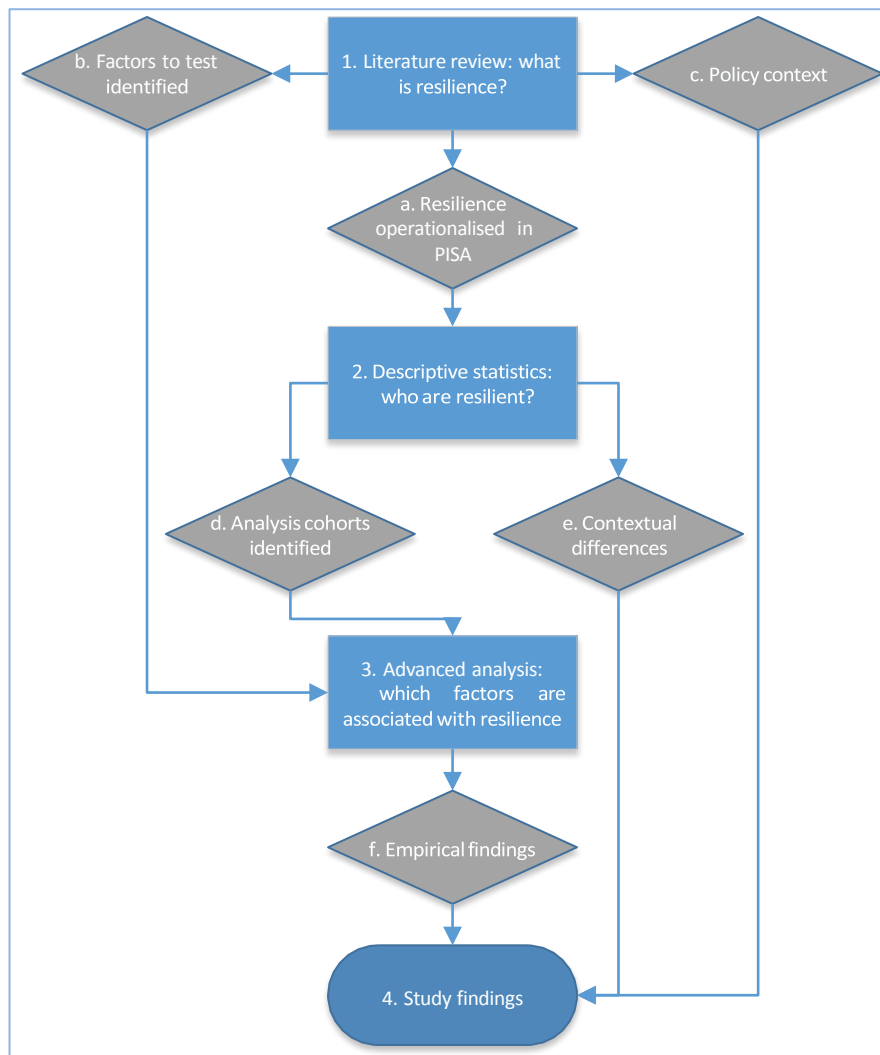
Figure 1.1 provides an overview of the research design for this study. Addressing each step in chronological order, the study involved:

1. A comprehensive **review of the literature** to understand how academic resilience is defined, how academic resilience can be operationalised and what factors may contribute to an academically resilient status. The purpose of this task was to provide a sound evidence base to:
 - a. Underpin how we identify academically resilient students in PISA data;
 - b. Identify factors that may enable or inhibit academic resilience to test in our advanced analyses;
 - c. Support the interpretation of empirical findings by providing Member State and policy context.
2. **Descriptive statistics** to understand the shares and characteristics of academically resilient students across Member States and migrant groups. This stage enabled:
 - d. Identification of analytical cohorts for advanced analyses;
 - e. Exploration of the contextual differences between Member States that may explain the variation in the shares of academically resilient student with a migrant background.
3. **Advanced analysis** to identify the factors associated with academically resilient students with a migrant background. Analyses included regression, multilevel regression, and latent profile analyses. This element of the study provided:
 - f. Empirical findings on the relative contribution of these factors.
4. A **final report** synthesising the empirical findings with the existing literature and high-level input from the study's Scientific Committee and wider Policy Delphi.

Throughout the study, there was engagement and input from a select Scientific Committee consisting of respected academics in the fields of education and migration:

Dr. Carmel Cefai, Dr. Petra Stanat and Dr. Miquel Àngel Assomba Gelabert. Prior to finalising the study findings, a written Policy Delphi exercise was undertaken and consisted of a wider group of relevant stakeholders to support the interpretation and potential implications of our results. A summary of the feedback received through the Policy Delphi consultation is provided in Annex 1 of the study.

Figure 1.1: Research design



In line with the study objectives, students with a migrant background studying in EU Member States are the main focus of this study. Where useful, comparisons are made to non-migrant background students and a selection of non-EU countries.

As part of the research, we also sought to explore the academic resilience of minority language speaking students (defined as non-migrant background students who speak a minority language). However, analysis of minority language students has not been included as a central focus in this study due to the difficulties inherent in reliably defining this group. The PISA variable (which would most closely identify this group) is based only on asking if the language spoken at home differs from the one of the PISA assessment. Our exploratory analysis has underlined for example that some students classified as being 'minority language' may not be at a particular language disadvantage; for example, students in Luxembourg speaking Luxembourgish at home being tested in the

school languages of French or German. Keeping this caveat in mind, we present some initial analyses on minority language speakers in the technical report only.

1.6.2 Analytical procedure

The study utilises a range of analytical techniques to answer the research questions. Below we provide a brief description of the key methods and their rationale in the context of this study. Further detail is provided in the relevant sections of the technical report. Unless stated otherwise, analysis was conducted on PISA data.

- The adoption of “classic” ecologically-driven approaches and innovative empirically- derived approaches to identify academically resilient students in order to examine resilience under multiple perspectives. The empirically-derived approaches included a data reduction technique (cluster analysis) and statistical modelling to identify students who achieve above expectations;
- Descriptive statistics to explore the shares (by Member State) and characteristics of academically resilient students identified with the different approaches. All statistics take account of the PISA sampling design and formal tests of significance were undertaken where appropriate;
- Analysis of Member State gross domestic product (GDP) per capita, size, composition of migrant populations and integration policies from a range of non-PISA sources to understand the contextual differences between Member States that may explain the differences in shares of academically resilient students with a migrant background.
- Advanced analyses of the factors associated with academic resilience:
 - Models predicting student-level resilience: To understand the student and school factors associated with students’ resilience status, logistic regression models were employed;
 - Models predicting school-level resilience: To identify factors associated with schools comprising larger numbers/proportions of resilient students (i.e. “resilient schools”), multilevel-models were employed;
 - Latent profile analyses: To explore the profiles of different levels of resilience. This “person-centred” approach allowed us to tease out distinct sub-groups of academically resilient students that are alike on particular variables.

Regarding the latter two analyses, these were restricted to students identified as resilient using the classic approaches due to their reliability (i.e. similar approaches have been used by other researchers).

Combined, the analyses detailed above provide multiple perspectives of academic resilience to develop robust empirical findings. Throughout the report, we focus on findings that are consistent across multiple approaches and/or analytical methods. Where useful in answering the research questions, differences in results are also highlighted.

1.6.3 Study limitations

This complex study involved a number of challenges which we were able to navigate appropriately. There are however unavoidable limitations to our analyses. In this section we discuss the key limitations of the study.

A key limitation relates to the key data source, PISA, which was used for our advanced analyses. PISA data, and thus analysis, is cross-sectional. Our analyses can only highlight statistical associations, not causality. Furthermore, much of PISA is self-reported by

students (and in the case of school data, principals). We are unable to account for issues of recall, bias, misinterpretation of questions, etc.

The study focuses on quantitative analysis, identifying strength and direction of associations. It was not possible to assess the lived experience of a student with a migrant background with the PISA data – qualitative methods would be required for this type of analysis.

We focus on mathematics achievement only. Given the range and complexity of the statistical techniques undertaken, it was necessary to focus on just one subject. Mathematics was selected due to the relative reliability and consistency with which this subject is taught across countries compared to other subjects within the PISA dataset. Whilst achievement in mathematics is correlated with literacy and science, and so we suggest some generality, further research in these subject areas may be required.

Following from this, some of our findings reflect patterns known to be implicated in mathematics, but not necessarily in other subject domains. For example, at the EU level our study found male students with a migrant background achieved higher in mathematics than females and this is a finding that is also found among male students with a non-migrant background². We would therefore not generalise from this finding to hypothesise that male students with a migrant background would also achieve more highly in literacy (especially as female students with a non-migrant background are shown to significantly outperform male students with a non-migrant background in this subject domain).

We also point out that it was agreed that only one plausible value for mathematics achievement be used in analyses. However, plausible values³ are very highly correlated with each other and so it is unlikely our results will have changed had we used more or different plausible values.

When focusing on academically resilient students with a migrant background, there can be small sample sizes, particularly when conducting some analyses (e.g. multilevel modelling where small numbers may cluster in schools). Although we dealt with this through applying different analyses and although this is the reality of the samples investigated, some caution in interpreting findings where small samples exist is important. For this reason, we typically focus on the results that are relevant for all migrant background students in our advanced analyses rather than disaggregating by second-generation and first-generation students.

The study predominantly adopted the OECD groupings and operationalisation of background and outcome factors but there is some inevitable conceptual and empirical overlap in these factors which is important to acknowledge when interpreting findings. For example, self-expectations and motivation were modelled as separate predictor variables when some motivation researchers would conceptualise self-expectations as a motivational factor.

Based on the literature review, a wide range of variables was identified in PISA for analysis. However, due to a combination of missing data, collinearity and some variables being subsumed by composite variables, it was not possible to include all variables in our analyses – some variables are omitted. Furthermore, there are factors beyond those in PISA (e.g. student prior academic achievement) that we could not include as they are not

² On average, males scored higher than females in mathematics in most, but not all, Member States.

³ Plausible values are estimated to enable unbiased estimates of between-group differences.

measured. Nevertheless, the final models did comprise a wide range of student, family, and school-level factors for associations with academic resilience.

1.7 Structure of the report

The remainder of this final report is structured as follows:

- **Chapter 2** focuses on *how* the scholarly literature defines academic resilience, followed by a consideration of the factors that enable or inhibit young people to succeed in education and how resilience is operationalised for this study using PISA data.
- **Chapter 3** considers *who* comprises the academically resilient migrant group. It begins with a description of the overall shares of non-migrant, second-generation and first-generation migrant students. It then explores the shares of migrant groups by economic, social, and cultural status (ESCS) quartiles and presents descriptive analyses of the overall and individual country shares of academically resilient students. This is followed by a discussion of the country-level factors that might explain the difference in shares of resilient students with a migrant background between Member States and a selection of non-EU countries. It concludes with a description of the groups of resilient students with a migrant background that are our cohorts of interest for further analyses.
- **Chapter 4** examines *which key factors* are associated with the academic resilience of students with a migrant background, identified using a range of statistical techniques. The discussion centres on factors that are common across the multiple approaches used to identify academically resilient students with any migrant background (i.e. second-generation and first-generation). It also highlights interesting differences between the approaches and second-generation and first-generation students.
- The report finishes with **Chapter 5** which presents overarching conclusions drawn from the study's findings.
- The study **Annexes** comprise: the summary of feedback from the Scientific Committee and Policy Delphi consultation (Annex 1) and the study bibliography (Annex 2). A separate **Technical Report** provides details of all the analytical approaches applied in the study and additional detail on the variables explored.

2. Defining academic resilience and associated factors

This section focuses on our approach to understanding and defining academic resilience, as well as how to study it empirically within available and appropriate datasets. First it considers definitions of academic resilience, as presented in the academic literature, followed by a review of perspectives on how to identify students considered as academically resilient, and specifically how this can be operationalised using the PISA dataset. The section then turns to consider what aspects, or 'factors', at an individual or school level inhibit or influence young people's ability to succeed academically. It concludes by presenting the set of selected factors that were applied in the analyses conducted within this study using PISA data.

2.1 Definitions of academic resilience in academic research

The issue of "life resilience" or "general resilience" has received a great deal of theoretical, empirical, and applied attention (e.g., Coleman & Hagell, 2007; Luthar, 2003; Masten, 2001; OECD, 2014; Ungar, 2005, 2012; Werner, 2000). Resilience — as a general construct — has been defined as the capacity for, process of, or outcome from successful adaptation in spite of threatening or challenging circumstances (Howard & Johnson, 2000). It is seen as a person's ability to successfully adapt to life and developmental tasks in the face of highly adverse conditions or social disadvantage (Windle, 1999). Notably, the circumstances taken into account are substantial, tending to be framed in terms of "acute" and "chronic" adversities that can be considered "major assaults" on an individual's developmental processes (e.g., see Garmezy, 1981; Lindstroem, 2001; Luthar & Cicchetti, 2000; Martin & Marsh, 2008, 2009; Masten, 2001; Werner, 2000).

In relation to academic adversity, resilience is defined as the "the heightened likelihood of success in school and other life accomplishments, despite environmental adversities brought about by early traits, conditions, and experiences" (Wang, Haertel, & Walberg, 1994, p. 46). Similarly, academically resilient students are those "who sustain high levels of achievement motivation and performance despite the presence of stressful events and conditions that place them at risk of doing poorly in school and ultimately dropping out of school" (Alva, 1991, p.19). Accordingly, academic resilience may be characterised similarly to general (life) resilience — that is, in terms of successful navigation of acute and/or chronic education-related adversity. Examples of this type of adversity might include poor educational background, challenging learning conditions, and low socio-economic status (as relevant to educational opportunity). Other studies dealing with academic resilience tend to focus on migrant groups who experience adverse environmental factors (e.g., violence — Catterall, 1998; poverty — Overstreet & Braun, 1999), underachievers and chronic underachievers (e.g., Finn & Rock, 1997; Gonzalez & Padilla, 1997). Other educational research addresses "clinical" groups such as students with learning disabilities (e.g., Meltzer, 2004; Miller, 2002). Clearly, many of these factors are also salient in the lives of migrant and minority language students (OECD, 2006) — the focal populations of this project.

2.2 Considerations when operationalising academic resilience

There are several schools of thought on operationalising academic resilience and perspectives on how to study it. Some key points of discussion in the literature are considered below.

2.2.1 Deriving group membership

In identifying academically resilient students, there are decisions to be taken as to how to derive group membership. Broadly, there are two approaches: ecologically-driven and empirically-driven.

- **Ecologically-driven groups** are based on factors that occur in predominantly naturalistic ways. Thus, decisions might be based on readily identifiable groups of students in particular socio-economic brackets, parental background, etc. The factors determining group membership are relatively finite, concrete, and present across all contexts of interest, i.e. comparable and generalizable across contexts. Indeed, it is the ecologically-driven approach that tends to dominate methods to identifying academically resilient students.
- **Empirically-driven approaches** are statistically generated and based on more inferential approaches. They tend to comprise within-country analyses to determine the most empirically valid groupings relevant to that country and thus can yield different “cut-offs” from context to context. One example of the empirically-driven approach includes using deviation scores to identify a group of students performing more than one standard deviation (for example) higher in achievement than would be predicted given their background characteristics (e.g., see OECD 2014, 2015 for implementation).

2.2.2 Levels of adversity and risk

Traditional approaches to academic resilience refer to students experiencing relatively substantial adversity. However, there will also be many migrant students who experience education-related adversity, but whose level of adversity would not be deemed chronic or acute. For example, although they may not be the most disadvantaged on various education-related adversity indicators (e.g. poor educational background, impoverished learning conditions, low socio-economic status), they may nonetheless experience some level of disadvantage on these factors. To the extent that their academic pathways are hampered by these (more low-level) adversities, these migrant and minority language students are held back from social and educational opportunity. The capacity to successfully navigate low-level academic adversity is referred to as “academic buoyancy” (Martin & Marsh, 2009). By proposing the concept of academic buoyancy, Martin and Marsh (2009) sought to bridge the gap between major adversity that is experienced by the relative few (e.g., Garnezy, 1981; Lindstroem, 2001; Luthar & Cicchetti, 2000; Masten, 2001; Werner, 2000) and lower-level adversity experienced by the many (Martin, 2012). Although the project focuses most analyses on the more traditional conceptualization of academic resilience (i.e., experiencing relatively substantial disadvantage), it also explores academic buoyancy by “relaxing” some of the selection constraints in the sampling and investigating migrant students who experience less marked disadvantage.

2.3 Operationalising academic resilience in PISA data

Many previous studies have focused on what can be considered as “classic” approaches to identify academically resilient students – the application of cut-offs around individual students’ ESCS and achievement. Typically, this includes students who are in the lowest quartile (bottom 25%) of ESCS and the highest quartile (top 25%; or a specific level) of academic achievement.

Key variable: Economic, social and cultural status (ESCS)

ESCS is collected in PISA as an index variable that provides a composite measure of the following:

- Parents' occupation: measured in PISA as International Socio-Economic Index of Occupational Status (ISEI);
- Parents' education: measured in PISA as the highest level of education of the student's parents, converted into years of schooling;
- PISA composite index of family wealth;
- PISA composite index of home educational resources;
- PISA composite index of possessions related to "classical" culture in the family home.

The inclusion of such a diverse range of factors within the ESCS index makes it a robust measure of socio-economic status of students. Throughout the study, we consider that those in the lowest quartile of this index as disadvantaged.

We focused on the classic approach to identify academically resilient students and also explored a number of other approaches that build on this. The four approaches are detailed in the below table. Further detail regarding the implementation of these approaches, in particular the more complex exploratory clustering and deviation approaches, can be found in the corresponding sections of the technical report.

Table 2.1: Summary of approaches to identify academically resilient students

Approach	
(classic) Resilient	<p>Deriving group membership: Ecologically-driven - lowest quartile of ESCS and above average (i.e. the top two quartiles) academic achievement within country of residence. Levels of adversity and risk: Lowest quartile of ESCS within country of residence.</p> <p>Description: Comprises students in the lowest quartile of ESCS and top two quartiles of mathematics achievement, within their country of residence (i.e. ESCS and achievement quartiles are country relative). These students are defined as academically resilient using the classic approach.</p> <p>This is our primary definition of academic resilience. Although previous studies have typically focused on those in the top quartile (or similar) of academic achievement, we have extended this to above average (i.e. top two quartiles) recognising that this is a considerable achievement for socio- economically disadvantaged students with a migrant background. Furthermore, this approach captures a larger group of students for analyses and, thus, findings that are applicable to a wider cohort of students across Member States.</p> <p>Approach strengths: ESCS comprises multiple relevant factors; Includes students who perform above average – a significant achievement for disadvantaged students with a migrant background; Relative to country of residence.</p> <p>Approach limitations: Does not consider adversities beyond ESCS; Reliant on ex ante "cut offs".</p>

<p>(classic) Highly-resilient</p>	<p>Deriving group membership: Ecologically-driven - lowest quartile of ESCS and highest quartile of academic achievement within country of residence.</p> <p>Levels of adversity and risk: Lowest quartile of ESCS within country of residence.</p> <p>Description: Comprises students in the lowest quartile of ESCS and highest quartile of mathematics achievement, within their country of residence.</p> <p>Approach strengths: ESCS comprises multiple relevant factors; operationalisation (or very similar) has been used in other studies; relative to country of residence; comparable to previous research.</p> <p>Approach limitations: Does not consider adversities beyond ESCS; Reliant on ex ante “cut offs”; Smaller sample of students.</p>
<p>Cluster approach</p>	<p>Deriving group membership: Empirically-derived – students are grouped based on their similarity across a range of factors.</p> <p>Levels of adversity and risk: Lower levels (but not necessarily the lowest quartile) of ESCS, academic expectations, motivation, and relationships relative to peers.</p> <p>Description: A data-reduction technique (cluster analysis) was undertaken on students in the highest quartile of mathematics achievement. Students were clustered (i.e. grouped) together based on how similarly they presented on a range of adversities. The analysis successfully identified a group of students that face greater levels of adversity, relative to their peers, who still achieve academically.</p> <p>Approach strengths: Uses ESCS and other adversity factors; Does not rely on ex ante cut-offs – clustering is data-driven; Identifies a homogeneous cohort of resilient students for analyses.</p> <p>Approach limitations: New approach and further validation in future PISA cohorts required.</p>
<p>Deviation approach</p>	<p>Deriving group membership: Empirically-derived – accommodates students facing multiple adversity factors and varying exposures to them.</p> <p>Levels of adversity and risk: All factors identified as having an enabling or inhibiting effect on academic resilience (see table 2.2).</p> <p>Description: The approach considers students performing above a statistically meaningful level of achievement, after controlling for numerous education-related adversity factors. Linear regression was employed to predict individual students’ mathematics assessment scores, based on how they present on a range of factors (including, but not limited to, ESCS). Students who achieve more than half a standard deviation (of the average PISA mathematics test score in their country of residence) above what they were predicted to achieve (via the linear regression model) were considered resilient– i.e. they exceeded statistical expectations.</p>

Approach strengths: Uses ESCS and other adversity factors; Does not rely on ex ante cut-offs; Any student can be resilient if they outperform their statistically predicted level of achievement.

Approach limitations: New approach and further validation in future PISA cohorts required.

2.4 Factors enabling or inhibiting young people to succeed in education

Four broad groups of factors that enable or inhibit young people to succeed in education emerge in the academic literature, as follows:

- Individual characteristics;
- Family and community characteristics;
- School characteristics;
- Education system and national characteristics.

Each of these groups of characteristics is considered in turn in the following sub-sections.

2.4.1 Individual characteristics

Individual characteristics are of particular importance when identifying pathways that lead to success against the odds. According to Hattie, “students not only bring to school their prior achievement ... but also a set of personal dispositions that can have a marked effect on the outcomes of schooling” (2009, p. 40). One study argued that resilience is a learned skill that young people with a migrant background can acquire at a young age (Crul et al., 2017). This is the case because young people with a migrant background often have to learn to overcome obstacles independently at young ages, particularly as their parents tend to be low-educated, do not proficiently speak the native language, and are consequently less equipped to offer practical support or advice.

Individual factors include:

- **Academic motivation, expectations and engagement.** A good deal of psycho-educational theorising posits academic motivation and engagement factors as important for students’ academic achievement (see Hattie, 2009 for a review). Literature in the areas of expectancy-value (e.g., high academic valuing and expectations; Wigfield & Eccles, 2000), self-regulation (e.g., task management/planning; Zimmerman, 2002), and goals (academically focused mastery goals; Elliot, 2005) position motivation as a vital condition for educational success.
- **Social skills.** Social skills are additionally noted as an attribute important for young people seeking to climb the educational ladder (Wentzel, 2014). If young people are effectively able to interact with a range of individuals, then they are more likely to create a network of support that can assist their upward mobility, including in education.
- **Socio-demographics.** Socio-demographics such as gender are also relevant. In the major migrant study by OECD (2006b), non-migrant males were significantly higher in mathematics achievement in about half the countries, but there were few significant gender effects between first- and second-generation students. Other research has found migrant girls generally outperform migrant boys in school and have higher educational attainment (Qin, 2006), but boys tend to do better in mathematics (Guiso, Monte, Sapienya, & Yingales, 2008; Marks, 2008; Martin, 2004; OECD, 2004).

- **Length of time in the resident nation.** Another individual factor is the length of time in the resident nation (or, age at immigration). For example, it is known that quality of education has a bearing on educational outcomes; hence, first-generation migrants arriving more recently from countries of poorer educational standing have less exposure to the typically higher quality education provided in their new country of residence (Armor, 2003; Barber, 2005). This brings into consideration students of first-generation migrant and second-generation status. For example, Martin, Liem et al. (2013) proposed that first- and second-generation students differ in academic development for numerous reasons. Because they have recently taken residence in their new country, first-generation students may well be faced with more barriers that include learning a new language (OECD, 2018), adjusting to a new culture, and negotiating an unfamiliar curriculum and educational system.

2.4.2 Family and community characteristics

An enduring finding in research is the importance of considering family characteristics in order to explain educational outcomes. For example, there is a correlation between the level of family **socio-economic status** (SES) and educational attainment of young people. Because migrant and minority language children are more likely to be in low-income home environments (Blom & Severiens, 2008), they are at particular risk academically. Thus, in most international studies, SES is a consistent factor predicting migrants' weaker academic performance (Buchmann & Parrado, 2006; Levels & Dronkers, 2008; Marks, 2005; OECD, 2006b and 2018; Pong, 2009; Schnepf, 2007).

Low SES is also a significant barrier for children because resources available in the home significantly support achievement (Gottfried, 1984) and engagement (Mansour & Martin, 2009). For example, research has shown that access to and the use of technology within the home can support learning (Fuchs & Wößmann, 2005; Pomerantz & Moorman, 2007), as can tutoring for any school-related difficulties (Cohen, Kulik, & Kulik, 1992; Greenwood, Terry, Utley, Montagna, & Walker, 1993).

Parental education is additionally related to the manner in which the home environment is structured. Higher-educated parents are more likely to create a home environment in which educational development is supported. Examples of such influential support include: having a positive attitude towards school; and subsequently translating this into concrete support such as helping with homework; and offering advice on school matters (Crul et al., 2017; Schnell, Keskiner, & Crul, 2013); providing educationally-oriented resources as well as equipment (e.g., technology) that can assist their child to succeed academically (Chiu & Chow, 2015). They are also more likely to take an active role in their children's education by spending more time reading with their children and assisting with any academic-related issues and challenges (e.g., Gonzalez, 2002; Mansour & Martin, 2009; Pomerantz & Moorman, 2007).

The **composition, and level of cohesion, of families** has proven to be a factor in the educational outcomes of children of migrant descent as well (Kao & Rutherford, 2007). Higher rates of upward social mobility have been noted among young people whose parents are together, as well as among young people where extended families (that are common in migrant and minority language communities; Kofman, 2004) play a role in everyday lives. This can be explained by the fact that there are more adults who can play a motivating and guiding role within the young people's lives, thus potentially steering them away from negative pathways.

Owing to the fact that first-generation migrant parents are generally less fluent in the native language of the host country than their children, the notable influence of **sibling support** should also be highlighted. For example, cross-national quantitative research on the educational mobility of second-generation Turks in Austria, France, and Sweden has shown that the involvement of older siblings in terms of practical help and schoolwork assistance has a significant effect on their younger siblings' educational outcomes (Schnell, 2014).

Language spoken at home is another factor important to consider (Janta & Harte, 2016). Speaking a non-resident language at home may hinder the uptake of the resident language and indicate possibly poor integration of the family with the resident nation (Kalmijn, 1996). This will also impact parents' capacity to assist with schoolwork and interact with the school. Indeed, Entorf and Minoiu (2005) found that migrants' reading proficiency improved more rapidly when the language spoken at home was the resident language (see also Meunier, 2011; Schnepf, 2006).

2.4.3 School characteristics

The **structure and effectiveness** of schools should also be taken into account when considering the educational outcomes of young people. At school there are instructional factors that support achievement in the face of adversity, as well as school resources, school-level advantage, and intake characteristics relevant to its students that can make a difference (Hattie, 2009; Martin, 2016; Perry & McConney, 2010). Thus, school-related factors represent an additional source of achievement variance that is important when seeking to understand migrant status and academic resilience.

Alongside home SES, there is also **school SES**, with PISA data showing that higher SES is significantly associated with positive academic outcomes (Perry & McConney, 2010). Aligned with school SES is the **school's location**. For example, inner urban schools often experience significant educational disadvantage (Lippman, Burns, & McArthur, 1996). As relevant to this, migrant and non-migrant students tend to cluster in different schools, with research suggesting that migrant students are more likely to attend **larger schools**, that comprise teachers of lower teaching credentials, and that are located in urban and inner city areas of lower SES standing (Meunier, 2011; Pong & Hao, 2007; Rangvid, 2007). Indeed, OECD (2006b) found between-school differences in how migrant students fared academically and suggested that much of this was due to differences in migrant enrolment numbers between schools. Furthermore, although migrants tend to cluster in poor inner urban areas that present their own academic challenges (Portes & MacLeod, 1996), in some nations there is encouragement for new arrivals to decentralise out of the city and into rural and regional areas where there may be more employment and housing opportunities for them (FECCA, 2015), but which also pose educational quality and access issues (Alston & Kent, 2003).

Regarding **school size**, students in small and medium sized schools are reported to have a more positive educational experience (Lee & Smith, 1997; Newman et al., 2006). Given the rise in migration across Europe, there is increasing pressure on schools to accept larger enrolment numbers (Eurostat, 2017) and thus the potential benefits of smaller schools may be diminished, though the extent to which there are diminishing numbers of native-born students in some schools may counter this effect. However, it may also be the case that larger schools are able to offer a wider curriculum to students that better meet their individual needs and may also receive larger amounts of funding for resources and personnel (that may better support migrant students) based on their larger enrolment numbers.

The **role of teachers** is particularly important in explaining young people's academic attainment (Croesnoe, Kirkpatrick Johnson, & Elder, 2004). In numerous ways teachers impact students' academic outcomes and assist them to deal with academic adversity. For example: interactions with the teacher provide students with greater knowledge about what is needed to fit in with the classroom and activities within it (Wentzel, 2009); students develop beliefs and values that align with those held by their teachers which helps them function more effectively in the academic domain (Deci & Ryan, 2012); good teacher- student relationships have an energising function that motivates students to invest effort and persist in the face of difficulty (Furrer & Skinner, 2003; Furrer, Skinner, & Pitzer, 2014); and, teachers act as mentors to young people, providing them with advice as well as moral support regarding academic and non-academic issues (Martin & Dowson, 2009). Another key element of support that schools and teachers can offer is **access to adaptive social networks**. Young migrant or minority language students with disadvantaged backgrounds generally do not have access to a social network that is able to offer direct support and access to academic opportunities.

Instructional methods and quality are also keys to academic development. Through the course of school, there is an increase in frequency of assessment, homework, subjects to be covered, and content difficulty. These place increasing cognitive and other demands on students (Sweller, 2012) and may be especially difficult for migrant and minority language students who can struggle with the "local" language or have other education- related barriers (OECD, 2006). Thus, it is important to approach instruction in ways that help ease the cognitive burden on students, particularly those who academically struggle (Kirschner, Sweller, & Clark, 2006; Mayer & Moreno, 2010). Recently, and although not covered by PISA, "load reduction instruction" (LRI; Martin, 2016; Martin & Evans, 2017) was introduced as an instructional model that seeks to ease the cognitive burden on students as they learn—and has been proposed as being especially important for academically at-risk learners.

Creating a **positive learning environment** within a school can also promote academic outcomes. For example, research finds group-level motivational climates (e.g., goal structure, collective efficacy; Elliot, 2005; Martin et al., 2012) are significantly linked to academic outcomes (e.g., Friedel, Cortina, Turner, & Midgley, 2010; Martin et al., 2012, 2015; Wang & Holcombe, 2010). The learning environment can also be considered in terms of acculturation challenges that occur when navigating the language, expectations, and rules at school in a new culture (Motti-Stefanidi & Masten, 2017; Staudenmeyer, 2016; Sugarman et al., 2016). Indeed, Motti-Stefanidi and Masten (2013) suggest that success in school is partly due to a student's level of competence in the language and customs of the local culture. Added to this is the need to bridge the gap between school life and students' home life (Motti-Stefanidi et al., 2013), which can cause conflicts inside and outside the home. An additional experience of academic adversity common to migrant and minority language students involves having to deal with prejudice and discrimination at school (and elsewhere) (Motti-Stefanidi & Masten, 2017; Staudenmeyer et al., 2016). Such negative experiences can detrimentally impact migrant and minority language students' well-being and resilience (Motti-Stefanidi & Masten, 2017).

2.4.4 Education system and national factors

There are also differences in approaches to immigration and education between education systems (e.g. jurisdictions) and countries. Education systems within the EU differ significantly and this can have a notable effect on the academic achievement of young migrant or minority language students. For example, **schools or jurisdictions with early selection and tracking systems** may adversely affect young students from disadvantaged backgrounds as they are implemented before migrant students have had sufficient opportunity to academically develop or succeed (Schnell et al., 2013).

Conversely, later tracking, such as is implemented in France, allows young students more time to gain proficiency in the host language, acquire knowledge on cultural particularities, and prepare for branching into different (potentially higher) academic streams (Crul, Schnell, Herzog-Punzenberger, Slooman, & Aparicio-Gomez, 2012).

National funding to support new arrivals in schools is also a factor. It has been noted in Poland, for instance, that — despite regulations — heads of primary schools were hesitant to enrol migrant children (particularly children of refugees or ‘irregular’ migrants, e.g. overstaying of visas or a failure to prolong a permit). This was because the school would need to overcome obstacles such as educational gaps, a lack of Polish proficiency, and potential psychological consequences of trauma that may be linked to forced removal or escape from one’s country of origin. Significantly, new funding sources allowed for additional language classes for migrant students, and de-urbanisation processes led to smaller class sizes, which in turn led to more time available for teachers to offer additional support for disadvantaged migrant or minority language students (Koryś, 2005).

Additional factors that influence progression paths involve the school-starting age (including early childhood education and care), how many contact hours there are in primary school, the permeability of schools and education systems, and the systems of transition to higher education institutions.

There are also **cross-national differences** in the EU in terms of migrant (vs. non-migrant) students who have considerably lower odds of being high or average achieving and higher odds of being low achieving. In Bulgaria, Denmark, Finland and Slovakia, for example, migrant students are 3-4 times more likely to perform below a basic level of mathematics (defined as proficiency level 2), even accounting for differences in socio-economic background in both groups (OECD, 2016).

There tends to be fewer achievement gaps in countries where substantial **support for upward mobility** (e.g., language support programs) exists, whereas in other countries, migrants have little or no access to public education (Hochschild & Cropper, 2010; OECD, 2006b). The influence of education system factors for migrant and minority language students can also vary between countries. For example, Schnepf (2007) found that language skills explained a significant proportion of the achievement gap for migrant and minority language students, but that **school segregation policies** were additional determinants of achievement in some European countries (see also Meunier, 2011). In addition to between-country achievement differences, there are also between-country differences in problem solving, particularly in relation to variations in nations’ respective levels of wealth (OECD, 2003); wealth improves health and nutrition that assists in the development of cognitive competence (Behran et al., 2006).

2.5 Identifying factors for analyses in PISA data

Table 2.2 provides an overview of the factors identified in PISA and tested in our advanced analyses. Further detail, including factors that were considered but could not be included due to statistical considerations, is provided in section 1 of the technical report.

Table 2.2: Factors tested in advanced analyses

Dimension	Factor
Individual level characteristics	Age of student
	Gender of student
	Minority language status
	Student has repeated a grade
	Academic expectations
	Motivation*
	Peers/friends*
	Skips or is late for school*
Family background and home environment	Economic, social and cultural status (ESCS)*
School characteristics	School size
	Class size
	Public or privately operated school
	School location (rural – urban)
	Proportion of school funding from government
	Access to computers
	Access to internet
	Extracurricular activities available
	Degree of school leadership*
	Level of school autonomy*
	School undertakes evaluation
	School monitors teachers using student assessments
	School improvement practices in place*
	School uses achievement data to make decisions
	Proportion of staff taking part in professional
	Degree to which teachers participate in school
	Study room provided
	Staff help with homework
Average ESCS index for students attending each school*	

*composite factor derived with multiple variables

Regarding education system and country-level factors, we were not able to include these explicitly in our statistical models. This was due to the remit of the study to focus on PISA data only and small sample sizes of migrant background students in some countries limiting the levels of analysis.⁴

However, in order to identify potential patterns between the shares of resilient students and country-level factors, we undertook descriptive analysis of countries' available GDP per capita, size, composition of migrant populations and integration policies.

⁴ Whilst some PISA variables could be aggregated at the country level and multilevel models (students within schools and schools within countries) employed, this was not possible due to small sample sizes.

Additionally, in subsidiary analyses, we developed a specific approach to grouping Member States for this study in order to assess whether there are similarities in the factors associated with academic resilience between Member States. However, this analysis yielded limited additional insight about academic resilience and as such is only presented in the technical report.

3. The shares and characteristics of academically resilient students

In this chapter, we seek to answer the question of who comprises the academically resilient migrant group. In particular, we ask the following research questions:

- What is the share of academically resilient students with a migrant background across the EU?
- How do these shares compare across EU Member States?
- Is there a significant difference in the share of academically resilient students with a migrant background and the share of academically resilient students with a non-migrant background?
- How do the shares of academically resilient students in the EU compare to non-EU countries?
- What country-level factors may explain differences in the shares of academically resilient students with a migrant background?
- What characteristics do students identified as academically resilient exhibit?

We start by considering the overall shares of non-migrant, second-generation and first-generation migrant students. We then explore the shares of migrant groups by ESCS quartiles – an important factor across our approaches to identifying academically resilient students, particularly the classic approaches. Descriptive analyses are then presented to understand the shares, overall and by individual country, and characteristics of academically resilient students.

We move on to discuss country-level factors that might explain the difference in shares of resilient students between Member States and a selection of non-EU countries. The chapter concludes with a description of the groups of resilient students that are our cohorts of interest for further analyses.

All statistics presented in this chapter account for the PISA survey design in line with OECD guidance. Student weighted percentages and, where appropriate, respective standard errors (SE)⁵ are provided.

Throughout this chapter, we advise a level of caution when making comparisons between, and within, Member States for statistically significant differences. This is due, sometimes, to smaller sample sizes in some Member States on which statistics are based and, as a result, there is less certainty around the estimated shares of students (i.e. large standard errors). This is particularly the case for the shares of resilient students (all approaches). Accordingly, when making comparisons, we only highlight those that can be considered as relatively central to the stated objectives earlier in this report. Further statistics, including those on which figures are based, are provided in the technical report.

3.1 Shares of non-migrant and migrant background students

Based on PISA 2015 data, analysis revealed that the majority of students (89%) across EU Member States were non-migrant background. Second-generation students accounted for 6% and first-generation migrant students for 5%.⁶

⁵ Standard errors are the level of uncertainty – the margin of error – that exists around the estimated statistic. Where standard errors overlap, we cannot conclude that average scores are significantly different from each other, as there is a probability that they are in fact the same.

⁶ The OECD (2018) resilience study identified greater proportions of migrant background students. This was due to the inclusion of: foreign-born children of native-born parents; native-born children who have at least one foreign-born parent in their definition of migrant-

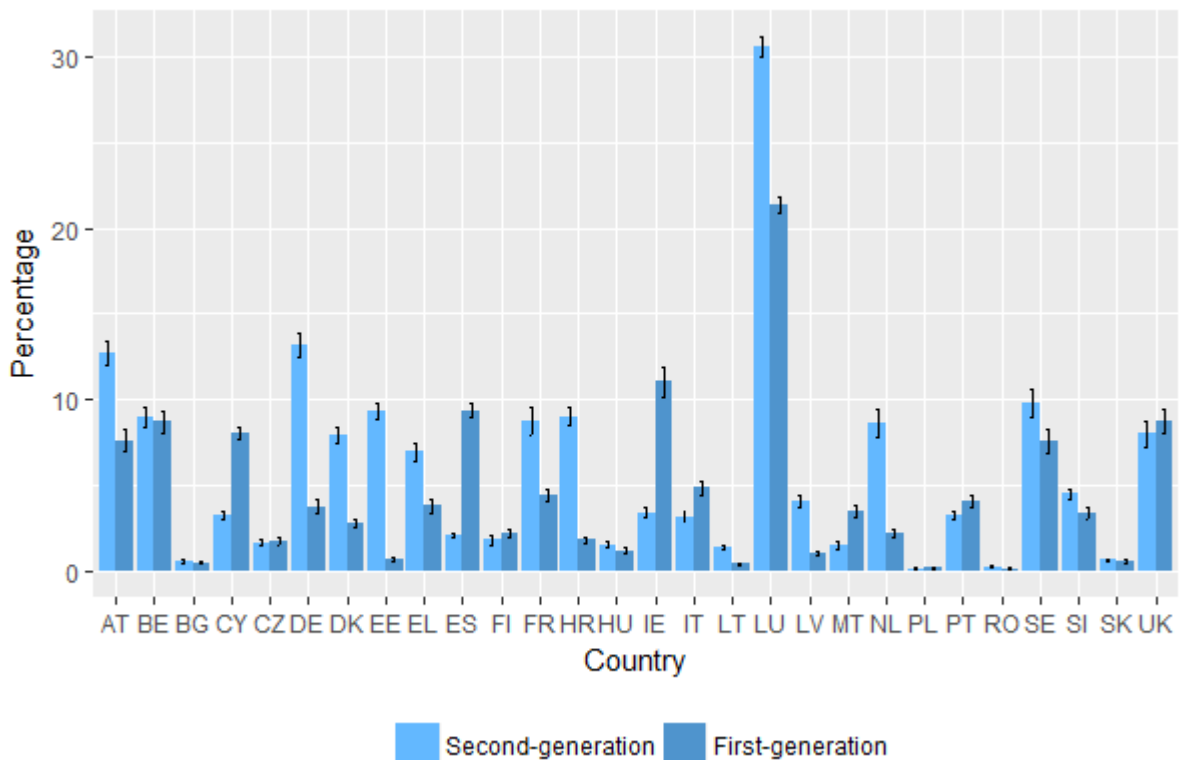
Figure 3.1 details the shares of students by migrant background for each Member State. For readability, only the shares of second-generation and first-generation students (the focus of this study) are provided. A table presenting these results, including the shares of non-migrant background students (i.e. the remaining proportion of students), is provided in the technical report (table A.2.2). Typically, wealthier countries with long histories of immigration had greater shares of students with a migrant background relative to newer Member States.

Regarding second-generation students, Luxembourg had the greatest proportion (31%) followed by Germany (13%) and Austria (13%), whilst Slovakia, Bulgaria, Romania and Poland all had shares of less than 1%.

First-generation migrant students accounted for significant minorities in Luxembourg (21%), Ireland (11%) and Spain (9%). Bulgaria, Estonia, Latvia, Lithuania, Poland, Romania and Slovakia, and all had less than a 1% share.

As indicated by the error bars⁷ in figure 3.1, in most cases, differences between the shares of second-generation and first-generation students within Member States can be considered statistically significant.

Figure 3.1: Shares of migrant background students by Member State



Source: Ecorys analysis of PISA 2015 EU-28 student dataset. N = 214,444. Missing = 6,379

background. This study, like previous OECD studies, only focuses on second-generation and foreign-born (i.e. first generation) children where both parents are foreign-born.

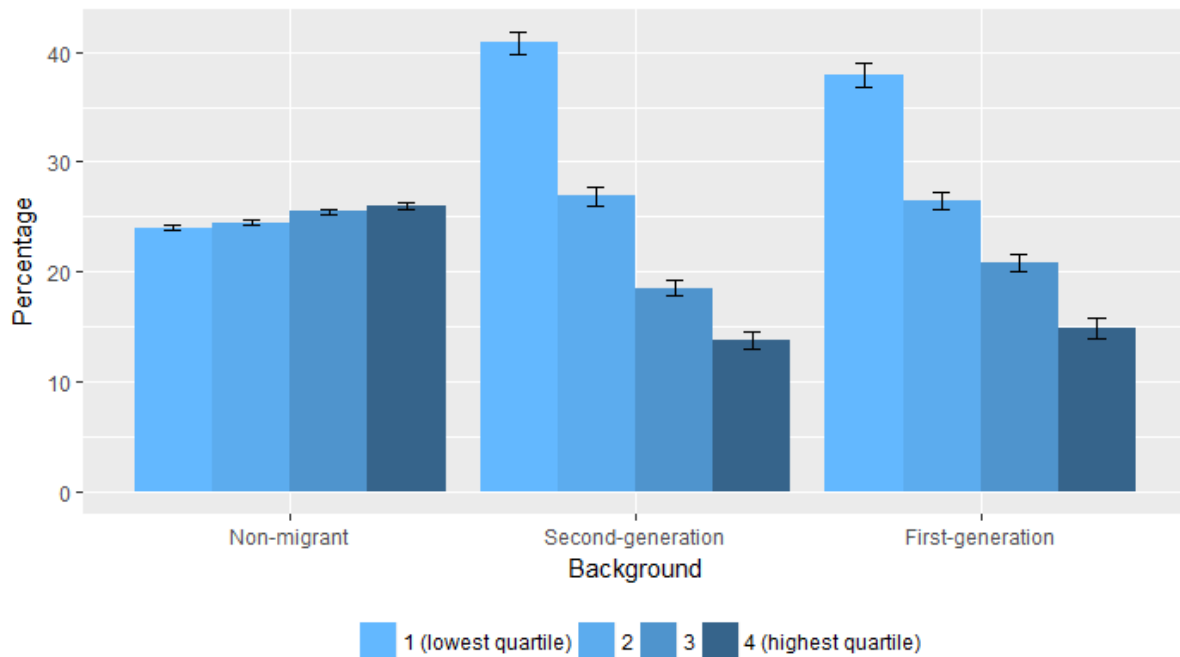
⁷ Error bars depict the standard error (SE) associated with estimated statistic – in this case, the level of uncertainty around the proportion of second- and first-generation students within Member States

It is important to note that these statistics may not fully capture the extent of the most recent waves of migration, as it is unlikely that many newly arrived refugees were integrated into education systems by the time that PISA 2015 took place. In addition, these statistics do not capture those students who left schooling before the age of 15 (the age at which PISA is conducted). The average coverage achieved of the target population for PISA in 2015 was 89% (OECD, 2015).

3.2 Disadvantage by migrant background

All students within each country were placed into quartiles based on their ESCS index score - a low ESCS score indicates higher levels of disadvantage. Figure 3.2 shows that there are higher concentrations of low ESCS for second-generation and first-generation students (i.e. they are considered disadvantaged) relative to non-migrant background students. Approximately two-thirds of second-generation and first-generation students have a below average (in the lowest two quartiles) level of ESCS. This highlights that migrant background students are more likely than their native peers to face socio-economic disadvantage, which is associated with academic performance.

Figure 3.2: ESCS quartiles by migrant background for EU-28



Source: Ecorys analysis of PISA 2015 EU-28 student dataset. $N = 214,444$. Missing = 7,677

Analysis at the Member State level revealed that the pattern of higher concentrations of low ESCS for second-generation and first-generation students was evident in most Member States. Detailed analysis by Member State is provided in section 2 of the technical report (table A.2.3).

3.3 Academically resilient students in the EU

This section presents the shares of academically resilient students, operationalised using the classic approach, comprising students in the lowest quartile of ESCS and top-two quartiles of mathematics achievement (see section 2.3 for detailed explanation).

The shares of students identified as highly-resilient, and resilient using the cluster and deviation approaches followed a similar trend to those identified as resilient using the

classic approach and, as such, are not presented in detail in this section. Detailed analysis of these groups of students is provided in the technical report (see tables A.2.7, A.3.4 and A.4.4, respectively).

3.3.1 Member States with very few or none academically resilient students with a migrant background

Following the assessment of the sample sizes of academically resilient students identified with the classic approach (resilient and highly-resilient), which has been the primary focus of this study, it was necessary to restrict the Member States included to those where numbers were sufficient for advanced analyses across all approaches in the interest of consistency. Member States that were excluded at this stage are:

- Bulgaria
- Czech Republic
- Estonia
- Hungary
- Latvia
- Malta
- Poland
- Portugal

It is important to note that the exclusion of the above Member States does not imply that academic resilience is absent. Rather, as highlighted in Figure 3.1, these Member States typically have low shares of students with a migrant background and, as such, represent smaller samples within PISA from which resilient students can be identified.

3.3.2 Shares of academically resilient students in the EU

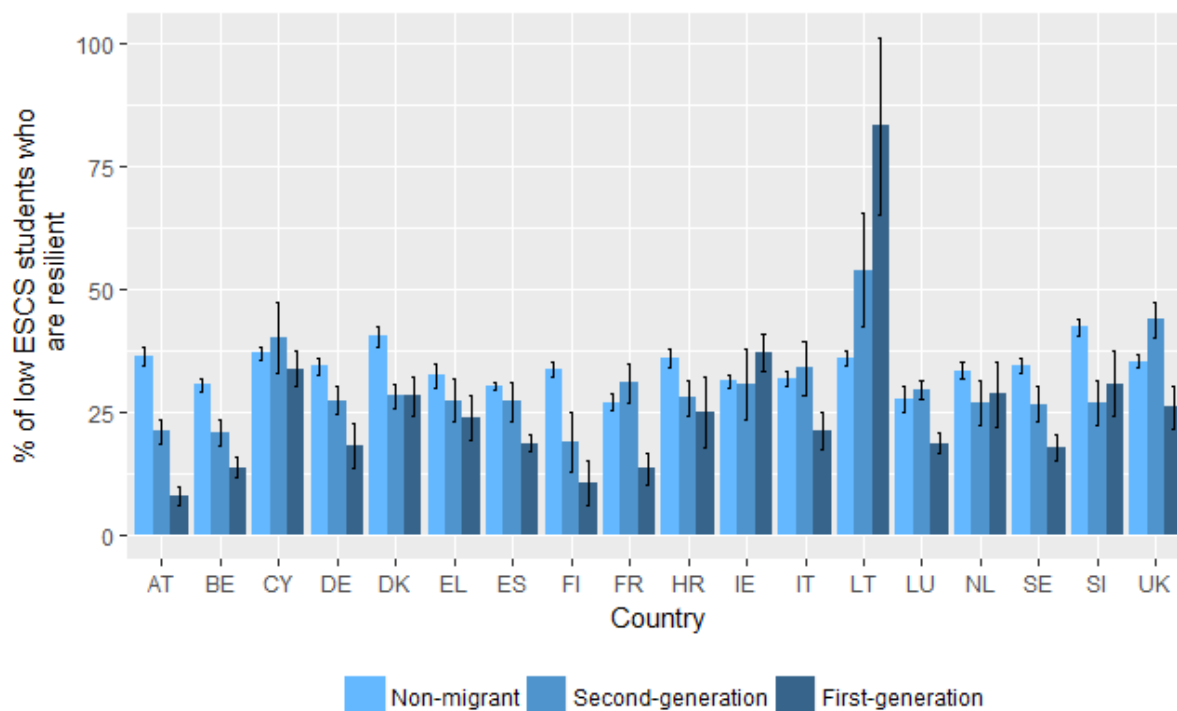
As a proportion of all students in the lowest quartile of ESCS, the shares of resilient students using the classic approach across the Member States retained for analysis were 32% for non-migrant background students, 30% for second-generation students and 19% for first-generation students.

Figure 3.3 shows the shares of academically resilient students in EU Member States. The general trend was for Member States to have a slightly greater proportion of non-migrant background students than second-generation students that were resilient, and significantly less first-generation resilient students. Interesting exceptions to the general trend included:

- Higher shares of resilient second-generation students in France, Italy, Luxembourg and the UK relative to non-migrant background students.
- A greater proportion of resilient first-generation students than non-migrant and second-generation students than non-migrant background students in Ireland.
- Substantial shares of resilient migrant-background students in Cyprus, Ireland, Netherlands and the UK.

A table presenting these results is provided in section 2 of the technical report.

Figure 3.3: Shares of resilient students, by EU Member State (using the classic approach)



Source: Ecorys analysis of PISA 2015 Restricted EU-18 student dataset. N = 38,802 (lowest ESCS quartile only)

Regarding the other approaches used to identify academically resilient students, the highly-resilient and cluster approaches demonstrated similar trends to those in Figure 3.3 (classic resilient approach), both in terms of: typically, greater shares of resilient students with a non-migrant background relative to those with a migrant background; and the Member States exhibiting higher proportions of resilient second-generation and first-generation students. The deviation approach identified similar shares of resilient students across all migrant/non-migrant background students and Member States.

3.3.3 Exploration of characteristics which may explain the differences in resilience across Member States

In this section, we explore specific features of EU Member States that may explain the difference in shares of academically resilient students with a migrant background. We explore whether there are any patterns in the shares of resilient students based on specific characteristics of Member States, namely:

- GDP per capita;
- Size (overall population);
- Composition of migrant populations within each Member State (i.e. migrant stocks) and a number of associated characteristics;
- Migrant integration policies across a range of areas, including education.

It is important to note that the following assessment is only descriptive and based on a limited range of sources. It was not possible to include country-level factors formally in our quantitative analyses due to the small sample sizes of academically resilient students with a migrant background. However, this section still provides some potential pointers to help understand why the shares of resilient students may differ between Member

States. All of these factors would of course need to be explored more deeply in further research to confirm their influence on resilience.

GDP per capita

In relation to GDP per capita⁸, there was a mixed picture in terms of the academic resilience of second-generation and first-generation students. While Member States with high shares of resilient second-generation students typically had above average GDP, other 'wealthy' Member States - notably Austria, Belgium, Sweden and Finland - had some of the lowest shares. With regard to first-generation resilient students, Cyprus and Slovenia (relatively less affluent Member States) had shares above that of some wealthier nations including the Netherlands, Denmark and the UK.

Size

In terms of overall population⁹, there seemed to be no observable patterns in relation to shares of resilient students for Member States with smaller or larger populations. For example, Cyprus (one of the smallest populations in the EU) and the UK (one of the largest populations in the EU) had comparable shares of resilient students with a migrant background.

Composition and characteristics of migrant populations

In order to explore whether there is a link between the composition of migrant populations (i.e. 'migrant stocks') and the shares of academically resilient students, we assessed the most common countries of origin for each Member State. The key data source for this analysis was the Labour Force Survey (LFS) from 2014 and focused on the country of birth of first-generation migrants.¹⁰ We selected this source for the following reasons:

- Although more recent data is available, responses to the LFS in 2014 most closely reflect the migrant situation in Member States at the time of PISA testing (2015) – the key data source for this study;
- Data on the country of birth of first-generation migrants was more complete and had wider coverage compared to data for the second-generation population;
- Focusing on first-generation migrants of working age (i.e. LFS respondents) captures both first-generation and second-generation students. By definition, the parents (those completing the LFS) of first-generation and second-generation students are first-generation migrants. The children of second-generation parents would be defined as 'non-migrant' in PISA.

The migrant population in the United Kingdom, which has relatively high shares of both first- and second-generation resilient students, comprises large shares of Polish, Indian and Pakistani citizens. With regard to those from India and Pakistan, this reflects historical migration which has been present since the 1950s (Eurostat, 2011). Furthermore, around half of those from non-EU countries migrating to the United Kingdom are university educated – this is one of the highest rates in the EU and indicates

⁸ Source: International Monetary Fund 2018, available here: <https://www.imf.org/external/pubs/ft/weo/2018/01/weodata/index.aspx>

⁹ Source: Eurostat, available here: [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Demographic_balance,_2016_\(thousands\).png](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Demographic_balance,_2016_(thousands).png)

¹⁰ Source: Eurostat 2016, available here: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=First_and_second-generation_immigrants_-_statistics_on_main_characteristics

that a large proportion of migrants seek high-skilled work.¹¹ Ireland and Luxembourg also have high shares of university educated non-EU migrants.

In Luxembourg, the main countries of origin of migrants are France, Belgium and Portugal.

The majority of the migrant population in Slovenia, a Member State with particularly high shares of resilient first-generation students, is from countries within close geographical proximity.

Regarding Member States with lower shares of resilient students with a migrant background, the prevalence of particular countries of origin of migrants may reflect recent more events. For example, in 2014, the largest group of migrants in Sweden were born in Iraq – many of whom came to Sweden quite recently seeking asylum (Eurostat 2011). It could be the case that these migrants have a different set of needs to which the host country will not have had time to adapt to, fully, at the time of PISA assessment. Austria has a relatively high share of migration from non-EU countries, of which very few are university educated.

A common feature across Member States with low shares of resilient students is a large (greater than 10%) difference in the employment rates of non-migrant and migrant background populations¹² – this indicates less upward social mobility that could negatively influence student attitudes towards schoolwork and/or be a sign of ineffective integration policies.

Migrant integration policies

In order to understand how Member States differ in terms of their policies on migrant integration and whether there is any pattern which can be observed between these policies and the shares of academically resilient students, we utilised data from the Migrant Integration Policy Index (MIPEX) 2015.¹³ MIPEX is a study that assesses and scores the integration policies for migrants across a range of policy areas on the basis of established criteria. While we recognise that Member State policies are only partially comparable, MIPEX does provide a recognised and objectively justifiable measure of the quality and reach of policies within a country that can promote the potential integration of migrants.

Regarding the overall MIPEX integration scores (scored 0 – 100) for Member States, there appeared to be no observable pattern in relation to Member States with higher shares of resilient students. While most Member States with high shares of resilient students had above average integration scores, Cyprus and Slovenia were amongst the lowest, 35 and 44, respectively. Furthermore, Sweden (78), Finland (69) and Belgium (68) had the highest integration scores, despite lower shares of resilient students.

Similarly, for the education policy dimension, there were limited differences which could potentially explain the shares of resilient students within Member States. The UK was the only country with high shares of resilient students with a relatively strong (57) education policy integration score. Again, Sweden (77), Finland (60) and Belgium (61) scored the highest on this measure but did not exhibit high shares of academic resilience.

¹¹ Source: MIPEX 2015, available here:
<http://mipex.eu/sites/default/files/downloads/files/mipex-2015-book-a5.pdf>

¹² Source: Eurostat 2016. Available here:
https://ec.europa.eu/eurostat/statistics-explained/index.php?title=First_and_second-generation_immigrants_-_statistics_on_labour_market_indicators

¹³ Source: MIPEX 2015, available here:
<http://mipex.eu/sites/default/files/downloads/files/mipex-2015-book-a5.pdf>

However, assessment of specific elements of education policies revealed that Member States with high shares of resilient students tended to score highly around targeting the needs of migrants. Additionally, the UK (90) and Denmark (80) placed emphasis on intercultural education.

Member States with high shares of resilient students also tended to fare well on measures relating to access to the labour market and general support around labour market mobility. This supports the finding in the previous section which suggested that a larger national employment gap between the migrant and non-migrant populations was a potential factor in lower rates of migrant resilience.

Differences across other policy dimensions did not yield any other potential explanations, with the majority of Member States scoring above average.

Overview of the factors that may explain differences in shares of academically resilient students

Our assessment of country-level factors that may explain the shares of academically resilient students indicates that the composition and characteristics of migrant populations within a country, as well as the focus of specific migrant integration policies, may play an important role.

However, it is important to note that we have only been able to explore some tentative links with these factors. In the UK, it could be the case that the combination of strong integration policies and long established migrant populations (e.g. those from India) have contributed to higher shares of academically resilient students with a migrant background. Whereas in Sweden, despite comprehensive migrant integration policies, it may be the case that academic resilience, among first-generation migrants, was not particularly marked due to the fact that education systems and policies have not yet been able to adapt to the recent flows of migration or the specific needs of these groups. Further research, including, via qualitative research, on the nature and experiences of migrant students within Member States, would be required to further explore these potential interactions.

In summary, based on the research that we were able to carry out within the scope of this study, higher shares of academically resilient students with a migrant background appeared to be more common in Member States where there were:

- Geographical/cultural/educational symmetries between the Member State and country of origin. For example, migration to Slovenia from nearby countries or the concentrations of French and Belgian populations in Luxembourg;
- Generally highly-educated migrant population and, drawing on a common theme across Member States with lower shares of resilient students, less of an employment gap between migrants and non-migrants;
- A long history of migration from particular countries. For example, the Indian population in the United Kingdom or the French, Portuguese and Belgian population in Luxembourg;
- Effective policies in place to target the needs of migrant students, implement intercultural education and support the labour market mobility of migrants.

3.4 Shares of resilient students in non-EU countries

In this section, we expand our analysis to non-EU countries to compare the shares of academically resilient students with a migrant background with those in EU Member States. We focus on the following countries with historically high proportions of migrant background students: Australia (AUS), Canada (CAN), the United States of America (USA) and New Zealand (NZL).

Analysis is provided for resilient students using the classic approach only. Additional analyses, including the shares of highly-resilient students, are provided in the technical report.

3.4.1 Shares of non-migrant and migrant background students

The shares of second-generation and first-generation students in the selected non-EU countries were considerably higher than the EU Member State averages (6% and 5%, respectively in the EU). The countries with the highest shares of second-generation students were Canada (16%) and the USA (16%) followed by Australia (13%) and New Zealand (11%). New Zealand had the highest share of first-generation students (16%) followed by Canada (14%), Australia (12%) and the USA (7%).

3.4.2 Deprivation by migrant background

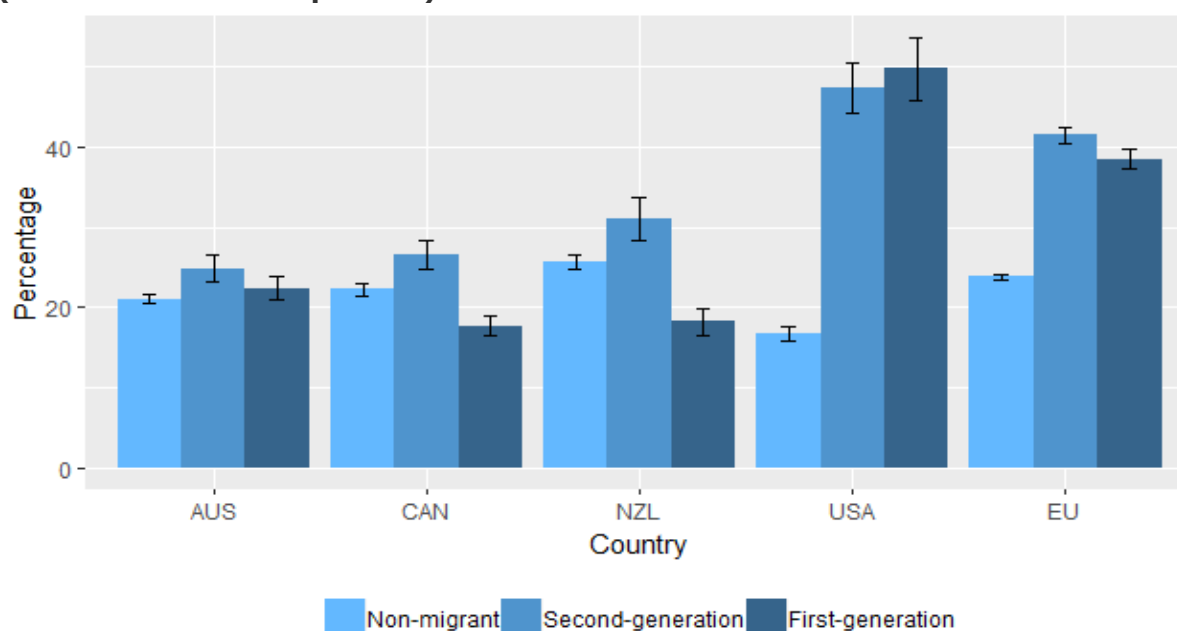
Figure 3.7 details the shares of students considered socio-economically disadvantaged (i.e. in the lowest-quartile of ESCS) with a migrant background in Australia, Canada and New Zealand either similar to or lower than non-migrant students:

- New Zealand (17%) had the lowest proportion of first-generation students in the lowest quartile of ESCS followed by Canada (18%) and Australia (22%);
- Australia (25%) had the lowest share of second-generation students in the lowest quartile of ESCS followed by Canada (27%) and New Zealand (31%).

There was a very different picture in the USA where just under half of all students with a migrant background were in the lowest quartile of ESCS, compared to just 17% of non-migrant background students.

The proportion of second- and first-generation students considered deprived in the EU (just those Member States selected for advanced analysis) was higher than in Australia, Canada and New Zealand but not as high as in the USA.

Figure 3.7: Shares of students in the lowest quartile of ESCS by non-EU country (EU included for comparison)



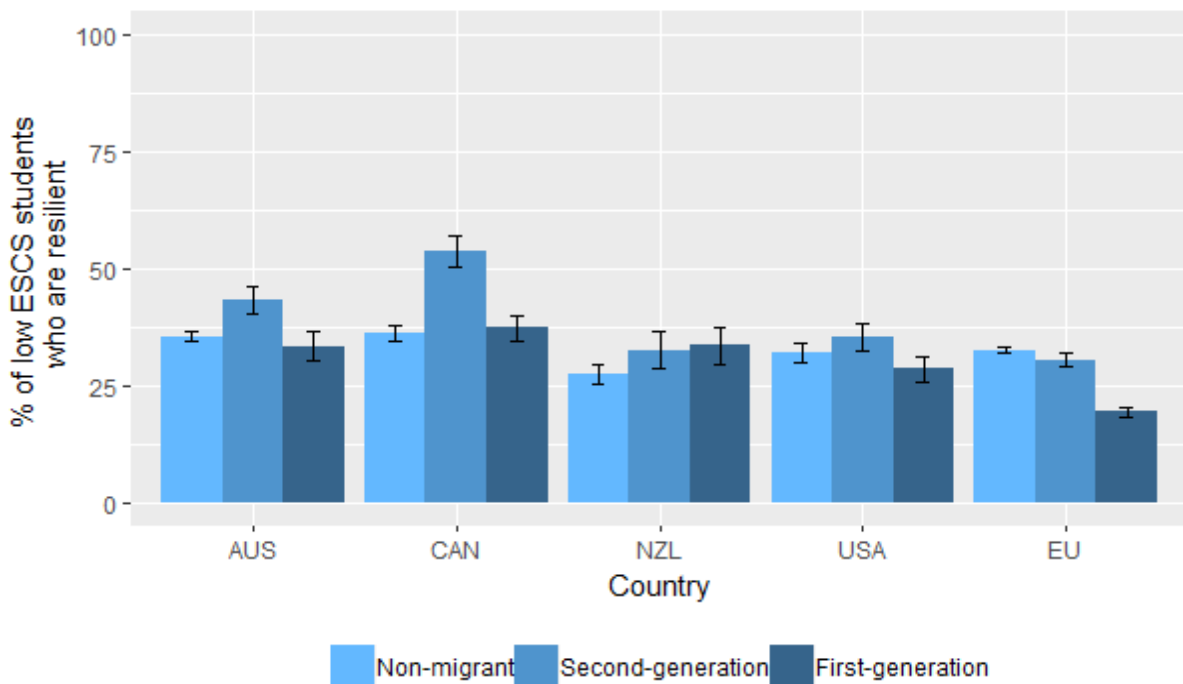
Source: Ecorys analysis of PISA 2015 non-EU countries student dataset. N = 10,496 (lowest ESCS quartile only)

3.4.3 Shares of academically resilient students

Figure 3.8 shows the proportion of students in the lowest quartile of ESCS who can be defined as academically resilient when using the classic approach. Contrary to the general trend in EU Member States, students with a migrant background, particularly second-generation students, were equally - if not more - likely than their non-migrant peers to be identified as resilient.

Compared to the EU averages (30% for second-generation and 19% for first-generation students), all the non-EU countries examined had considerably higher shares of academically resilient students. Canada (54%) had the highest proportion of resilient second-generation students, followed by Australia (43%), the USA (35%) and New Zealand (33%). Regarding resilient first-generation students, Canada (37%) had the highest share followed by New Zealand (33%), Australia (33%) and the USA (29%).

Figure 3.8: Shares of academically resilient students using the classic approach, by non-EU countries (EU included for comparison)



Source: Ecorys analysis of PISA 2015 non-EU countries student dataset. N = 10,496 (lowest ESCS quartile only)

3.5.2 Exploration of characteristics which may explain the differences in shares of resilient students between non-EU countries to EU Member States

In this section, we examine some differences between non-EU countries and EU Member States that may help explain the contrast in shares of academically resilient students with a migrant background. Similar to section 3.3.3, we seek to assess whether there are any patterns in the shares of resilient students based on countries in terms of:

- GDP per capita;
- Size (overall population);
- Composition of migrant populations within a country (i.e. migrant stocks) and a number of associated characteristics;
- Migrant integration policies across a range of areas, including education.

GDP per capita

In terms of GDP per capita,¹⁴ all non-EU countries analysed were similar to wealthier EU Member States such as the UK and the Netherlands. Of the non-EU countries, the USA was wealthiest but exhibited lower shares of resilient students with a migrant background compared to other non-EU countries. Compared to EU Member States, country wealth does not alone explain the higher shares of academically resilient students with a migrant background in non-EU countries.

Size

The overall populations¹⁵ in Canada (36 million) and Australia (24 million) are comparable to mid-sized EU Member States. New Zealand has a smaller population (5 million) and the USA, with a population of over 325 million, was the largest country assessed. This indicates that country size does not help explain the difference in shares between EU Member States and non-EU countries of academically resilient students with a migrant background.

Composition and characteristics of migrant populations

All of the non-EU countries examined in the study have long histories of migration, with migrant populations consisting of large groups from particular countries. The most common country of birth for migrants within each non-EU country are:¹⁶

- Australia: UK, New Zealand and China
- Canada: India, China and the UK
- New Zealand: UK, China and India
- USA: Mexico, India and China

The selective migration policies in non-EU countries may influence the characteristics of migrants entering the country. For example, the policies in place in the USA and Canada have led to inflows of highly-skilled/educated migrants from China and India (Li & Lo, 2009).

In Australia and New Zealand, it is clear that there are geographical, cultural and educational symmetries in terms – for example - of the New Zealanders migrating to Australia and large proportions of migrants of UK origin. Furthermore, these countries have, relative to the free movement of people within in the EU, restrictive immigration policies.

Where there are not immediately apparent similarities with countries of origin (e.g. in the case of China), there are aspirational alignments that may explain the relatively higher academic resilience in non-EU nations. For example, Chinese families migrating to Australia, New Zealand, Canada, and the USA do so (in part) to access the educational opportunities provided by these nations. These families are, then, highly educationally engaged and positively oriented to schooling and schools and this may positively impact their children's academic success (Da & Welch, 2016).

Migrant integration policies

Analysis of MIPEX data reveals all of the non-EU countries examined for this study scored higher with regard to overall integration policies and education focused policies than EU Member States. New Zealand had the highest overall score (70) followed by Canada

¹⁴ Source: International Monetary Fund 2018, available here:
<https://www.imf.org/external/pubs/ft/weo/2018/01/weodata/index.aspx>

¹⁵ Source: International Monetary Fund 2018, available here:
<https://www.imf.org/external/pubs/ft/weo/2018/01/weodata/index.aspx>

¹⁶ Source: OECD, available here:
<https://data.oecd.org/migration/stocks-of-foreign-born-population-in-oecd-countries.htm>

(68), Australia (66) and the USA (63). Regarding education focused policies, Australia (76) scored the highest followed by New Zealand (66), Canada (65) and the USA (60).

Specific elements of education policy where these countries scored highly, relative to EU Member States, included targeting the needs of migrant students and, with the exception of the USA, intercultural education. Australia and Canada scored particularly highly on policies that aim to create new education opportunities for migrants.

Canada scored higher than other non-EU countries and EU Member States in respect of labour market mobility.

Relative to the EU Member State average, the non-EU countries were similar in other policy areas. Australia and the USA were slightly below the EU average in policies supporting seeking permanent residence.

With regard to employment-based (i.e. economic) immigration, the selected non-EU countries all employ point-based systems. This is an important distinction to the free movement of people policy in the EU.¹⁷ It was outside of the remit of this study to explore the potential impact of these more selective policies on the educational ability and motivation of young people with a migrant background. However, we advise this is considered when making comparisons to EU Member States and a potential area for further research.

Overview of the factors which may explain differences in the shares of academically resilient students in non-EU countries

Our assessment of country-level factors that may explain the, relative to most EU Member States, higher shares of academically resilient students in non-EU countries indicates the composition and characteristics of the migrant populations within a country and more effective integration policies, may play an important role. This supports the analysis of the variation in the shares of resilient students between EU Member States detailed in section 3.3.3.

The non-EU countries with particularly high shares of resilient students (Canada, Australia and New Zealand) had levels of GDP per capita and populations comparable to that of some EU Member States. However, these countries have considerably higher shares of resilient students, which indicates that the GDP and size of the population do not alone explain the differences between non-EU countries and EU Member States.

It is important to note that the way in which GDP is utilised may impact academic outcomes. GDP may be channelled at country level into different education or integration policies which may impact on migrants. At family and school level, GDP may also be utilised in different ways which may impact academic achievement, even with families with low ESCS. Qualitative research would be required to further explore this aspect.

The assessment of migrant populations within non-EU countries supports the patterns observed in EU Member States.

All of the non-EU countries examined had strong migrant integration policies.

¹⁷ Free movement of people applies only to EU Member States. We recognise individual Member States may have more selective policies for non-EU migration.

In summary, based on the research that we were able to carry out within the scope of this study, potential reasons that non-EU countries exhibit higher-shares of academically resilient students, relative to the EU, include:

- A long history of migration from particular countries;
- Close geographical, cultural, and/or educational symmetry between the Member State and country of origin;
- Intakes of highly-skilled/educated migrants; a selective immigration policy;
- Effective integration policies, particularly around education.

3.5 Characteristics of academically resilient students

This section examines how resilient students, identified using our four different approaches, present on a range of characteristics. It is important to note that the descriptive statistics provided here are only intended to highlight differences between groups of resilient students. The differences should not be interpreted as denoting factors that are associated with academic resilience; these are explored with appropriate statistical techniques in chapter 4.

Table 3.2 considers the characteristics of non-migrant background, second-generation and first-generation students identified as resilient using the different approaches. Statistics are provided for the entire population ('all students') as a baseline against which approaches can be compared.

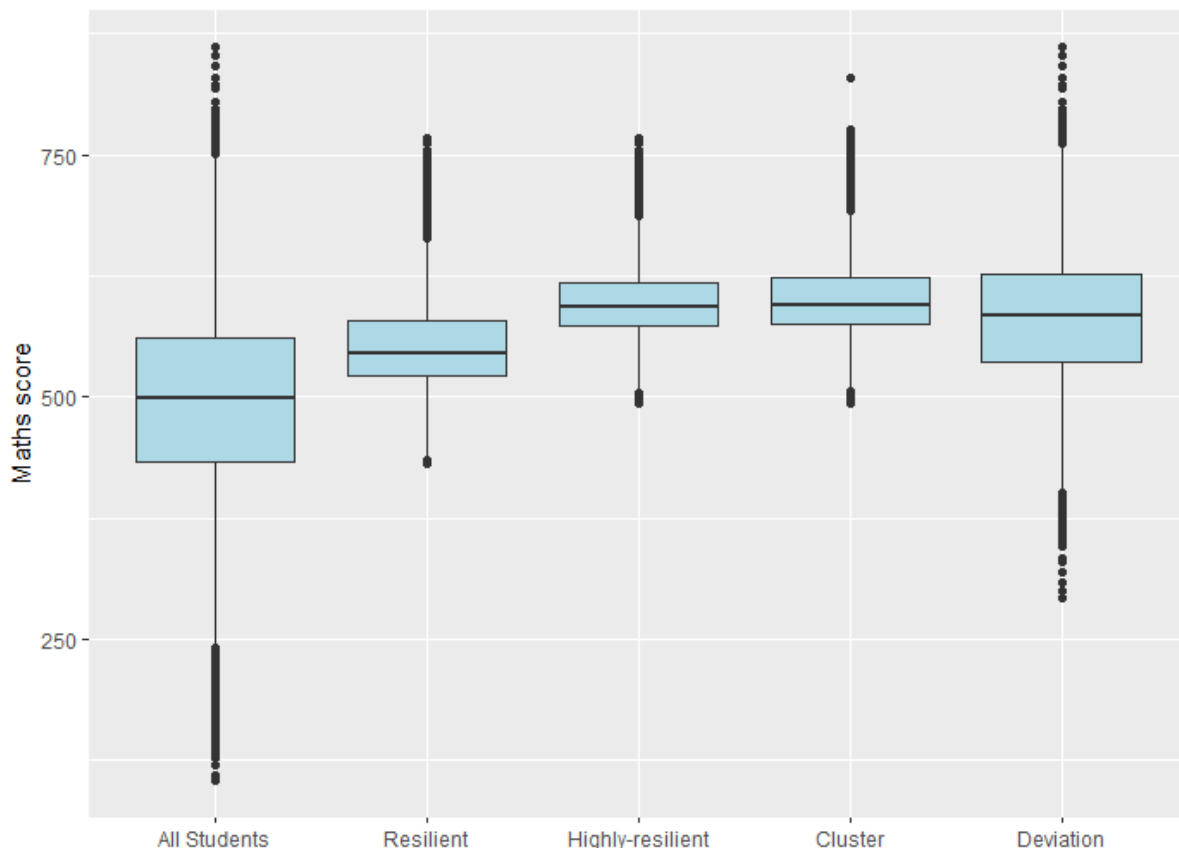
Table 3.2: Characteristics of students identified as resilient using different approaches, by migrant background status

	All students	Resilient	Highly-resilient	Cluster	Deviation
Non-migrant background					
Maths achievement	500.37	553.64*	598.51*	602.41*	585.04*
ESCS (PISA mean = 0)	0.00	-1.13*	-1.09*	-0.30*	0.00
Age in years	15.81	15.82*	15.81	15.83*	15.81
Gender (% female)	49.9%	45.6%*	41.5%*	41.6%*	48.5%*
% Minority language speakers	6.8%	7.0%	5.2%*	5.3%*	7.1%
Academic expectations (1-5)	3.05	2.99	3.40*	3.32*	3.07
Motivation (PISA mean = 0)	-0.16	-0.19*	-0.08*	-0.05*	-0.12*
Second-generation					
Maths achievement	470.65	553.46*	598.92*	600.95*	555.03*
ESCS (PISA mean = 0)	-0.37	-1.15*	-1.10*	-0.52*	-0.38
Age in years	15.80	15.83*	15.85	15.82	15.79
Gender (% female)	51.4%	49.3%	44.2%	40.7%*	50.6%
% Minority language speakers	41.1%	43.2%	46.8%	41.5%	43.6%
Academic expectations (1-5)	2.81	3.29*	3.71*	3.62*	2.88
Motivation (PISA mean = 0)	0.08	0.16	0.30*	0.22*	0.08
First-generation					
Maths achievement	450.73	546.20*	596.55*	599.02*	547.97*
ESCS (PISA mean = 0)	-0.47	-1.29*	-1.27*	-0.53	-0.43
Age in years	15.82	15.80	15.83*	15.81	15.81
Gender (% female)	51.4%	48.6%	41.5%	36.8%*	48.4%
% Minority language speakers	60.8%	62.8%	59.8%	60.7%	61.5%
Academic expectations (1-5)	3.02	3.49*	4.05*	3.95*	3.09
Motivation (PISA mean = 0)	0.12	0.03	0.30	0.28*	0.08

* Significantly different (independent t-test $p < 0.05$) from students not identified as resilient for each approach

By definition, all approaches identify students that achieve significantly higher in mathematics than the PISA average ('all students') for the Member States included in the analyses. Scores across non-migrant and migrant background student groups were highest for the resilient students identified using the clustering (Mean = c.600) and highly-resilient (Mean = c.598) approaches. This is unsurprising as both of these approaches focus on students in the top quartile of achievement, within their country. Figure 3.8 depicts the variation in mathematics achievement across the different approaches for non-migrant and migrant background students combined.

Figure 3.8: Box and whisker diagram of resilient students' mathematics scores, by approach



Note: Figure shows the median (centre line in the box), the second and third quartiles (bottom and top of the box) and range (the whiskers). Outliers are denoted by dots.

Lower levels of ESCS, relative to the PISA average (mean), were evident for students identified as resilient using the classic resilient, highly-resilient and clustering approaches. Resilient students using the deviation approach have very similar levels of ESCS to the PISA average (all students). This is at least partly explained by the approach capturing resilience in multiple forms – i.e. some are identified as resilient due to low ESCS but overall this is counter-balanced by other students, with average (or indeed, above average) ESCS, being identified as resilient due to other factors (e.g. academic expectations) used to predict their achievement.

Males were more likely to be identified as resilient across all approaches. This was most prominent for the clustering approach (58-63% male) and less so for the deviation approach. It is important to note that, regardless of resilience status (i.e. "all students"), males, on average, perform higher on the PISA mathematics assessment (Mean = 502) compared to females (Mean = 488), which is likely to explain this result.

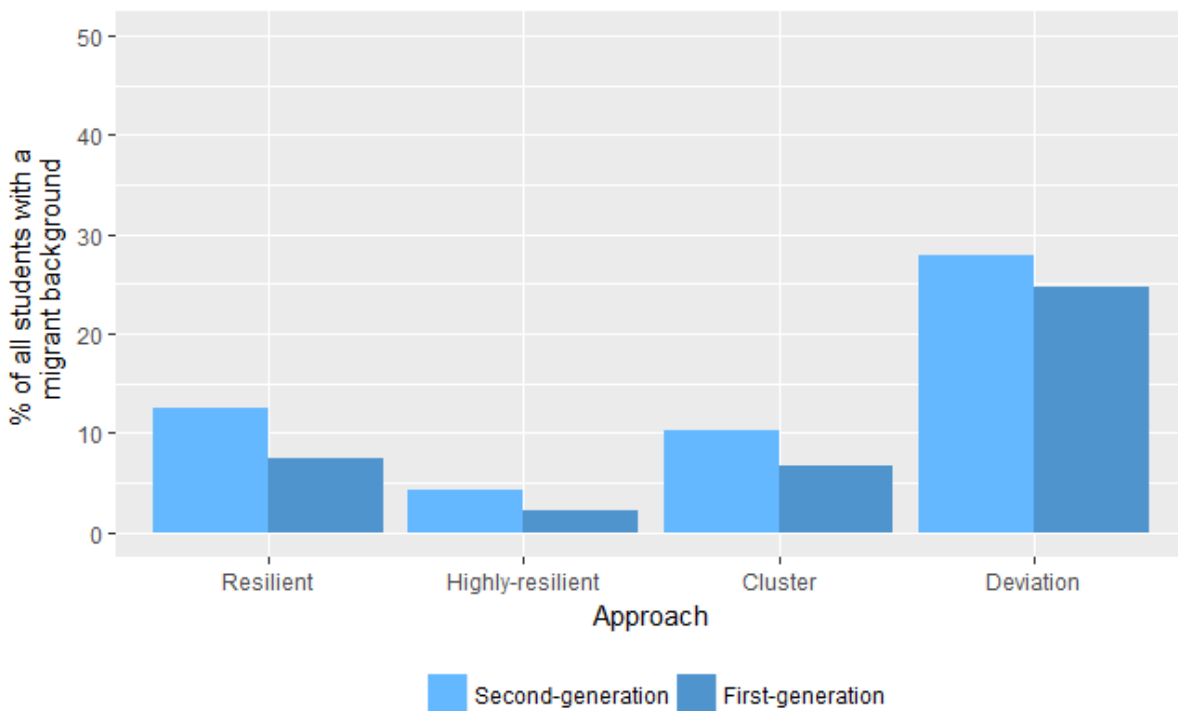
Resilient students with a migrant background identified using the highly-resilient and clustering approaches had significantly higher academic expectations than the PISA average. The lack of statistical significance / similar means for the classic resilient and deviation approaches could be explained by the greater variability of students within these groups – i.e. they are not confined to the top-quartile of achievement where one might anticipate higher academic expectations. There was a similar picture for motivation for students identified as resilient using the highly resilient and clustering approaches.

Differences in the proportion of students who speak a minority language at home and differences in age were limited across students with a migrant background.

3.6 Academically resilient cohorts identified for analysis

This section provides an overview of the analytical cohorts of resilient students and associated sample sizes. We focus on second-generation and first-generation migrant students only as these are our cohorts of interest for the advanced analyses detailed in chapter 4. Figure shows the shares of resilient students identified in PISA.

Figure 3.9: Shares of resilient students, by approach



Source: Ecorys analysis of PISA 2015 Restricted EU-18 student dataset. N = 155,170

It is important to note that the approaches are not mutually exclusive – a student can be identified as resilient using multiple approaches. Regarding the highly-resilient approach, all students identified can be considered a subset of the (classic) resilient approach. The (classic) resilient approach includes all highly-resilient students (i.e. those in the top quartile of academic achievement) and those in the second-highest quartile of academic achievement – combined, these students are “above average”. Furthermore, it is clear that the highly-resilient group of students are identified almost universally across the different approaches.

Key points regarding the crossover between the approaches are:

- A third of classic resilient students are also resilient using the cluster approach;
- All highly-resilient students are resilient using the cluster approach;
- Almost three-quarters of classic resilient students are also identified using the deviation approach;
- Almost all highly-resilient students are also resilient using the deviation approach;
- Approximately nine in ten cluster-derived resilient students are also identified as resilient using the deviation approach.

The crossover between approaches highlights that the classic, ecologically-driven, forms of resilience consist of students that can be considered resilient using multiple definitions - not just those focused on low ESCS.

4. Factors associated with academic resilience

In this chapter, we explore the key factors associated with the academic resilience of students with a migrant background. Factors were examined using a range of statistical techniques. We focus our discussion on factors that are common across the multiple approaches used to identify academically resilient students with any migrant background (i.e. second-generation and first-generation) – this triangulation enhances the robustness of our findings. However, where useful, we highlight interesting differences between the approaches, second-generation and first-generation students.

Summary of statistical techniques employed

- Models predicting **student-level resilience**: To understand the student and school factors associated with students' resilience status, logistic regression models were employed;
- Models predicting **school-level resilience**: To identify factors associated with schools comprising larger numbers/proportions of resilient students (i.e. "resilient schools"), multilevel-models were employed;
- Models predicting the **achievement of resilient students**: To understand the factors associated with the academic achievement of resilient students, linear regression models were employed;
- Latent profile analyses: To explore the profiles of different levels of resilience. This "**person-centred**" approach allows us to tease out distinct sub-groups of academically resilient students that are alike on particular variables.

The latter three analyses focus on the ecologically-driven (i.e. the classic resilient and highly-resilient) approaches only due to their reliability – they have been tried and tested in previous studies.

It is important to note that due to the nature of the data, we cannot assume causality of resilience status in any analyses, only that there is a statistically significant association.

In the following sections, we set out and discuss the key findings from all the analyses conducted:

- Factors associated with students' academic resilience status;
- Factors associated with resilient schools;
- Factors associated with academically resilient migrant background students' educational success (achievement);
- Profiles of academically resilient students;
- Comparison of factors associated with resilience in EU Member States to non-EU countries.

Details of independent variables tested and all statistical model outputs, including analysis by Member State groupings, are provided in the technical report.

4.1 Factors associated with students' academic resilience status

Across all approaches, we tested a theoretical model to understand and assess the relationship between resilience status and individual, family and school characteristics. Following a review of the literature (see chapter 2) and an assessment of the PISA data, a number of factors (i.e. variables) were identified that we subsequently tested for statistically significant associations with students' resilience status.

Table 4.1 provides a summary of the results from the logistic regression models undertaken, which are central to this study. Analysis was conducted on all migrant background students (AM) and then individually for second-generation students (SG) and first-generation students (FG). The outcome variable was resilience status (binary N/Y).

Focusing on the all migrant background student group (AM) for the classic resilience status analyses, the table can for example be interpreted as follows with regard to student characteristics:

- Being male and having high academic expectations had a positive (denoted by +) association with classic resilience status;
- Whereas, repeating a grade and skipping school had a negative (denoted by -) association with resilience status – in other words, students who did not repeat a grade and do not skip school are more likely to be academically resilient.

Table 4.1: Summary of factors associated with academic resilience across classic, clustering and deviation approaches

Student factors	Resilient			Highly-resilient			Cluster			Deviation		
	AM	SG	FG	AM	SG	FG	AM	SG	FG	AM	SG	FG
Being older in one's cohort				+								
Being male	++			++		+++	+++	+++	+++			-
Minority language speaker											+	
Repeated a grade	---	---	--	---	---	---	---	---	---			
Higher academic expectations	++	++	++	++	++	+++	++	++	++			
Higher motivation			-							-		
Higher levels of peers/friends				-	--							
Skipped or been late for school	--	--	--	--			--	--	--			
Higher student ESCS							---	---	---			

School factors	Resilient			Highly-resilient			Cluster			Deviation		
	AM	SG	FG	AM	SG	FG	AM	SG	FG	AM	SG	FG
Larger school	+											+
Larger class size						++			++	+	+	+
Privately operated school											++	
School location (urban)												
Proportion of funding from government			+									
Greater access to computers												
More computers connected to the internet												
Extracurricular activities provided												
Greater involvement (leadership) from Principal in school affairs												
Greater school autonomy		-		--								
Uses internal/self-evaluation			++									
Uses student testing to monitor teachers	+	++										
Undertaking school improvement practices	--	-	--	--		---						-
Uses internal/self-evaluation												
Proportion of staff taking part in professional development												
Higher levels of teacher participation in decision making												
Study room provided				++			+++	+++	++			
Staff help with homework						+++						
Higher average ESCS of students							+++	+++	+++			

Key					
+	Small positive association	-	Small negative association	AM	All migrant background
++	Medium positive association	--	Medium negative association	SG	Second-generation
+++	Large positive association	---	Large negative association	FG	First-generation
	Association but explained by gender effect		Student ESCS not included in classic resilient models ¹⁸		

¹⁸ Student ESCS is controlled for by definition with the classic resilient approaches. i.e. only those students in the lowest quartile of ESCS can be resilient.

The “being male” factor is purposefully coloured differently for reasons explained in section 4.1.1.

To provide a sense of the effect size, all factors with a coefficient of less than 0.2 are denoted by “+” or (for negative associations) “-”, 0.2 to 0.5 are denoted with “++” or “--” and those with coefficients greater than 0.5 “+++” or “---”. Detailed statistical outputs, including actual coefficient values, are provided in the technical report.

4.1.1 Discussion of student factors

In this section we discuss the key significant student factors associated with academic resilience status across the different approaches (see table 4.1). We focus on and discuss in turn the following:

- The strong positive association of higher academic expectations (and the crossover with levels of motivation) with academic resilience;
- Consideration of the gender effect in the context of academic resilience;
- The influence of educational disengagement, specifically, repeating a grade and skipping and/or being late for school on academic resilience status;
- The relationship of peers/friends with academic resilience.

The analysis revealed a strong positive association of **academic expectations** and resilience status across analyses. Although expectations are in part formed by past achievement, the role of parents and teachers in supporting higher expectations is well-recognised (Wigfield & Eccles, 2000) and a potential area for intervention to increase the resilience of students with a migrant background.

There was not a consistent association with higher levels of **motivation** and resilience status. However, given that many scholars would conceptualise self-expectations as a part of motivation (e.g., Wigfield & Eccles, 2000), we can interpret this finding as nonetheless supporting the well-established link between motivation and achievement (Pintrich, 2003).

Being male was identified as a significant factor in multiple analyses, as mentioned in the study limitations, this is partly due to the focus on mathematics. This was particularly evident in the highly-resilient and cluster approaches that focus on students in the top-quartile of academic achievement. However, in subsidiary analyses we conducted a brief descriptive analysis of literacy achievement, finding that being female was associated with higher achievement, and confirming the well-established gender effect in favour of girls. Thus, we can conclude more broadly that gender stereotypical achievement patterns seem to manifest among migrant background and non-migrant background students alike, and that **‘being male’ is not a factor which can be said to be linked to greater resilience.**

Not repeating a grade had a strong association with resilience status. This can be considered indicative of the fact that those less engaged in education, and thus end up repeating a grade, are an ‘at risk’ group which struggles academically. This aligns with research demonstrating that grade repetition tends to be associated with subsequent academic difficulties (Martin, 2009). Grade repetition is considered a ‘structural’ response, not an educational response. Pausing students’ academic progression does not necessarily address the underlying educational issues that led to grade repetition—and so grade repetition is unlikely to lead to subsequent academic success (Martin, 2009).

The negative association of **skipping and/or being late for school** with resilience status adds further evidence of the negative impact of disengagement from education. To

the extent students are late for or absent from school, they miss important academic subject matter and fall progressively behind their peers, leading to lower achievement.

The negative association between more **peers/friends** and highly-resilient status was somewhat unexpected, but not inconceivable. **Low socio-economic background** is associated with lower achievement (Sirin, 2005) and greater affiliation with low-achieving peers may be linked to one's own low levels of achievement—potentially explaining the link between more peers/friends and low achievement. Alternatively, to the extent that a low ESCS student wants to achieve, they may choose to disidentify with peers—potentially also explaining the link between fewer peers/friends and higher achievement. In addition, for some students achievement and socialising may be seen as a zero-sum game (especially some low ESCS migrants who see education as their main ladder of opportunity), with this group of students being more focused on achieving the top grades and, choosing to spend less time socialising. In any case, we did not have data to unpack these possibilities and thus recommend further research in this space.

4.1.2 Discussion of school factors

In this section we discuss the key significant school factors associated with academic resilience status across the different approaches (see table 4.1). We focus on and discuss in turn the following:

- The positive association of schools reflecting and responding to the needs of their students, specifically, undertaking internal evaluation and the use of student testing to monitor teachers, with academic resilience;
- The provision of study rooms and their positive association with academic resilience;
- The influence of school intake characteristics, specifically ESCS, and school and class size;
- The relationship between school improvement practices and academic resilience.

There was a positive association between schools **undertaking internal evaluation** and their (first-generation) students' academic resilience using the classic approach. This suggests that schools which reflect on the outcomes and needs of their students are better able to develop support for specific groups of students. Likewise, the use of **student testing to monitor teachers** provides 'reflect and learn' opportunities for school leaders. It also provides an opportunity to collect more up-to-date data on any learning gaps that need to be addressed and the changing needs of students in order to effectively differentiate instruction. In terms of student testing to monitor teachers, we are again faced with the issue of cross-sectional data. It may be that teacher monitoring via student testing leads to higher levels of achievement. Alternatively, it may be that in high achieving schools, school executives seek to implement student testing as a means to monitor teachers and maintain high academic standards. More research would be needed here as well.

The **provision of study rooms** (for students to complete homework etc.) had a positive association with resilience using the highly-resilient and cluster approaches. This suggests that providing socio-economically disadvantaged students, who are less likely to have many educational resources available at home, with a place to study and access to resources is an effective support mechanism, and is an important policy pointer. It is also possible (though the data was not able to inform this definitively) that students availing themselves of a study room are also more likely to receive instrumental assistance from teachers (e.g., where teachers supervise the study room). Moreover, the use of a study room is also likely to facilitate students' affiliation with academically-oriented peers who may also provide instrumental support for learning and foster positive academic values that benefit academic achievement.

Analysis using the cluster approach to resilience revealed a positive association with **attending a school comprising with, on average, students with higher ESCS**. Higher school average ESCS may signal higher educational intake characteristics for the student body which (a) facilitates affiliation with peers who are academically stronger, (b) allows schools to focus more on at-risk migrant background students given fewer other students may be in academic need, and (c) may also reflect a more advantaged local geographical area that is better resourced (e.g., libraries, transport, etc.) and experiences lower levels of community stress, both of which impact academic outcomes (e.g., Leventhal & Brooks-Gunn, 2000).

Larger class sizes had a positive association with resilience when defined using the highly- resilient, cluster deviation approaches. Regarding the former two, this related to first-generation students only. Whilst the literature suggests smaller class sizes, typically, have a positive impact on student achievement (but the effect sizes are generally small; Hattie, 2009), it could be the case that for classes comprising larger numbers of first-generation migrants schools may be able to justify (financially) more in-class support for these students – i.e. there are economies of scale in the support provided. Furthermore, analysis conducted by the OECD (2016) found that, on average, students in larger class sizes score higher in science (the domain focus in PISA 2015), thus supporting our finding.

Similarly, although limited to only a few analyses, **larger school sizes** had a positive association with resilience status. Again, it is not uncommon in most educational jurisdictions for funding to be tied to school size. Larger schools may thus be relatively better resourced to assist students in need, such as low ESCS migrant background students. Also, larger schools have the capacity to offer more curriculum subjects, because their student numbers make the offering of more subjects viable. A wider curriculum offering may enable a better match of subject to student, which may be especially important for students who may be at academic risk, such as low ESCS migrant background students. It may also be the case that larger schools are collected in larger urban areas where the level of support and the nature of available resources for migrant background groups generally may be higher, in turn being associated with higher achievement among migrant background students in these larger schools. Again, our data could not disentangle this, but we point to it as a finding for further research.

Undertaking **school improvement practices** had a negative association with resilience status across most analyses using the classic resilient and highly-resilient approaches. While this might seem counterintuitive, we provide a possible explanation. The classic approaches focus on students in the lowest quartile of ESCS. Supplementary analyses revealed that students, of all backgrounds, with low ESCS tend to be concentrated in the same schools. It could be the case that a school is undertaking improvement practices in order to provide support for this wider cohort of disadvantaged students, not the resilient students with a migrant background in particular. Although limited to fewer analyses, it was a similar case for school autonomy. This is a good example of the limits of cross-sectional data; it is quite possible that school improvement practices follow from - rather than precede - low achievement among low ESCS migrant background students.

School location (i.e. rural-urban) was not found to be a significant factor associated with resilience status. This could be explained by school/class size and school-level ESCS being included in the analysis which were significant. Given such factors are somewhat determined by the schools location (e.g., larger schools in urban areas) we advise the statistical insignificance of location in our analysis is interpreted with some caution – the

impact of location on other variables included in the analysis needs to be considered within the Member State / local context.¹⁹

4.2 Factors associated with resilient schools

In order to maximise the information that can be gained about academic resilience in this study, additional analysis was conducted to explore the factors that are associated with “**resilient schools**” – defined as schools that comprise larger proportions of resilient students with a migrant background.

There is a major line of educational research that investigates ‘effective schools’. Whilst our primary analyses (see section 4.1) focus on student outcomes (i.e. students’ resilience status), the approach informed by ‘school effectiveness’ research suggests also exploring factors associated with effective and successful schools. We seek to contribute to this line of research from a resilience perspective by investigating factors associated with schools comprising larger numbers/proportions of resilient students. This requires us to model **school-level or school-average resilience** and examine student and school factors associated with it, which we did in the multilevel models.

4.2.1 Classic approach (Resilient)

Analysis was conducted for all migrant background, second-generation and first-generation students. However, we emphasise significant predictors for all migrant background students here, due to the larger samples within schools. We set out below the key findings in relation to first student predictors and then school factors that appear to contribute to school resilience.

For **student predictors** of school-average resilience, the same factors found in the student-level analyses in section 4.1 above were identified, with the additional finding that being older in one’s cohort was associated positively with school-average resilience. These student factors thus were:

- Being older within one’s cohort;
- Being male (see discussion of gender effect in section 4.1.1);
- Not repeating a grade;
- Higher academic expectations;
- Lower academic motivation (though, self-expectations are often conceptualised as a motivation factor);
- Fewer instances of skipping or being late to school.

Recent research using PISA data has shown that students who are older (in the PISA test cohort) have higher academic self-concept²⁰ than younger students – and that this is associated with higher achievement (Marsh et al., 2018). The researchers explain this in terms of a social comparison effect such that, when compared with the academic skill level of relatively younger students, older students’ self-concept increases. Whereas Marsh and colleagues’ (2018) study focused on all PISA students, our findings suggest this also applies to low ESCS migrant background students in terms of school-average resilience status.

Regarding the finding of lower academic motivation, intuitively, this is unexpected. However, it is important to note that this is after controlling for other factors, such as academic expectations, and accounted for a relatively small effect size. Also, as noted earlier, many scholars would conceptualise self-expectations as a motivation factor and thus we advise against dismissing motivation as a factor in school-average resilience.

¹⁹ It was not possible to include interaction effects in the analysis due to small sample sizes

²⁰ Defined as the beliefs an individual holds about himself or herself and the responses of others

Furthermore, as we describe below, motivation did emerge as a significant (positive) factor in our profile analyses of academically resilient migrant background students.

School factors associated with school-level resilience status were:

- Larger school size;
- Public school status;
- Greater proportion of computers connected to the internet;
- Greater school autonomy;
- Use of internal/self-evaluation;
- Fewer school improvement practices in place;
- Use of student achievement data to monitor teachers;
- Less teacher participation in decision-making.

The school factors identified with this analysis support those identified in the student-level resilience analyses (see section 4.1) such as school size, school improvement practices, use of internal evaluation and student testing to monitor teachers.

The analysis also revealed new information about resilience. Schools with greater levels of autonomy as well as public schools were associated with having greater proportions of resilient students with a migrant background. In the case of school autonomy, it may be the case that this allows schools to be more responsive to the needs of the unique characteristics of their student body. Alternatively, it may again reflect the limits of cross-sectional data, such that schools with highly achieving migrant background students are provided with (or allowed to have) relatively greater autonomy by central education authorities. This may also be the case for our finding that less teacher participation in decision-making was associated with higher school-average resilience. It could be the case that lower levels of achievement among low ESCS migrant background students requires more teacher input and local decision making in order to meet their educational needs. Further research is needed here to better understand these effects.

In the case of public school status, it is typically the case that the public sector is the largest sector in a Member State and potentially the sector in the best position to offer or access support networks and resources for larger numbers of low ESCS migrant background students. Smaller (e.g., independent/private) sectors may not have a large network on which to draw and thus may have relatively more difficulty in meeting the educational needs of large numbers of low ESCS migrant background students. Alternatively, it may be that the bulk of migrant background students are more likely to attend public schools and thus the likelihood of finding academically resilient migrant background students is increased.

4.2.2 Classic approach (Highly-resilient)

Analysis was conducted for all migrant background, second-generation and first-generation students. Again, we emphasise significant predictors for all migrant background students here, due to the larger samples within schools. We set out below the key findings in relation to first student predictors and then school factors that appear to contribute to school resilience using the highly-resilient definition.

For **student predictors** of school-average resilience, the same factors found in the student-level analyses in section 4.1 (above) were identified. These student factors thus were:

- Being older in one's cohort;
- Being male (see discussion of gender effect in section 4.1.1);
- Not repeating a grade;
- Having higher academic expectations;

- Fewer peers/friends;
- Fewer instances of skipping or being late for school.

School factors associated with school-level highly-resilient status included:

- Larger school size;
- Being a privately operated school;
- Fewer school improvement practices in place;
- Use of student testing to monitor teachers;
- Less teacher participation in decision making.

The school-level highly-resilient analysis identified significant factors, additional to the ones identified with the student-level resilience analysis (see section 4.1), thus adding to our understanding of academic resilience. Most of these were discussed and explained in 4.1 and 4.2.1 above. A novel finding in these analyses was that higher school-average resilience was associated with being a privately operated school. This finding is in contrast to the earlier finding that public school status is associated with resilient students (top two quartiles of achievement). We do not have data to explain this. It may be that whereas the public sector can accommodate large numbers of resilient students (top two quartiles of achievement), when it comes to more extreme levels of achievement, private schools provide more niche and targeted support. Further research is needed here.

4.3 Factors associated with academically resilient migrant background students' educational success (Achievement)

In this section we examine the factors associated with the academic performance of academically resilient students with a migrant background. By focusing on just those identified as academically resilient, we seek to understand the within group variation of PISA mathematics scores, with a view to identify the factors that are associated with a student being more or less resilient. Multilevel model with student factors predicting student achievement and school factors predicting school-average achievement were employed.

4.3.1 Analysis of (classic) resilient students

Focusing on students identified as academically resilient using the classic approach, the key factors associated with academic performance included:

Student characteristics were:

- Not repeating a grade at school.

School characteristics were:

- Provision of extra-curricular activity;
- Greater school autonomy;
- Provision of rooms for students to study and do homework;
- Less focus on school improvement.

These findings are in close alignment with those in the preceding sections that have sought to identify factors associated with resilience status (of all migrant background students) and also the person-centred approaches described below that sought to identify groups of resilient students with a migrant background. Thus, we refer the reader to each of these sections for explanation and interpretation of these findings. However, one finding that is distinct from the body of other findings is the positive effect of extra-curricular activity for the school-level achievement of academically resilient migrants. School-based extra-curricular activity has been identified as being a particularly powerful and positive form of extra-curricular activity for enhancing

achievement (i.e., more so than home- or community-based extra-curricular activity; Marsh & Kleitman, 2005). Being school-based, this form of extra-curricular activity tends to increase students' identification with the school, promote positive school-based values, brings students into closer proximity with teachers who can help them academically, and promote positive peer affiliation—all of which are important factors in academic achievement (Marsh & Kleitman, 2005)—and apparently especially effective for low ESCS migrant students.

Recognising that the measure used for extracurricular activity in this study was the count of different types of activity (e.g., orchestra/choir, chess club, sport team/activities), the finding should be interpreted as attending a school where there are a greater range of extracurricular activities offered has a positive association with the academic achievement of students with a migrant background identified as resilient. Further research into the specific types of activities that promote academic resilience is needed.

4.3.2 Analysis of highly-resilient students

Focusing on students identified as academically highly-resilient, the key factors associated with academic performance included:

Student characteristics were:

- Being older in one's cohort;
- Fewer instances of skipping or being late for school.

School characteristics were:

- Provision of extra-curricular activity;
- Greater school autonomy;
- Provision of rooms for students to study and do homework;
- Less focus on school improvement.

Each of these findings has been explained elsewhere in this report (see above and below discussions associated with the factors identified here).

4.4 Profiles of academically resilient students

4.4.1 The importance of understanding profiles

The analyses outlined in the preceding sections considered academically resilient and highly-resilient students, using the classic approach. This dealt with low ESCS migrant background students as one homogenous group and explored factors that predicted their resilience status. These analyses can be considered "variable-centred" approaches where the focus was on the specific factors that were associated with the resilience status of students and schools. Variable-centred analyses are helpful for practice and policy intervention because they identify influential factors (e.g. school attendance, study rooms, etc.) to target in intervention efforts.

There can however be different ways of being academically resilient. Thus, rather than considering academically resilient students with a migrant background as one group, it is potentially informative to explore whether there are different profiles of academic resilience within this group of students who are in the lowest quartile of ESCS and upper achievement quartiles. "Person-centred" analyses are a way to tease out distinct subgroups of academically resilient students. Person-centred analyses are helpful for practice and policy intervention because they identify particular students (or student groups) to target in intervention efforts. The following analyses used person-centred analytical methods to explore the extent to which there might be different profiles of

academically resilient and highly-resilient students. The method selected to carry out the analyses was latent profile analysis (LPA).²¹

4.4.2 Profiles of resilient migrant background students

Table 4.2 shows the student profiles for resilient students (upper two quartiles of achievement) using the classic approach with a migrant background. For this group, three student profiles were identified.

Table 4.2: Resilient migrant-background student profiles

Robust resilient (55% of resilient students)	Precarious resilient (31% of resilient students)	Vulnerable resilient (14% of resilient students)
<ul style="list-style-type: none"> ▪ Average age ▪ More likely to be female ▪ May or may not be a minority language student ▪ Very unlikely to have repeated a grade ▪ High educational expectations • Above average motivation • Average levels of peers/friends ▪ Average levels of skipping or being late to school 	<ul style="list-style-type: none"> ▪ Average age ▪ Male or female ▪ May or may not be a minority language student ▪ Very unlikely to have repeated a grade ▪ Low educational expectations ▪ Below average motivation ▪ Average levels of peers/friends ▪ Average levels of skipping or being late to school 	<ul style="list-style-type: none"> ▪ Average age ▪ More likely to be male ▪ May or may not be a minority language student ▪ More likely to have repeated a grade ▪ Very low educational expectations ▪ Below average motivation ▪ Average levels of peers/friends ▪ Average levels of skipping or being late to school

Note. Bolded text indicates significant differences between the profiles on that variable. N=1,935

Significant characteristics for each of the three profiles were as follows:

- Students in the robust resilient profile tended to be female, very unlikely to have repeated a grade, had high educational expectations and above average motivation.
- Students in the precarious resilient profile were just as likely to be male as female, very unlikely to have repeated a grade, had low educational expectations and below average motivation.
- Students in the vulnerable resilient profile tender to be male, were more likely to have repeated a grade, had very low educational expectations and below average motivation.

There were no significant differences on the remaining student-level variables.

In summary, the vulnerable resilient profile evinced the least positive findings; however, the precarious resilient profile also evinced levels of expectations and motivation that were lower than the robust resilient profile.

²¹ LPA is a probabilistic model in which students are assigned into mutually exclusive types, or latent profiles, based on their pattern of selected characteristics.

Results indicated significant differences between the three student-level profiles in mathematics achievement. The robust resilient profile reported the highest achievement ($M = 556.56$, $SE = 2.49$). This was followed by the precarious resilient profile ($M = 550.13$, $SE = 3.28$), and finally the vulnerable resilient profile ($M = 528.01$, $SE = 6.40$). These results provide understanding about the different profiles of resilience that exist among the sample. Although all students had mathematics achievement within the top two quartiles, the more adaptive profiles evinced significantly higher achievement within these quartiles.

4.4.3 Profiles of highly-resilient migrant background students

Table 4.3 shows the profiles for highly-resilient students (highest quartile of achievement) with a migrant background. For this group, two student profiles were identified.

Table 4.3: Highly-Resilient migrant-background student profiles

Robust highly-resilience profile (66% of highly-resilient students)	Precarious highly-resilience profile (34% of highly-resilient)
<ul style="list-style-type: none"> ▪ Older ▪ Male or female ▪ May or may not be a minority language student ▪ Unlikely to have repeated a grade ▪ High educational expectations ▪ Average levels of motivation ▪ Average levels of peers/friends ▪ Average levels of skipping or being late to school 	<ul style="list-style-type: none"> ▪ Younger ▪ More likely to be male ▪ May or may not be a minority language student ▪ Unlikely to have repeated a grade ▪ Low educational expectations ▪ Average levels of motivation ▪ Average levels of peers/friends ▪ Average levels of skipping or being late to school

Note. Bolded text indicates significant differences between the profiles on that variable. $N = 622$

Students in the robust highly-resilient profile present more strongly on the factors associated with resilience, whereas the precarious highly-resilient profile present not as strongly on the factors associated with resilience. Interesting differences between the groups included:

- Students in the robust highly-resilient profile tended to be older in their cohort, were as likely to be female and had high educational expectations.
- Students in the precarious highly-resilient profile tended to be younger in their cohort, were more likely to be male and had lower educational expectations.

Other than these differences, the two profiles evinced similar levels of the remaining student-level variables.

In summary, aside from demographic factors, academic expectations was the main academic factor on which the two student profiles differed.

Results indicated no significant difference between the two student profiles in mathematics achievement. The robust highly-resilient profile ($M = 599.55$, $SE = 3.38$) was just slightly higher than the precarious highly-resilient profile ($M = 595.54$, $SE = 3.25$)

It is important to note that this is likely because there was limited variance in achievement because all highly-resilient migrants were by definition in the highest quartile of achievement. It is also important to note that these analyses cannot speak to longer-term outcomes. The longer-term outcomes of the precarious highly-resilient migrant profile may be impacted, for example, by the less positive levels of academic expectations (which may lead to lower educational attainment).

4.4.4 Summary of profiles developed for resilient and highly-resilient migrant background students

The three profiles of resilient students (highest two quartiles of achievement) developed show that higher academic expectations and being female are associated with the more robust/higher achieving profiles. The later particularly insightful when set against the preceding variable-centered analyses that exhibited a gender effect (where males outperformed females). The person-centered (profile) focused analysis found girls to be the “most” resilient. Additional information about resilience was gained around the effect of motivation, which in some wider analyses (see section 4.1 and 4.2) had none or a negative association with resilience status (albeit with a small effect size). Students with higher levels of motivation were more likely to be considered robust resilient.

Regarding the profiles of highly-resilient students (highest quartile of achievement), the analysis identified two subgroups of students: a robust highly-resilient group and a precarious highly-resilient group. The robust highly-resilient group consisted of typically older students with higher academic expectations compared to the precarious highly-resilient group and, contrary to the whole group analysis (see section 4.1), highlights females to be as likely as males to be robust highly-resilient.

4.5 Comparison of factors associated with resilience in EU Member States to non-EU countries

In order to explore if the factors associated with academic resilience differ between EU Member States and non-EU countries, we repeated the analyses detailed in section 4.1 on a selection of non-EU countries: Australia, Canada, New Zealand and the USA.

4.5.1 Factors associated with resilience status in non-EU countries

To understand which student and school factors are associated with students’ resilience status, derived with the classic approach, logistic regression analysis was undertaken. Analysis was conducted on all migrant background students. The outcome variable was resilient (binary N/Y).

In summary, statistically significant **student factors** included:

- Higher academic expectations;
- Being older in one’s cohort;
- Being male (see discussion of gender effect in section 4.1.1);
- Fewer instances of skipping or being late for school;
- Not repeating a grade;
- Speaking a minority language at home.

Significant **school factors** included:

- Use of student testing to monitor teachers;
- Publically operated school.

Relative to the analysis of EU Member States (see section 4.1), **student factors** associated with resilience status were the same, with the exception of speaking a minority language at home which had a positive association with resilience status. It is possible that this latter finding is linked to the type of non-English speaking students who are most likely to be high achieving migrant background students in these non-EU countries. As we identified earlier (see section 3.5), Chinese students are the largest non-English speaking migrant groups identified as academically resilient in our non- EU analyses. These students have a strong academic orientation with family and cultural values emphasising educational engagement and success (Da & Welch, 2016).

At the **school level**, the use of student testing to monitor teachers and attending a publicly operated school were associated with resilience status. The former aligns with our analysis of EU Member States and was discussed earlier. With regard to the finding for public school status, we suggest interpretation along the lines of that suggested in section 4.2.1 (but note our qualification with regard to private school status in 4.2.2).

4.5.2 Factors associated with highly-resilient status in non-EU countries

Using the same approach detailed above (section 4.5.1), we explored the factors associated with highly-resilient status in non-EU countries.

In summary, statistically significant **student factors** included:

- Higher academic expectations;
- Being older within one's cohort;
- Fewer peers/friends;
- Being male (see discussion of gender effect in section 4.1.1);
- Not repeating a grade;
- Speaking a minority language at home.

Significant **school factors** associated with highly-resilient student status included:

- Smaller class size;
- Use of internal evaluation;
- Less use of student testing to monitor teachers.

Relative to the analysis of EU Member States (see section 4.1), student factors associated with highly-resilient status were the same with two exceptions: for selected non-EU countries, speaking a minority language at home (positive association) was significant and, skipping or being late for school was non-significant. For school factors, the use of internal evaluation had a positive association with highly-resilient status. Contrary to our EU Member State analyses, smaller class sizes and less use of student testing to monitor teachers were significant.

With regard to class size, we noted earlier that smaller classes yield small positive effect sizes for achievement (Hattie, 2009). Also to note is that the bulk of this research has been conducted among English-speaking (non-EU) nations.

For the monitoring of teachers via student testing, as with our non-EU findings, we cannot disentangle causal ordering here. It may be, for example, that in high achieving schools, there is less need for student testing as a means to monitor teachers. Again, more research is needed, especially as this is a point of difference from the (apparently opposite) finding among non-EU Member States. It is interesting to note that use of internal evaluation was positively associated with highly-resilient status. Perhaps this finding helps explain why less student testing was associated with academically resilience in this set of analysis: with more internal evaluation processes, maybe there is not so much reliance on student testing as means to monitor teachers.

4.5.3 Summary of factors associated with resilience in non-EU countries

In summary, student factors associated with resilient and highly-resilient status in non-EU countries were generally very similar to those identified in EU Member States. For school factors, there were some slight differences between EU Member States and non-EU countries. However, the associations of student testing to monitor teachers and resilience status, and the use of internal evaluation and highly-resilient status, support our EU Member State analyses.

5. Conclusions and implications for future policy and research

This study has aimed to explore and analyse how students with a migrant background succeed academically in European education systems, despite facing education-related adversity.

In this final chapter, we present the overall conclusions from the study and highlight, where relevant, any related implications for policy and future research. The chapter is set out in two sub-sections as follows:

- Section 5.1 distils the key findings from the study's empirical analysis, drawing on the results from the different analyses and approaches undertaken to operationalise academic resilience;
- Section 5.2 reflects on the key learning from the methodological approaches explored and conducted by the study.

5.1 Key findings from the study

Our study finds that, as might be anticipated, there are some **clear differences between students with and without a migrant background across the EU**. These differences are reflected in the level of disadvantage, and the scale of education-related adversity, that students with a migrant background experience compared to their non-migrant peers. A key finding is that migrant background students are more likely than their native peers to experience socio-economic disadvantage, as approximately two-thirds of second-generation and first-generation students have a below average (in the lowest two quartiles) level of ESCS.

There are also some broad trends in the results from all four approaches used to identify the **proportions (or 'shares') of academically resilient students** in Member States throughout the EU. Typically, Member States have higher shares of resilient students from a non-migrant background compared to those with a migrant background. However, there are some exceptions. For example, larger proportions of resilient second-generation students (compared to non-migrant students) were found in France, Italy, Luxembourg and the UK.

Notable differences **between** Member States were also found in relation to levels of resilient students from a migrant background. The composition and characteristics of the migrant populations is a likely factor that explains this variation between Member States. Analysis demonstrated that Member States with long histories of inward migration from specific countries, particularly those with close geographical, cultural, and/or educational symmetry, and greater proportions of highly educated migrants, were more likely to have greater shares of resilient students. This highlights the importance of recognising the changing migration landscape within the European Union, and the reality that Member States must seek to integrate migrants from various backgrounds, not just those from countries where there is close geographical, cultural and/or education similarities.

The study's analysis was broadened to examine the **shares of academically resilient students with a migrant background in a selection of non-EU countries** (specifically the USA, Canada, Australia and New Zealand). The analysis found that proportions of resilient students within these countries were considerably greater than those in EU Member States. An exploration of these differences highlighted several areas of contrast that may help explain these differences in shares of resilient students. Some, but by no means all, EU Member States differed to these non-EU countries in terms of levels of GDP per capita and population size. Therefore, these features alone are not

likely to explain the differences in shares of resilient students between EU and the group of non-EU countries. Other factors, which are likely to play a role in this differential pattern, include:

- The differences in how GDP per capita is used within these countries, especially in relation to their implementation of education and integration policies;
- Differences in the skills and education levels of migrants entering the non-EU countries compared to EU countries; and,
- The relatively stronger policies for migrant integration within the non-EU countries, compared to the EU, specifically in relation to targeting the needs of migrant students and intercultural education (Australia and Canada also have strong policies aiming to create new education opportunities for migrants).

Our **descriptive analyses of the characteristics of academically resilient students** showed that they are most likely to be students who: by definition have lower levels of ESCS and achieve significantly better results in mathematics (relative to the PISA average for countries included in the analyses); empirical analyses have shown that they have higher academic self-expectations; and are male. However, the association of resilience with being male needs to be set in a wider context that may explain this result: that is, irrespective of resilience status, on average, male students perform higher on the PISA mathematics assessment compared to females, in most Member States (see section 4.1.1 for important interpretation of this finding). In addition, resilient students with a migrant background were also more likely to have higher levels of motivation compared to those from a non-migrant background.

It was evident across different approaches (both variable- and person-centred approaches), that there are encouraging patterns and consistencies across the student- and school-level **factors associated with academic resilience** and the educational success of resilient migrant background students. These findings indicate that there are factors that schools and policy-makers could usefully consider in the more immediate term; that is, things which are so consistently influential as to warrant more immediate consideration. For example, one consistent effect was **the role of positive academic self-expectations in predicting resilience status** and in predicting resilient students' academic performance. The significance of this factor gains more influence by the person-centred analyses, where a major difference emerged between the robust profiles and the more precarious and vulnerable profiles centred on academic self-expectations. Moreover, among the resilient students, although all had achievement in the top two quartiles, those with higher academic self-expectations had significantly higher scores: a factor that in itself can help migrant students to achieve a resilient status. Particularly for migrant background students coming into a school, there may be low expectations for them and by them— although our analyses do not imply causality, it is logical to consider the possibility that if self-expectations can be raised, there may be significant educational benefits to follow.

Another example is **school attendance** — a factor consistently associated with academic resilience. Here, schools can identify factors within the school to improve migrant background students' inclination and capacity to arrive on time, stay the entire day, and attend all week. There might also be opportunities to connect with the home to identify any factors that may lead to the young person being late or attending school on only some days of the week.

There were two other sets of findings that were interesting and that we suggest as **factors eligible for what might be called a "watch list"**. The first set included factors that were significant in one group of analyses, but not in another group of analyses. For example, the extent to which staff provided help with homework was a

school-factor predicting highly-resilient status for first-generation migrants. However, it was not a significant predictor in other analyses or for second-generation students. The positive effects of assisting students with their homework makes intuitive sense, but requires further research to ensure that this finding is robust enough to warrant greater attention than other factors we identified for more immediate attention.

The second set included factors that, on first glance, were not so intuitively congruent. For example, larger class sizes were associated with migrant background student resilience and this is counter to research suggesting the yields of smaller class sizes (albeit with small effect sizes). Although this effect emerged in a number of analytical approaches, because it is counter to some other research, we suggest it for a watch list and for further investigation. Indeed, here we also encounter the limitations of cross-sectional data, such that we cannot know if there is something about larger class sizes that may assist migrant background students or if resilient migrant background students for some reason are more likely to cluster in larger classes. Also for this watch list are factors such as peers/friends and school improvement practices (which were both associated with lower academic resilience)—and which are also critical to further investigate with longitudinal data to better understand the causal ordering.

The number of **student factors that predicted resilience in both the EU and non-EU analyses** provides evidence about the salience of these factors across quite different contexts. In both the EU and the non-EU countries, being older and male, having higher academic self-expectations, greater school attendance, and not repeating a grade were associated with resilience status. Similar student factors were also evident among the highly resilient students. At the same time, several differences in the predictive factors across the EU and non-EU countries also provided insights.

The non-EU countries all have long histories of receiving migrants from specific countries and have programmes in place to support migrant background students. This may help to explain why the selected non-EU countries had higher shares of resilient students with a migrant background.

Whilst our analysis of country factors was only descriptive, it did highlight the composition and characteristics (e.g., migrants from China seeking the educational opportunities in countries like the USA and Canada) of migrant populations within a country as a potential explanatory factor. Furthermore, the non-EU countries demonstrated greater evidence of migrant integration policies relative to EU Member States.

Although this project has given some emphasis to understanding the specific status and achievement of migrant background students, it also revealed **effects that generalise to non-migrant groups**. For example, for reasons explained below in section 5.2, our project focused on mathematics achievement and it is notable that gender emerged as a significant factor in predicting resilience status and achievement outcomes: specifically, boys were more likely to be academically resilient and achieve more highly when adopting this achievement outcome as the basis for analysis. As noted earlier, this is a rather consistent gender effect beyond migrant background students. We also make the point that in a subsidiary analysis using literacy achievement as the outcome variable, we found that migrant background girls fared more favourably than migrant background boys — a gender effect that generalises beyond our migrant background students. Thus, although our report targets migrant background students and their distinct needs, we urge the reader to be mindful there are factors that generalise beyond this group and that can assist students more broadly. Nevertheless, notably, here again we point out the importance of conducting both variable-centred and person-centred analyses.

Specifically, the variable-centred analyses highlighted being male as a factor implicated in academic resilience, whereas the person-centred (latent profile) analyses identified a group of very resilient students, many of whom were girls. Thus, a critical mass of girls in the sample were academically resilient (in mathematics) and our person-centred analyses was able to identify these girls, and the factors associated with their resilient status.

5.2 Key learning from the study

The present study has identified and pursued **a range of different empirical approaches to operationalising and studying academic resilience** among students with a migrant background. The rationale for this has been that different ways of approaching and studying academic resilience may be appropriate for different questions that researchers, practitioners, and policy-makers could want to ask about migrant background students' academic resilience. Thus, our study did not privilege one approach over another; rather, we suggest our project provides direction, and some specificity, on the choice of methods possible given a particular research, practice, or policy purpose.

There may be **different resilience groups of interest** and our research has revealed analytical approaches to study them, along with the various factors implicated in their group membership. For example, our "highly resilient" group conformed to the **typical OECD approach** by taking migrant background students in the top quartile of achievement and the lowest quartile of ESCS. Findings here shed light on students who are most disadvantaged yet achieve most highly. Notably, however, we also investigated a "resilient" group by relaxing the performance criteria to include students in the top two quartiles of achievement and the lowest quartile of ESCS. Given the well-known disadvantage experienced by migrant background students, we might consider that achieving in the top half of a country's 15-year olds is a significant educational success.

Our study also underlines that there are **other ways to conceive of resilience status—beyond OECD guidelines**—and that these, more exploratory, approaches shed further light on the issue by augmenting current perspectives on resilient students with a migrant background. In this project, these alternative approaches comprised the clustering approach, the latent profiling approach, and the deviation approach. The clustering and latent profiling approaches enabled us to understand different groups of students that reflected academic resilience in distinct ways. These approaches identified groups of resilient students who varied in terms of background and personal characteristics. Thus, distinct from the above OECD approach, (that considered highly resilient students, for example, as a homogeneous group²²) these clustering and latent profile approaches enabled insight into intra-group variability, and the bases on which this variability occurred. The deviation approach was another exploratory approach implemented in the project. Here we were interested in students who exceeded statistical expectations by performing beyond what would be expected given their school, personal, and background characteristics.

We have also emphasised **the importance of clearly identifying the outcome of interest** when examining academic resilience among migrant background students. Firstly, there is resilience status itself. Thus, being low in ESCS and high in achievement is a highly desirable outcome in itself. However, it is also the case that within the resilient group of migrants there is a range of performance within the top quartile (in the case of "highly resilient" students) and within the top two quartiles (in the case of "resilient" students). Our analyses therefore also investigated factors predictive of different levels of academic success among resilient migrants.

²² All students in the highest and lowest quartiles of achievement and ESCS, respectively.

Our project also recognised the importance of disentangling student-level predictors and school-level predictors, as well as student-level resilience and school-level resilience. Analyses took account of the multilevel structure of the data and identified that there were **student and school factors that impact students' resilience status and also resilient students' educational success**. We also examined school-level resilience and identified numerous factors which influence the extent to which schools could be characterised as having a critical mass of resilient, migrant background students within them. This is informative for bottom-up approaches to supporting migrant students (in the case of student-level predictors and outcomes) and top-down approaches (in the case of school predictors and school outcomes).

The **exploratory approaches** (e.g., clustering, deviation, etc.) served two key purposes in this study. The first was that many findings emerging from these approaches mirrored the more classic approaches guided by the OECD that have, for example, investigated factors predicting resilience status. To the extent this mirroring of results occurred, these exploratory approaches **served to validate these findings**, supporting the finding that there are factors predictive of resilience that are shared across different approaches. Identifying similar findings (in this study, 'factors') across quite different analyses is reassuring: particularly in large datasets where statistically significant findings may arise by chance (e.g., due to conducting multiple statistical tests or as a function of large sample sizes). The second purpose was **the role of exploratory approaches in adding value to the project** through identifying some unique aspects of migrants' resilience that may not otherwise have been identified (e.g., the provision of a study room by schools). Although we understand further research will be needed to confirm these value-added findings, we also point out that our exploratory approaches have provided a first insight into additional factors or perspectives that may be important in further understanding migrant background students' experience.

Our project also employed both **variable-centred and person-centred approaches** to analyses. Variable-centred approaches (e.g., using logistic regression, probit regression, multiple linear regression) are where the focus is on specific factors that are associated with the resilience status of students and schools — or associated with the academic achievement of resilient students and schools. As noted earlier, variable-centred analyses are helpful for practice and policy intervention because they identify influential factors (e.g. school attendance, study rooms, etc.) to target in interventions or programmes. Alongside variable-centred approaches, it is also helpful to explore the potential for different profiles of academic resilience within the group of students who are in the lowest quartile of ESCS and highest achievement quartiles. This is referred to as person-centred analysis (e.g., using latent profile analysis) and is aimed at identifying different subgroups of academically resilient students. This is useful because it enables practitioners and policy-makers to identify particular students (or student groups) to assist in refining the designs of, and implementation approaches adopted for, interventions.

We have emphasised both **variable- and person-centred approaches** in order to take into account the reality that some interventions and policies will be focused on factors and some will be focused on students or groups of students. Variable-centred approaches will be effective in circumstances when there is interest in identifying aspects of a student (or his/her life), or aspects of a school, that make a difference to educational outcomes. Person-centred approaches are helpful if there is interest in identifying which students, or groups of students, to support in particular.

It was also sometimes the case that one approach was able to methodologically disentangle the limits of the other approach to help us better understand migrant background students' academic resilience. For example, it was initially surprising that motivation did not emerge as more positive in the variable-centred approaches to student-level academic resilience. However, the person-centred approach shed clearer light on this by showing that motivation was a significant positive factor for the sub-groups of students with more 'robust' academically resilient profiles. The variable-centred approach was focused on identifying the average effects of factors (across the sample); as a result, this limited the prominence of motivation in the variable-centred findings. In contrast, the person-centred approach disaggregated the effects of motivation (by assessing its role in different groups of resilient migrants, not assessing its average effects across the sample). As such, this approach identified motivation as a relevant, positive factor for some groups of students. In sum, it is clear that the two approaches are **not mutually-exclusive; rather, they are mutually-informative.**

Annex 1 Summary of feedback from the Scientific Committee and Policy Delphi consultation

This study has benefited from the expert feedback of our Scientific Committee throughout the duration of the research and particularly in relation to the study's key findings. In addition we undertook a Policy Delphi exercise, following the second interim report, to consult with a select group of key stakeholders on the study's key findings and their policy implications.

The key insights and comments from the study's Scientific Committee, and the wider expertise of respondents to the Policy Delphi consultation, can be summarised as follows:

- **Variation in shares of academically resilient students with a migrant background across Member States** are likely to be explained by a range of factors including: education policy & system factors (e.g. a selective focus of the educational system; the difficulties that this group of students may encounter when navigating the education system; the extent to which education systems provide extra support (e.g. mentors, help with homework); the extent to which there is a focus on the availability of future educational opportunities; as well as other contextual differences, such as the existence of policies to increase the number of teachers from migrant backgrounds. In general, there was a view that this range of differences, and possible explanations for the variations across MS, highlights the interactive, dynamic nature of resilience.
- **Higher shares of academically resilient students in non-EU countries** is linked to contextual differences such as: variation in the composition of migrant inflows (e.g. differences in their cultural background, nationality and SES); the extent of support to participate in higher education; more selective migration policies; and long histories of successfully integrating students with a migrant background into their education system (e.g. through a recognition of positive role models and identities of/for students with migrant backgrounds).
- **The strong positive association of higher academic expectations with academic resilience** is facilitated by policy features such as: low levels of tracking/monitoring of students (especially at the early stages of their education); empowering parents to support their child's learning; and clarity of communications around the educational outcomes which students are expected to attain (e.g. by promoting higher academic expectations).
- **The negative association of skipping, or being late for, school with academic resilience** illustrates the need to take account of strategies to reduce early school leaving across Member States, especially those focused on coordinated early intervention and school-based provision; and indicates the need to introduce specific measures to support newly arrived children with a migrant background, particularly to help their integration into education systems (e.g. by creating conditions to involve parents of migrant background students in schools, partly to support and encourage them to regard their child's school as part of their community).
- **Provision of study rooms, the use of student testing to monitor teachers and undertaking internal evaluation had a positive association with academic resilience.** There was general agreement that these practices align with effective mechanisms to support academic resilience and that dissemination of evidence, and learning, related to such effective provision, or approaches, should be encouraged (e.g., there was particular support for the evaluation of students' well-being).

- **On average, socio-economically disadvantaged students with a migrant background attended schools with relatively less autonomy from government.** The broad view was that there should be a focus on how schools could overcome any barriers associated with this limitation (e.g. schools working together with the aim of collectively meeting the needs of their community(ies); school leadership and staff being transparent, and honest, with parents and the school's community about the limits placed on the school's autonomy).

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