Parental Socioeconomic Status and Educational Attainment of Immigrant Children in Europe.

Exploring the Role of Age of Arrival and Intergenerational SES Transmission.

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Master's thesis

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Abstract

Educational attainment is an important determinant of integration into society, particularly for immigrant families. This study explores the association between parents' socioeconomic status (SES), specifically their occupation, and the educational success of immigrant children in 12 EU countries. It also examines whether the age of arrival affects this association. Building on social and cultural capital theories, as well as the theory of compensation, and prior literature, this research hypothesizes a stronger SES-education association for the children arriving after schooling age due to their increased reliance on parental resources.

Using data from the European Social Survey (ESS) rounds 5–11, the sample included 1.472 immigrant respondents aged 25–55 years who migrated between ages 1 and 14. Multivariate linear regression and interaction analyses were conducted, with predicted probabilities to assess educational attainment by parental occupation and age of arrival.

Results indicate that both parental occupation and age of arrival predicts children's educational attainment; however, the hypothesized age of arrival moderating effect was not supported. The findings emphasize the enduring parental SES influence on children's education, regardless of age of arrival.

This research highlights the need for policies addressing educational inequalities in immigrant families, emphasizing family support and parents integration in the labour market. The findings also contribute to theoretical discussions on the interaction between SES and migration-related factors influencing educational attainment.

Keywords: Educational attainment; socioeconomic status; immigration; age of arrival.

1. Introduction

Previous research has repeatedly shown that students with immigrant parents often perform worse than their native peers and tend to have less educational attainment on average. These differences in educational performance are persistent across European countries. Data from PISA 2012 had displayed these differences, where immigrant students' performance was below proficiency level on different subjects, underperforming in comparison to the native students (Harju-Luukkainen et al, 2014; Janta & Harte, 2016; Harju-Luukkainen & McElvany, 2018; Harju-Luukkainen et al, 2020).

Further research had pointed out that immigrant students are also more likely to drop out from school than the native students. Socioeconomic status partly explains these differences (Kilpi-Jakonen, 2012; Salmela-Aro & Chmielewski, 2019). These differences unveil the need to delve into the underlying factors that contribute to this performance and educational attainment gap. The socioeconomic status (SES) is a multidimensional concept that includes income, education level and occupation, each of which is associated to the children's educational attainment. This study focuses more on the parental occupation because it conditions the household's resources and the possibility to engage in the children's learning process (Heath & Brinbaum, 2007; Erola et al., 2016). While parental education reflects long-term socioeconomic positions, occupation displays current economic circumstances that influence the resources available to invest in their children's education (Erola et al., 2016).

Furthermore, the focus on parental occupation is motivated on the basis that, despite that highly educated parents are able to provide support to their children with the homework, these often are only able to access low-skilled jobs, which add employment-related stressors, such as job instability, impacting parental involvement in their children's education (Kilpi-Jakonen, 2012; Hillmert, 2013). These differences in occupation contribute to widening the performance gap between native and immigrant students (Säävälä et al., 2017; Lobato & Bernelius, 2023).

Further research underline the age of migration, besides the SES, as a relevant factor that might influence the children's educational attainment. These studies point out that those children who arrive at a later age tend to have more difficulties to learn the language and to integrate in the educational system, which difficult their learning process (Ansala et al., 2019; Ferry & Ichou, 2024). Moreover, immigrant children arriving at later age might have less time to interact with native children, which add more difficulties to their adaptation deepening the performance at school (Heath et al., 2008; Arvola et al., 2017; Kaukko et al., 2022).

This MA-thesis focuses on first generation immigrants and the age at which they arrived at the host country, raising the question, whether the age of arrival affects the association between the parental socioeconomic status and their children's educational success. The age of arrival might have an effect on this association because those children arriving at a later age are more likely to struggle with the language acquisition, unlike those arriving at a younger age, which might increase their dependence on parental resources to overcome the difficulties to integrate better into the educational system (Heat & Kilpi-Jakonen, 2012; Hermansen, 2017).

Furthermore, those children arriving at a later age have already been studying in their country of origin's educational system, which might differ from the host country, hindering their school performance and leading them to rely more on their parental resources to ensure their continuity at school through private tutoring, for example (Heat & Kilpi-Jakonen, 2012). This educational progress hindering might happen due to disruptions in the learning methods, differences in the curricula or the grading system (Bernardi & Grätz, 2015).

These children might also experience social and cultural dislocation leading to reduced peer interactions and access to academic support, which increases pressure on the parental resources (Hermansen, 2017). This association unveils the relevancy of the age of arrival and that it might act as a moderator in research delving into the educational performance gap.

This study relies on a quantitative research design using data from the European Social Survey (ESS), rounds 5-11, across 12 EU countries. The sample includes first generation immigrants aged 25-55 who arrived in their host country between ages 1 and 14. The dependent variable is the educational attainment, measured as years of full time education completed. The parental socioeconomic status is the predictor and is assessed mainly through their occupation but also examining the parental educational level.

Multivariate linear regression models are used to explore the association between occupational status of the parents and their children's educational attainment. Interaction terms are used to examine whether the age of arrival moderates this association or the association between the parents' educational level and their children's education. Predicted probabilities are generated to visualize these effects.

By addressing these differences in educational performance through understanding the factors that obstruct the immigrant children's educational attainment, it is possible to design policies that target and reduce these difficulties (Kaukko et al., 2022; Korpela, 2023). This is relevant to increase employability, income level, and overall, a long-term socioeconomic integration of the immigrant citizens (Harju-Autti et al., 2021; Ojwang, 2021).

Previous Literature

Previous literature rely on different theoretical framework to explain these disparities between immigrant and native students in the educational performance and attainment. According to the theory of cultural capital, developed by Bourdieu, individuals' social position is determined by the capital that they own (Simon & Ainsworth, 2012). Children with higher SES parents are more likely to have access to more resources and social connections that their parents provide for them, which improve their educational performance (Simon & Ainsworth, 2012). These resources and connections tend to be lower within immigrant families due to limited integration into the host society (Heath & Brinbaum, 2007).

Another theory, that aligns with the cultural capital theory, is the theory of compensation that has been widely discussed by Blossfeld. This theory suggests that parents transmit academic support and cultural knowledge to their children, which improve their adaptation to educational system, mitigating potential disadvantages (Minello & Blossfeld, 2017). Those children facing structural barriers or from a disadvantages background, such as immigrant children arriving at later age, would rely more on their parents' resources to compensate for these challenges (e.g., language barriers, learning methods or less peer interaction) (Fan & Porter, 2020; Tanskanen et al., 2016; Lyell et al., 2020).

Moreover, educational outcome is also associated to the parents involvement in the community, establishing social connections and exchange of resources, according to the theory of social capital by Coleman (Acar, 2011). This theory underline the relevancy of the social barriers that shape the immigrant families' children educational performance (Fuligni & Fuligni, 2007). The theory of compensation also suggests that high-SES parents are more likely to use their social connections (e.g., engage with teachers, attending parents meetings) to support their children in the learning and adaptation process to overcome potential disadvantages (Popyk & Pustułka, 2023; Portes & Rivas, 2011).

It is well established the association between the different dimensions of the parents' SES and their children educational attainment. Firstly, parents with higher education and income levels are more likely to support and improve their children's educational outcome than parents with a lower educational level, and their children tend to perform better in school and acquire higher educational attainment (Kilpi-Jakonen, 2012; Erola et al., 2016). Secondly, immigrant families children are more likely to face challenges due to their parents' lower-SES, which reduces their access to educational resources (Säävälä et al., 2017; Lobato & Bernelius, 2023).

Despite overall patterns of disadvantages, further research display that some immigrant-origin groups, on average, have better academic performance than their native peers, underlining the complexity of the factors influencing the educational success (Hillmert, 2013; Helakorpi et al., 2023). These patterns are still observed after controlling for parental SES, suggesting that some immigrant groups might benefit from school-related factors that contribute to their educational attainment (Hermansen, 2017; Ferry & Ichou, 2024).

Among the different dimensions of the parental SES, the occupation has a special effect on the children's educational attainment. Most immigrant parents with higher education level tend to be employed in low-skills employment, which obstruct the financial and educational resources they provide to their children (Kilpi-Jakonen, 2012; Heath & Brinbaum, 2007). This situation contributes to widen the performance gap across EU countries, where immigrant children with parents employed in low-skills jobs tend to have lower educational attainment on average than their native peers, despite the parental educational level (Säävälä et al., 2017; Rinne & Järvinen, 2010; Ismail, 2019; Järvinen et al., 2023).

Moreover, as mentioned earlier, age of arrival is another factor that might influence immigrant children's educational attainment. This factor is often associated to the language learning and the adaptation to school (Ansala et al., 2019; Brunello & De Paola, 2017). Immigrant children arriving at later ages experience these challenges regardless of parental SES (Ferry & Ichou, 2024; Kaukko et al., 2022). However, high-SES children are more likely to access additional support, such as private tutoring (Basu, 2018). Further research suggest that parental SES might mitigate some of these age of arrival related disadvantages but does not suppress them entirely (Bernardi, 2014). These assumptions underline the need to examine the effect of age of arrival in the well-established association between parental SES and educational attainment.

Research gap and contribution

Previous literature has examined repeatedly the association between parental SES and children educational attainment (Kilpi-Jakonen, 2012; Heath & Brinbaum, 2007). These studies have delved into the association between the different dimensions of the SES, such as income or the educational level (Erola et al., 2016; Salmela-Aro & Chmielewski, 2019). Recent research have pointed out the age of arrival as an important factor that determines the educational attainment (Ansal et al., 2019; Ferry & Ichou, 2024). However, these have not considered the possibility that age of arrival might moderate the association between the parents' SES and their children's educational attainment.

This thesis intends to contribute to the body of literature by analysing the potential moderation effect of the age of arrival in the association between the immigrant students' performance and their parents' SES, focusing on the occupational dimension. As mentioned, previous research has considered these factors separately instead of the possibility that these might interact while shaping the educational outcome. This Thesis intends to explore this possibility and provide a more comprehensive understanding of this phenomenon. The aim of this thesis' findings is to provide more guidance into designing specific policies that focus on the differences in school performance and educational outcome shaped by parental occupation and age of arrival.

The societal relevancy of this research is to potentially guide educational strategies that might address the inequality in educational outcome among immigrant students. By comprehending how the interaction between the age of arrival and the parental SES shapes the performance in school of these students, policymakers can design specific strategies supporting those children who arrive at a later age and their families. These policies could be language learning programs or strategies to promote occupational mobility for highly educated parents. These strategies are important to reduce long-term socioeconomic inequality by guaranteeing equal opportunities among children, independently of their parental SES.

Therefore, the present thesis intends to examine whether the age of arrival moderate the effect of parental socioeconomic status, specifically their occupation, and their children's educational attainment in Europe. Based on the previous literature and theoretical framework, the present thesis hypothesizes that this effect or association would be stronger for children arriving at later ages, specifically after schooling age, due to the challenges they encounter regarding adaptation to schooling system or language learning, which increases their reliance on parental resources to compensate for these deficits (Ansala et al., 2019; Ferry & Ichou, 2024).

Correspondingly, this association is expected to be weaker for those children arriving earlier or before the schooling age due to their earlier integration into the host country's educational system, which would reduce their reliance on their parents' resources for a better performance (Kaukko et al., 2022; Brunello & De Paola, 2017; Kilpi-Jakonen, 2011).

By addressing this research question, this thesis intends to display insights into the interaction between the parents' SES and the factors specifically related to the migration. The following section displays the data and methods this thesis relies on to explore these hypotheses.

2. Data and Methods

Data and variables

This thesis relies on data from the European Social Survey (ESS), a cross-national survey that focus on behaviours and beliefs across EU countries. The data is collected biennially through in-person interviews with respondents starting from 15 years old in each country. To ensure population representativeness, ESS relies on rigorous probability sampling (European Social Survey, 2024). The data employed in the present study has been obtained from the ESS rounds 5 to 11, covering 12 countries: Finland, Sweden, Denmark, Norway, Estonia, Spain, Germany France, Netherlands, Italy, Portugal, and Belgium. However, not all rounds were available for all 12 selected countries.

These 12 EU countries were selected based on the availability of multiple rounds of ESS data, ensuring sufficient number of respondents for the analysis. In addition, these countries happen to be receivers of substantial immigrant populations, making them relevant to test the present MA-thesis hypotheses in different migration contexts.

The initial dataset was restricted to the respondents born outside the current residence country focusing on first-generation immigrants. The sample included only individuals between 25 and 55 years old, ensuring that they likely have completed their education. Additionally, the sample was restricted to those who migrated between 1 and 14 years old to ensure that the respondents were born outside their host country, allowing for an analysis of age of arrival rather than native born experience. The upper age limit of 14 years old ensures that the respondents migrated as children with their parents and continued their education in the host country. These restrictions align with previous literature underlining the relevancy of early migration for the adaptation to the educational system and language learning (Ansala et al., 2019; Hermansen, 2017). After these main restrictions in the dataset, the sample included 2.227 respondents.

Other restrictions in the initial dataset included dropping missing values to ensure consistency across the analyses. Aside from the year of birth, all the variables in the initial dataset displayed missing values: born in country, years of full time education completed, respondents' age and gender, year they came to live in the country, parental education level, and parental occupation when the respondent was 14 years old. Overall, there were dropped 3.962 missing values from the initial dataset, during and after the main restrictions, corresponding to: respondent refused to answer, did not know, did not answer, or other.

Respondents with fewer than 9 years of full time education completed were dropped to ensure that all individuals in the sample had completed at least basic education. Similarly, respondents with more than 21 years of education or PhD were restricted, as postdoctoral education could be considered an outlier in terms of typical educational trajectories. These restrictions ensure a more representative distribution of educational attainment as well as reducing the possibility of a skewed analysis. These restrictions involved dropping 213 observations resulting in this thesis sample with 1.472 respondents.

The dependent variable displays how many years of full time education have been completed by the respondents, ranging from 9 to 21 years. The main predictor is the parental occupation in the host country when the respondent was 14 years old. Originally, this variable was coded into 10 categories: professional and technical occupations, higher administrator occupations clerical occupation, sales occupation, service occupation, skilled worker, semi-skilled worker unskilled worker, farm worker, and not applicable, corresponding to unemployed, absent from the household, or deceased. This predictor has been recoded into 4 categories for the analysis: upper white-collar occupation, lower white-collar occupation, blue collar and farm occupation and unemployed, dead or absent. The parental occupation was employed as a proxy for parental socioeconomic status (SES).

This study applies the dominance approach (Korupp et al., 2002), which considers the highest parental-SES within a household instead of analysing each parent separately. Research in SES and intergenerational mobility rely on this method to capture the highest parental educational level or occupational status influencing children's education (Thaning & Hällsten, 2020). In this sample, fathers hold the highest occupational status, and the analysis focuses on parental occupation, following the dominance principle.

The age of arrival variable was generated from the respondents' year of birth and the year they came to live in the residence country. This was recoded into 2 categories: before schooling age (1-6 years old) and after schooling age (7-14 years old). The cut-off at age 6 was set because it aligns with the standard starting age for compulsory education in most EU countries, ensuring consistency across the analysis. This distinction also follows the rationale of previous research underlining the relevancy of early schooling in the language learning, adaptation to educational system and academic performance (Ansala et al., 2019; Brunello & De Paola, 2017).

Education is another relevant dimension of parental-SES that reflects the economic and cultural resources available to children (Erola et al., 2016). Highly educated parents are more likely to support their children with homework increasing their learning opportunities. Fathers also hold the highest level of education in this sample, and the analysis focuses on parental educational level following the dominance approach (Korupp et al., 2002). The highest level of education was considered based on the International Standard Classification of Education (ISCED), and for the analysis, it was recoded into three categories: basic education, secondary education, and tertiary education.

Several control variables are included in the analysis considering potential confounding factors Respondents' gender is controlled for, as previous research suggest that educational attainment might vary by gender. In addition, considering cross-national differences, such as in education system and migration policies, country is another variable that is controlled for, although this MA-thesis does not intend to compare country-level estimates. Lastly, as data is pooled from multiple rounds of the European Social Survey (ESS), survey wave is controlled for to ensure that temporal variations, such as in migration patterns or policies, do not bias the results.

Methods

Linear regression method has been employed to test the association between the parents' SES and their children's educational attainment. This method is employed to model the association between a predictor or independent variable and the dependent variable or outcome through a fitted linear equation to the data (Sutaria, 2016). In addition, an interaction term has been added to the linear regression model to test whether the age of arrival has an effect in the association between parents-SES and children's educational attainment (Schielzeth, 2010). Although, the main predictor of interest of this MA-thesis is the parental occupation, an interaction analysis was also conducted between parental education and age of arrival.

The results were plotted through predicted probabilities to visualize whether there is a possible interaction between parents' SES and age of arrival on children's educational attainment. These predicted probabilities plots display the estimated educational attainment across the different categories of parental occupation, and educational level, based on the respondents age of arrival This is relevant to interpret whether there is an interaction as well as this effect's direction and magnitude (Mize, 2019).

Descriptive Statistics

Table 1 displays the descriptive statistics of this MA-thesis' sample variables. The continuous variables are the respondents' age, the age of arrival at the host country, and years of full-time education completed. The mean age of the respondents in the study sample is 39.88 years with a standard deviation (SD) of 8.99 displaying a relatively balanced distribution across the age range of 25-55 years. The mean age of arrival is 6.25 years (SD = 3.96) displaying variation in the years of migration from 1 to 14 years old. The years of full time education completed range from 9 to 21, with a mean of 14.48 years (SD = 3.12). This indicates level of education beyond compulsory, with some higher education levels (**see Table 1**).

Table 1
Descriptive Statistics of Continuous and Categorical Variables

Variables	Categories / Statistics	Value (%) / Mean (SD)	Min	Max
Continuous Variables				
Respondent's Age	**Mean (SD)**	39.88 (8.99)	25	55
Age of Arrival	**Mean (SD)**	6.25 (3.96)	1	14
Years of Education	**Mean (SD)**	14.48 (3.12)	9	21
Categorical Variables				
Respondent's Gender	Male	49.39%		
	Female	50.61%		
Age of Arrival	Below schooling age (1-6)	58.02%		
	Above schooling age (7-14)	41.98%		
Parental Education Level	Basic	32.61%		
	Secondary	44.09%		
	Tertiary	23.30%		
Parental Occupation	Upper white-collar	19.02%		
	Lower white-collar	19.16%		
	Blue collar and farm	51.02%		
	Unemployed/ Dead or Absent	10.80%		

Data obtained from the European Social Survey (ESS), rounds 5 – 11, including 12 EU countries (N = 1.472)
Analysis conducted in STATA 18. (European Social Survey, 2024).

The categorical variables (**see Table 1**) are the respondents' gender, the age of arrival recoded into two categories, parental education level, and parents' occupation when the respondent was 14 years old. Those respondents who migrated before the schooling age (1-6 years) represent 58.02% of the sample, while 41.98% arrived at the host country after (7-14 years).

Following the dominance approach (Korupp et al., 2002), this MA-thesis considers the highest education level and occupational status within the household rather than examining each parent separately. In this study's sample, fathers predominantly hold the highest educational level and occupational status; therefore, the reported figures reflect the characteristics of the parent with the highest SES.

Educational attainment among parents varies considerably. 32.61% of the respondents' parents have only acquired basic education, while the largest proportion, 44.09%, attained a secondary education. A smaller share of this sample, 23.30%, completed tertiary education (**see Table 1**) These figures highlight the distribution of parental education in the sample, with a substantial proportion of respondents originating from households where parents hold lower educational qualifications.

The distribution of parents occupation when the respondent was 14 years old displays that over half of the parents, 51.02%, were blue-collar or farm employees, representing the largest group in the sample. 19.16% held lower white-collar occupations, while a similar proportion 19.02% were employed in upper white-collar professions. A smaller share of the sample, 10.80%, were either unemployed, deceased, or absent from the household (**see Table 1**). These occupational patterns display SES diversity within respondents' households in this sample.

3. Results

Table 2 displays the linear regression models' results predicting the years of full time education completed by respondents. Model 1 examines the bivariate relationship between the respondent educational attainment and parental occupational status. The result indicate significant negative associations for respondents whose parents held lower status occupations compared to those in the reference category, upper white-collar. Specifically, having a parent employed in a lower white-collar occupation is associated with **0.93** fewer education years **($p < 0.001$)**, while those from blue-collar and farm professions background complete, on average, **2.19** fewer education years **($p < 0.001$)**. Similarly, respondents' whose parents were unemployed, deceased or absent displayed **1.64** less years of educational attainment **($p < 0.001$)** (**see Table 2**).

Table 2
Linear Regression Results: Parental SES, Age of Arrival, and Educational Attainment

	M1	M2	M3	M4
Parental occupation (respondent 14 yrs)				
Upper white-collar **(Ref)**				
Lower white-collar	-0.929***	-0.014	-0.103	-0.044
	(0.254)	(0.281)	(0.337)	(0.282)
Blue-collar and Farm	-2.185***	-0.732**	-0.652*	-0.762**
	(0.211)	(0.274)	(0.313)	(0.275)
Unemployed/ dead or absent	-1.643***	-0.575	-0.379	-0.626*
	(0.299)	(0.315)	(0.404)	(0.316)
Age of Arrival				
Below schooling age (1–6 Yrs) **(Ref)**				
Above schooling age (7–14 Yrs)		-0.514***	-0.411	-0.760**
		(0.154)	(0.372)	(0.265)
Parental education level				
Basic **(Ref)**				
Secondary		1.188***	1.184***	1.107***
		(0.193)	(0.193)	(0.244)
Tertiary		2.249***	2.265***	1.951***
		(0.282)	(0.283)	(0.329)
Parental occupation*Age of arrival (7–14 Yrs)				
Upper white-collar **(Ref)**				
Lower white-collar			0.197	
			(0.505)	
Blue-collar and Farm			-0.177	
			(0.427)	
Unemployed/ dead or absent			-0.423	
			(0.588)	
Parental education level*Age of arrival (7–14 Yrs)				
Basic **(Ref)**				
Secondary				0.191
				(0.348)
Tertiary				0.746
				(0.421)
cons	**15.957*****	**13.574*****	**13.529*****	**13.722*****
	(0.180)	(0.418)	(0.433)	(0.430)
N	**1472**	**1472**	**1472**	**1472**

Standard errors in parentheses
*** $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$**

Note: Data obtained from European Social Survey (ESS), rounds 5-11, 12 EU countries. Models 2 to 4 include control variables (Gender, Country, ESS rounds 5-11). Analysis conducted in STATA 18.
(European Social Survey, 2024).

Model 2 adjusts for control variables and key confounding factors, including age of arrival and parental education level. After adjusting for these factors, the estimates for parental occupation shift considerable (**see Table 2**). The effect of having a lower white-collar parent is no longer significant, indicating that differences in parental education and age of arrival account for much of the disadvantage observed in the bivariate analysis in Model 1.

The estimate for blue-collar and farm occupations remains negative and statistically significant albeit reduced in magnitude **(-0.73, $p < 0.01$)**, suggesting that even after adjusting for parental education and age of arrival, a net disadvantage persists for this group. In contrast, the negative association for respondents with unemployed, deceased or absent from the household parents is no longer statistically significant, implying that the disadvantage in educational attainment initially observed for this group (**see Table 2**) can be explained by differences in age of arrival and parental education **($p < 0.001$)**.

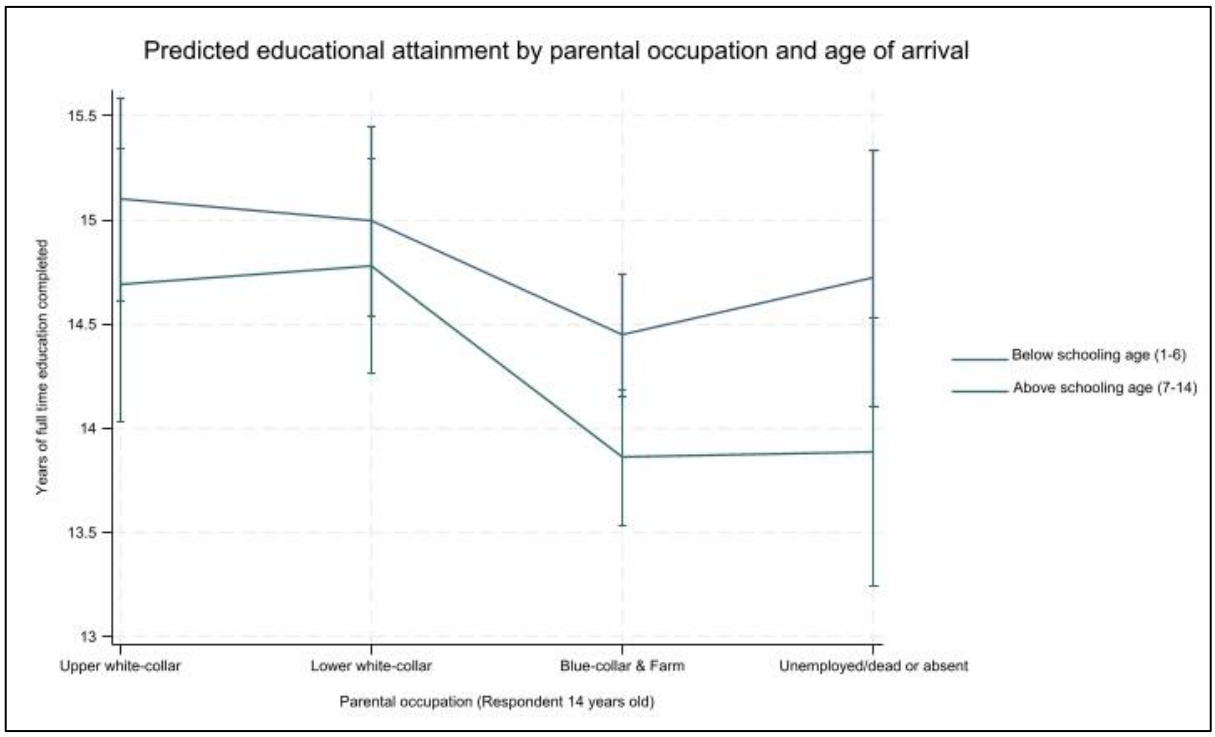
Predicted Probability Plot

Parental occupation and age of arrival

Figure 1 illustrates the predicted years of education completed by respondents, disaggregated by parental occupational status and age of arrival. The general trend indicates that respondents who arrived at the host country before the schooling age (1-6 years) achieve higher educational attainment than those who arrived after (7-14 years). This pattern is particularly pronounced among individuals from blue-collar and farm backgrounds, as well as those with unemployed dead or absent parents. For these groups, late arrival is associated with a significant decline in predicted educational attainment, with the confidence intervals minimally overlapping between early and late arrivals, indicating a potential interaction effect (**see Figure 1**).

Conversely, for individuals from upper and lower white-collar families, the difference between early and late arrivals in educational attainment appears relatively small with some overlap in confidence intervals (**see Figure 1**).

Figure 1
Predicted Probabilities of Educational Attainment by Parental Occupation and Age of Arrival



Note: Predicted probability plot displaying the educational attainment by parental occupation and age of arrival based on Model 3 from Table 2. Data from the European Social Survey (ESS), rounds 5 – 11, 12 EU countries. Analysis conducted in STATA 18. (European Social Survey, 2024).

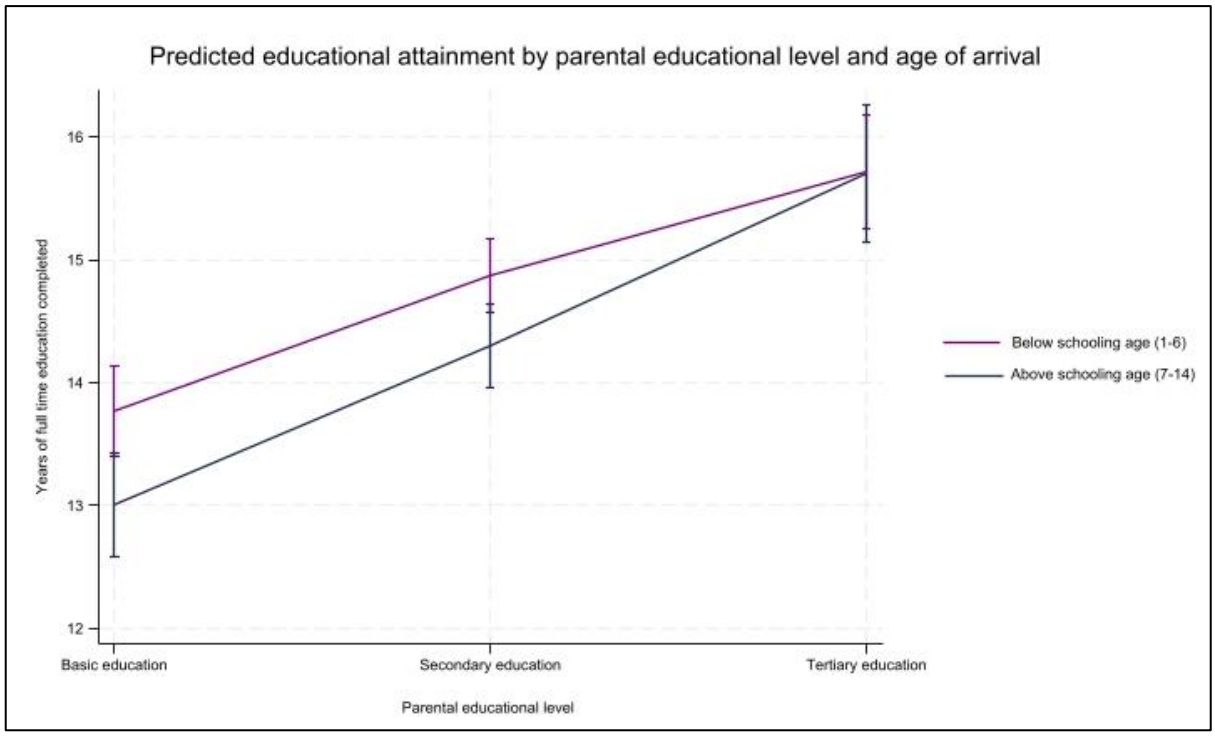
Parental education and age of arrival

Figure 2 depicts the predicted years of education completed based on parental education level differentiating between early and late arrivals. Children with tertiary-educated parents exhibit the highest levels of educational attainment, regardless of their age of arrival. The confidence intervals suggest an overall reduction in educational attainment for those arriving above school age. However, a noticeable gap emerges between early and late arrivals, with those who arrived after schooling age completing fewer years of education (**see Figure 2**).

For respondents from families with secondary or basic parental education, the differences vary between early and late arrivals. In some cases, confidence intervals for early and late arrivals overlap, particularly for respondents whose parents have only a basic education, indicating a weaker interaction effect (**see Figure 2**). Nonetheless, late arrival remain a disadvantage across all parental education levels.

Figure 2

Predicted Probabilities of Educational Attainment by Parental Education and Age of Arrival



Note: Predicted probability plot displaying the educational attainment by parental education and age of arrival based on Model 4 from Table 2. Data from the European Social Survey (ESS), rounds 5 – 11, 12 EU countries. Analysis conducted in STATA 18. (European Social Survey, 2024).

4. Discussion and Conclusion

This study examined the association between parental socioeconomic status (SES), specifically parental occupation, and children's education attainment within immigrant families across 12 EU countries. The research sought to explore whether the children's age of arrival moderates this association, hypothesizing that the effect of parental SES would be stronger for the children arriving after schooling age (7-14 years).

The results display that both parental occupation as well as education significantly predicts the children's educational success, yet no significant interaction effect was found between parental SES and age of arrival. This MA-thesis findings suggest that, while parents-SES remains a key determinant of educational attainment, the age of arrival does not affect this association.

The absence of a moderation effect contrast with previous literature that have reported a strong negative effect of late arrivals on educational success. For instance, Hermansen (2017) found that immigrant children arriving at later ages had worse socioeconomic outcomes, consequence of less educational attainment and labour market integration. Similarly, Basu (2018) displayed that age of arrival negatively affects educational outcome, with language proficiency mediating this effect (Basu, 2018). However, while these studies display a clear association between the age of arrival and educational outcome, they do not provide evidence of an interaction effect with parental SES, aligning with this thesis' findings.

Further research examined the effect of age of arrival on education using PISA assessment data (Heath & Kilpi-Jakonen, 2012). Their research found that immigrant students arriving at later age underperform in standardized tests. However, this effect was not stronger for children with lower-SES parents (Heath & Kilpi-Jakonen, 2012). Their findings align with the present thesis underlining that while late arrival has a negative effect on educational attainment, this effect is not consistently stronger for children from lower-SES households.

This consistency of the educational disadvantage across the different SES groups suggests that structural and institutional barriers, such as school integration policy or language learning, may have a more significant effect on education than parental SES. In other words, while late arrival may suppose an additional difficulty in adapting to the host country education system, reliance on parental resources does not increase in a way that exacerbates educational inequality.

Therefore, given these results, educational policies should focus on structural interventions that support all late arriving immigrant children, regardless of SES. These policies could include: early and intensive language support programs, especially for children arriving after schooling age (Heath & Kilpi-Jakonen, 2012), stronger school integration initiatives, such as tutoring and teachers training to accommodate diverse cultural background (Basu, 2018), as well as parental programs to help them support their children's academic progress.

This MA thesis offers important contributions. By relying on ESS data, it provides a cross-national perspective on educational inequalities among immigrant students across EU countries while underlining that the direct effect of late arrival on education does not significantly affect the association between parental SES and children's education success. Instead, the difficulties experimented by these children are more associated to broader institutional factors beyond SES variations. Besides, this research focus on interactions and predicted probabilities enhances the analysis of migration related factors potential effect of moderation in the relationship between parental SES and children's educational attainment.

This research also presents some limitations. For instance, the European Social Survey (ESS) does not include the parental income, which restricts comprehensively capturing the parental SES, as it is a crucial dimension reflecting economic resources. The relatively reduced sample size and cross-sectional design limit generalizability of the results and causal inference. Lastly self-reported data displays a potential recall bias such as for the parental occupation at the time when the respondents were adolescents.

Future studies could address these limitations by relying on register-based data that include the income measurement, as well as allowing a longitudinal analysis of the dynamic relationships between parental SES and contextual factors through time. In addition, further research should examine other potential contextual factors' moderating effect, such as language proficiency or number of siblings, as well as peers influence or school quality, on the association between the parental SES and children's educational attainment.

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