



The Education of Gender The Gender of Education Sociological Research in Italy

Maddalena Colombo
Luca Salmieri

The Education of Gender. The Gender of Education
Sociological Research in Italy

The Education of Gender The Gender of Education

Sociological Research in Italy

Maddalena Colombo
Luca Salmieri

Page intentionally left blank

Published by

ASSOCIAZIONE "PER SCUOLA DEMOCRATICA"

Via Francesco Satolli, 30

00165 – Rome

Italy



Published in Open Access

APA citation system:

Colombo, M., Salmieri, L, (2020), The Education of Gender. The Gender of Education. Sociological Research in Italy, Rome, Associazione "Per Scuola Democratica"

This book is digitally available at:

<https://tinyurl.com/ScuolaDemocraticaOpenAccess>

and

<https://www.ais-sociologia.it/?p=4096>

ISBN 978-88-944888-3-8

Published by



ASSOCIAZIONE "PER SCUOLA DEMOCRATICA"

This volume includes contributions from authors who participated in the panel "**Gender and Learning. New Cognitive, Didactic, and Educational Challenges. Teaching, Learning, and Future Scenarios**" held at the AIS - Italian Association of Sociology - XII National Congress, 2020 January 23-25, University of Naples, Federico II.

Under the coordination of:



ASSOCIAZIONE ITALIANA DI SOCIOLOGIA
Sociologia dell'Educazione
and
Studi di genere

ISBN 978-88-944888-3-8

2020 november, edition in open access
2020 by Associazione "Per Scuola Democratica" Rome

Graphics by Ansaldi

ISBN - 978-88-944888-3-8

CONTENTS

1	Gender and Education in Italy <i>Maddalena Colombo, Luca Salmieri</i>	7
2	Girls and Boys at School Do Gender Differences Still Matter? <i>Fabio Corbisiero, Antonella Berritto</i>	25
3	Female Hegemony among Italian Educational Professionals <i>Maddalena Colombo, Paolo Barabanti</i>	43
4	Gender Differences in Higher Education Choices Italian Girls in the Corner? <i>Marco Romito, Tiziano Gerosa, Martina Visentin, Giulia Maria Cavaletto</i>	61
5	Gender Differences in Tertiary Educational Attainment and the Intergenerational Transmission of Cultural Capital in Italy <i>Luca Salmieri, Orazio Giancola</i>	77
6	Gender, Social Origins, and Educational Choices How it really works <i>Orazio Giancola, Simona Colarusso</i>	95
7	Computer Skills and Employment A Comparative Gender Study <i>Sara Binassi, Claudia Girotti</i>	111
8	Coding and Educational Robotics Gender Stereotypes and Training Opportunities <i>Daniela Bagattini, Beatrice Miotti, Valentina Pedani</i>	129
9	Gender Gaps in Financial Education The Italian Case <i>Luca Salmieri, Emanuela E. Rinaldi</i>	141
10	Contradictions and Critical Limitations of the Gender Category in the Use of OECD-PISA Datasets <i>Marialuisa Villani, Chiara Carbone</i>	169
11	Reading Networks through “Gender Lenses” Scientific Collaborations at the University of Naples, Federico II <i>Ilaria Marotta</i>	183
	Notes on contributors	201

Page intentionally left blank

6
***Gender, Social Origins, and
Educational Choices: How it really
works***

Orazio Giancola and Simona Colarusso

1. AIMS AND LITERATURE REVIEW

This study analyses how parents' socio-economic and cultural status influence students' choice of secondary schooling track, according to gender differences and their interaction with social class effects (Cabrera et al. 2015). The way parents affect their children's education is a crucial aspect of the social construction of individual educational trajectories. Education is a process that proceeds in stages, and early educational career decisions have a profound effect on the choices available at later stages (Dustmann, 2004). Some analyses have focused on ascriptive factors such as gender, migratory background or the socio-economic and cultural position of the students' family (Lucas, Beresford, 2010). Other studies have focused on the role played by the structure of educational systems itself ("school tracking" as a macro variable of *institutional differentiation*, see Benadusi, Giancola, 2014). In these studies, researchers focus in particular on analysing educational choices in relation to the mix of social statuses within the school tracks, the overall social composition of individual schools and, finally, the combination of these two dimensions (Giancola, Salmieri, 2020). A further line of inquiry has investigated the connection between parents' preferences and their children's educational choices, especially preferences regarding the reputation and quality of schools. The fact that students' educational success is so closely linked to the quality of education they receive has fuelled a rich tradition of studies and research aimed at investigating the mechanisms through which educational choices are constructed (Rosenbaum, 1976).

Whatever the interpretative framework adopted, the decision of which educational path children should pursue has far-reaching consequences that extend into their adult life, and particularly so in countries with a strong tracking system such as Italy (Giancola, 2009; De Vita, Giancola, 2017). The literature shows that a child's future social and economic situation thus depends in large part on an appropriate school track choice

(Schnabel et al., 2002). Classic findings (Coleman, 1987; 1988) demonstrate that parental background, as a compound measure of parents' education, work and investment in their children, has been and still is one of the most important factors determining children's educational attainment (Heineck, Riphahn, 2007 in Germany and Ermisch, Francesconi, 2001 in UK). At the same time, however, educational decisions might be considered an investment with uncertain outcomes and, as such, would be subject to individuals' risk preferences.

The interpretative model outlined by Bourdieu (1972) indicates some of the family characteristics transmitted by parents to children, such as distinctive cultural elements. Such transmission, he argues, plays an important role in the construction of school pathways and educational choices.

The choice of what school to attend (referred to as "school choice") is linked to "distinctive" elements such as social recognition, reputation, and the socio-economic composition of the school population (both students and their parents). More specifically, family cultural capital seems to have a two-fold effect. Bourdieu suggests that first, direct effect influences the student's school career and the second, indirect effect conditions the individual's construction of his or her professional aspirations in a stable trend regardless of personal skills (Dupriez et al., 2012). These trends are clearly visible in the Italian case as well. The distribution of choices between general (*licei*) or technical/vocational school tracks tends to reproduce social stratification, with the higher social classes "choosing" general high schools and mainly the lower classes vocational "choosing" vocational ones (Azzolini, Vergolini, 2014).

However, such evidence can also be explained through the model proposed by Boudon (Stocké, 2007). According to this model, students' propensity for a certain school or school track is the result of a cost-benefit calculation weighing the future pay-off of the education received. This interpretation seems to be confirmed by the theory of "relative risk aversion" (RRA), according to which students opt for vocational training out of a desire to ensure they achieve at least the same employment positions as their parents and avoid any slide into downward educational and social mobility (Breen, Goldthorpe, 1997; Becker, 2003; Breen, Yaish, 2003).

From a procedural point of view, we do not opt for an *a priori* theoretical choice in developing this chapter. Rather, we outline the research results step by step, using the interpretative approaches or "theoretical segments" which seem more useful for interpreting the empirical evidence in question.

2. DATA, METHODS AND HYPOTHESES

The OECD-PISA 2018 survey aims to provide a standardized metric for comparing several areas of competence over time and space. Until a few years ago, school success meant success in terms of students' school

careers, that is, the probability of their obtaining a certain certificate or degree or avoiding a premature exit from the educational system (Giancola, Viteritti, 2014). Thanks to the emergence and diffusion of comparative international studies, we can now broaden our attention to how students perform in terms not of formal careers but of “learning”, that is, the knowledge and skills they actually acquire. Furthermore, the informative wealth of the datasets produced by the OECD-PISA makes it possible to consider a much larger number of independent variables that are useful for interpreting the differences in result. In this research, in fact, we take into consideration not measured skills but ascriptive elements: gender, family background – synthesized here by the ESCS index¹ – migration background, regulations – the subdivision of the educational system into differentiated school tracks (Benadusi, Giancola, 2014), and information from the questionnaire addressed to the parents of students participating in the survey. For our specific cognitive purposes, we use a rich question (Table 6) relating to the motivations that conditioned the parents’ choice of the school their children attend.

In the first phase, our goal is to analyse and make evident the network of relationships that links social origin, gender and educational choices. To achieve this objective, we turn to several descriptive analyses based on multivariate models for categorical variables (multinomial logistic regression), including a model that takes into account the interaction effects between independent variables (Brock, Durlauf, 2003).

Subsequently, we investigate the relationship between the motivations expressed by students’ parents, and choice of school. Starting from a descriptive analysis of parents’ answers, we perform a synthesis of the data through a principal component analysis (Di Franco, Marradi, 2013) to then analyse the direction and strength of the relationship between parental motivations and their sons and daughters’ mix of gender and social class type. Our hypothesis is that families are accustomed to investing in a diversified way in their children’s education whether the students are girls or boys.

3. THE CHOICE OF SCHOOL TRACK: HOW SOCIAL CLASS AND GENDER PLAY TOGETHER

The sociological literature on educational choices clearly shows that, in the face of institutional differentiation in the upper secondary education system, students’ social origins play a fundamental role in determining school choice. Basically, highly stratified educational systems are those in which differences based on social origin are then reflected in disparate performance (thus constituting “institutionalized” differences), educational expectations, and employment expectations in adulthood.

¹ As a synthetic measure of social origins, the OECD PISA survey produces the ESCS index (Index of Economic, Social and Cultural Status) that synthetically defines the socio-economic and cultural status of the students’ families.

Students' choices between general or vocational tracks tend to be distributed in a way that replicates social stratification, with general tracks usually preferred by the higher social classes and vocational ones chosen more often by the lower classes (Azzolini, Vergolini, 2014). The smaller share of children from the lower classes choosing a general track reflects a process in which students' individual choices are adapted to fit the educational and employment models found in their families of origin. In practice, a school path considered less immediately utilisable on the labour market is considered a riskier choice and children display an aversion to risk by preferring instead the more professional tracks.

This interpretation is confirmed by the theory of relative risk aversion (Breen, Goldthorpe, 1997; Breen, Yaish, 2003) according to which students' choice of vocational training is guided by a desire to ensure they avoid downward social mobility by achieving at least the same levels of employment as their parents. There is considerable evidence showing a greater female propensity for study (at the tertiary level in particular), due to both intrinsic motivation and rational calculation in that girls know they will face greater disadvantage in labour market competition without such educational investment. In a stratified school system (such as the Italian one), therefore, students' social origins will tend to push children of the socio-economic and culturally advantaged classes towards the most prestigious school tracks. In addition, since the most prestigious school tracks are a prelude to university studies and given that girls tend to continue their studies more frequently than boys, they will tend to enrol in school tracks that better prepare them for higher-level studies.

Tables 1 and 2 clearly indicate a significant and strong association between students' socio-economic and cultural background of origin (which for simplicity we will call "social class", measured by the ESCS Index) and school track choice at the upper secondary level.

TABLE 1. *Track choice by socio-economic and cultural background (in %)*

STF Study Prog.	ESCS_CAT				Total
	Low	Medium-Low	Medium-High	High	
Istituti Professionali	29.4	16.5	11.8	4.3	15.5
Istituti Tecnici	39.8	35.8	28.6	20.8	31.2
Licei	30.8	47.7	59.6	74.9	53.2
Total	100.0	100.0	100.0	100.0	100.0

Source: processing of OECD-PISA data

TABLE 2. *Track choice according to gender (in %)*

STF Study Prog.	STF Gender (F=1; M=2)		Total
	A	B	
Istituti Professionali	15.4	15.4	15.4
Istituti Tecnici	18.9	43.5	31.5
Licei	65.7	41.1	53.1
Total	100.0	100.0	100.0

Source: processing of OECD-PISA data

The data show that family socio-economic and cultural background is linked to the propensity to enrol in the most historically prestigious educational institutions (*licei*). If we consider the opposite two poles of the ESCS categories, we can see that children from the upper classes tend to attend the *liceo* school track while students with lower social origins

mainly attended professional and technical school tracks (indicated here as *istituti Professionali* and *istituti Tecnici*). Obviously, this relationship is tendential. However, it should be noted that the trend is strong and evident, and that other sources show it is also stable over time (Giancola, Salmieri, 2019; 2020). Equally strong and significant is the greater tendency of girls, as compared to boys, to attend the *liceo* school track for the reasons outlined above.

A highly noteworthy point is the relationship between social origins and choice of school track for male and female students. For both male and female students, the relationship between social origin and track choice is equally strong. The distance, in percentage points, between the highest and lowest class of those who enrolled in the *liceo* track is practically the same between males and females (46% for women and 48% for men). That is, it is the size effect that changes, in that girls with low social origins who attend *liceo* account for 43.6% while the share of boys doing the same drops to 18.1% (in the interests of completeness, it should be noted that boys from lower social classes attend mainly technical schools). These initial findings already provide us with clues regarding boys' and girls' differential investment in education. As we will see in section 4, however, this result is closely connected to the differential investment that parents make for girls as compared to that made for boys.

TABLE 3. *Track choice by Socio-Economic and Cultural Background, controlled for gender (in %)*

		ESCS_CAT				Total
		Low	Medium-Low	Medium-High	High	
Female	Istituti Professionali	31.4	15.7	10.7	3.3	15.5
	Istituti Tecnici	25.0	22.5	15.6	11.5	18.8
	Licei	43.6	61.8	73.7	85.2	65.7
	Total	100.0	100.0	100.0	100.0	100.0
Male	Istituti Professionali	27.5	17.3	12.9	5.1	15.5
	Istituti Tecnici	54.4	49.4	41.8	28.6	43.2
	Licei	18.1	33.3	45.2	66.3	41.3
	Total	100.0	100.0	100.0	100.0	100.0
Total	Istituti Professionali	29.4	16.5	11.8	4.3	15.5
	Istituti Tecnici	39.8	35.8	28.6	20.8	31.2
	Licei	30.8	47.7	59.6	74.9	53.2
	Total	100.0	100.0	100.0	100.0	100.0

Source: processing of OECD-PISA data

To further quantify this relationship, we opted to use a multinomial logistic regression model. In this model, the dependent variable is school track choice, assuming gender (female vs male), migratory background (second and first generation vs native students), and social class (expressed in terms of ESCS index, recoded into four categories) as the independent variables. The model clearly shows girls' higher probability (in terms of odds ratio, see Exp(B) in Table 4) of attending the general *liceo* track rather than technical or professional schools. On the other hand, migratory background seems to intensely penalize students from the first generation and, to a slightly lesser extent, also disadvantages students with a second generation background as compared to native ones. This latter finding has already been thoroughly documented in the empirical

literature (Giancola, Salmieri, 2018). As expected, social origin (captured via the ESCS index) has a very substantial impact in terms of increasing the student’s chances of attending *liceo* rather than a vocational school. Nevertheless, the most interesting point is that Exp (B) coefficients do not gradually increase. With respect to the probability of attending *liceo*, there is a wide gap between students with medium-high ESCS level as compared to students with a high ESCS level. On the basis of this finding, it can be asserted that not only does social origin have a strong effect but also that this effect does not grow linearly; instead, it gives rise to a strong differential outcome (with an equally strong relative advantage) at its highest level.

TABLE 4. *Determinants of school track choice (multinomial logistic regression)*

	B	Standard error	Sign.	Exp(B)	95% confidence interval for Exp (B)	
					Lower bound	Upper bound
Istituti Tecnici	Intercept	,745	,009	,000		
	Female	-,762	,010	,000	,467	,475
	ESCS High	1,057	,017	,000	2,877	2,976
	ESCS Medium-High	,463	,013	,000	1,589	1,629
	ESCS Medium-Low	,420	,011	,000	1,522	1,556
	IMMIG=Second-Generation	-,250	,017	,000	,779	,805
	IMMIG=First-Generation	-,538	,019	,000	,584	,606
Licei	Intercept	-,187	,010	,000		
	Female	,695	,009	,000	2,004	2,041
	ESCS High	2,785	,017	,000	16,198	16,738
	ESCS Medium-High	1,517	,012	,000	4,560	4,671
	ESCS Medium-Low	,995	,011	,000	2,704	2,766
	IMMIG=Second-Generation	-,741	,018	,000	,477	,494
	IMMIG=First-Generation	-1,010	,019	,000	,364	,378

Although this analysis is already rich, it can be further refined to observe in more detail the effect of interaction between gender and social origin. Indeed, the model presented above illustrates the net effects of the individual variables but not their interaction. In a regression equation, an interaction effect is represented as the product of two or more independent variables (Brock, Durlauf, 2003; Hilbe, 2009). For example, here is a typical regression equation *without* interaction:

$$\hat{y} = b_0 + b_1X_1 + b_2X_2$$

where \hat{y} is the predicted value of a dependent variable, X_1 and X_2 are independent variables, and b_0 , b_1 , and b_2 are regression coefficients. Here is the same regression equation *with* an interaction:

$$\hat{y} = b_0 + b_1X_1 + b_2X_2 + b_3X_1X_2$$

Here, b_3 is a regression coefficient and X_1X_2 is the interaction. The interaction between X_1 and X_2 is called a «two-way interaction» because two independent variables are interacting.

In the model we present here below, therefore, instead of taking gender and social origin as single regressors (albeit transformed into dummy variables), we use the typological crossings of gender and social origin as independent variables² to illustrate the differential mechanisms underlying different school track choices.

TABLE 5. *Determinants of school track choice (multinomial logistic regression with interaction effect)*

	B	Standard error	Sign.	Exp(B)	95% confidence interval for Exp (B)		
					Lower bound	Upper bound	
Istituti Tecnici	Intercept	,422	,008	,000			
	Second-Generation	-,239	,017	,000	,788	,762	,814
	First-Generation	-,576	,018	,000	,562	,542	,583
	Male with High ESCS	1,290	,020	,000	3,634	3,492	3,782
	Male with Medium-High ESCS	,819	,015	,000	2,269	2,203	2,338
	Male with Medium-Low ESCS	,718	,014	,000	2,051	1,996	2,107
	Female with High ESCS	,865	,028	,000	2,375	2,246	2,511
	Female with Medium-High ESCS	-,032	,018	,076	,969	,936	1,003
	Female with Medium-Low ESCS	,021	,015	,163	1,022	,991	1,053
	Licei	Intercept	,232	,008	,000		
IMMIG=Second-Generation		-,744	,018	,000	,475	,459	,492
IMMIG=First-Generation		-,994	,019	,000	,370	,356	,385
Male with High ESCS		2,354	,020	,000	10,527	10,128	10,943
Male with Medium-High ESCS		1,113	,015	,000	3,043	2,953	3,136
Male with Medium-Low ESCS		,573	,015	,000	1,774	1,723	1,825
Female with High ESCS		3,105	,026	,000	22,316	21,209	23,481
Female with Medium-High ESCS		1,775	,015	,000	5,898	5,722	6,080
Female with Medium-Low ESCS		1,280	,014	,000	3,597	3,500	3,697

Source: processing of OECD-PISA data

This formulation of the multinomial logistic regression model shows very clearly the strong relative advantage of girls and boys from high social classes in attending a *liceo* school; given the same background, however, the odds for girls are more than double those for boys. Again, both boys and girls display non-linear growth but with a strong advantage for those coming from higher social classes. The emerging social dynamic is the same for boys and girls, but what discriminates the latter from the former

² The dummy variables are constructed as follows: women with “high”, “medium-high”, “medium-low social” origin *vs* women with “low” social origin; men with “high”, “medium-high”, “medium-low” social origin *vs* men with “low” social origin.

is the intensity of the effect induced and produced by social origins. The probability of attending a technical rather than a professional school is higher among boys with high social origins. In this case, however, boys are more likely than girls to choose vocational tracks (perhaps because they aspire less to university post-school study and are more oriented towards a school track that allows them to both attend university and enter the world of work directly after graduation). Once again, the results show the relative disadvantage of students with a migrant background in terms of their likelihood of enrolling in a *liceo*, thus illustrating a further element of inequity in the Italian education system.

4. SCHOOL CHOICE: THE HYPOTHESIS OF DIFFERENTIATED PARENTAL INVESTMENT

As mentioned above, the parent questionnaire of PISA 2018 includes an articulated demand question the possible replies to which are organized along a Likert scale. This question is designed to investigate the reasons behind respondents' choices of school for their children. The question poses a set of items related to the general statement "importance for choosing a school", with a wide variety of reasons that justify (*ex post*, therefore entailing a considerable distortion effect) the choice that has been made. In Table 6 we have listed the items comprising the Likert battery, in order of importance as attributed by parents.

TABLE 6. *Factors that parent declare to be important in choosing a school*

Importance for choosing a school	Not important	Somewhat important	Important	Very important
There is a safe school environment	1.6	10.0	36.0	52.3
The school has an active and pleasant school climate	3.0	17.3	44.9	34.8
The school has a good reputation	3.4	17.0	41.8	37.8
The school has a focus on foreign language instruction	6.3	16.7	37.6	39.5
The school offers particular courses or school subjects	8.3	19.5	48.9	23.4
The academic achievements of students in the school are high	9.5	23.4	45.0	22.1
The school offers exchange programmes with schools in other countries	20.3	23.5	35.1	21.1
The school has an international student body	42.0	24.5	23.6	9.9
Expenses are low (e.g. tuition, books, room and board)	42.5	26.0	22.7	8.8
The school is at a short distance to home	37.7	31.3	21.4	9.6
The school has a particular approach to "pedagogy/didactics"	45.7	23.5	24.0	6.9
Other family members attended the school	67.0	10.8	14.5	7.7
The school adheres to a particular "religious philosophy"	63.8	14.5	16.6	5.0

Source: processing of OECD-PISA data

The aspects that appear to be of greatest motivational importance are related to «a safe school environment» and good school climate but also a reputational criterion typical of the quasi-market school. These are followed by aspects concerning the curricular subjects offered by the school and the level of student learning (literally “academic achievements of students”). Criteria based on philosophical, pedagogical or religious aspects are placed at the end of the ranking. Even lower in the ranking is the item relating to school expenses. This last consideration ranks so low because enrolment costs are very low the Italian school system, whereas indirect costs (books and school materials, transport and travel, etc., elements which are not taken into account in the questionnaire) are particularly high.

To effectively synthesize the items and make a comparison between the motivations expressed by parents with respect to choosing a school for their sons and daughters, we conducted a PCA (optimized with a Varimax orthogonal rotation³). The result is satisfactory (see Table 7 and Figure 1) in that three components emerge, with a cumulative explained variance equal to 50.5% of the initial variance (the first component has a variance of 29.1%, the second approximately 12%, the third 9.3 %).

TABLE 7. *Principal Component Analysis (variance explained by the components)*

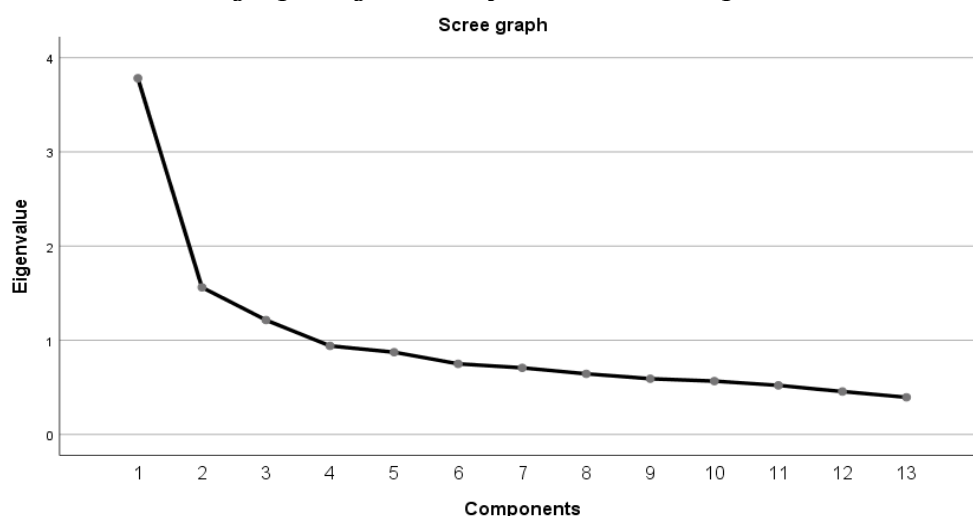
Component	Total	Initial eigenvalues	
		% of variance	% cumulative
1	3,781	29.088	29.088
2	1,562	12.014	41.102
3	1,214	9.340	50.441
4	,940	7.230	57.671
5	,873	6.715	64.386
6	,750	5.766	70.152
7	,707	5.441	75.593
8	,644	4.951	80.544
9	,592	4.552	85.096
10	,566	4.357	89.453
11	,521	4.008	93.461
12	,455	3.504	96.965
13	,395	3.035	100.000

Source: processing of OECD-PISA data

On the semantic level, the extracted components effectively synthesize three different dimensions. The first two components are more clearly interpretable, in part due to a trivial matter of the statistical calculation of the maximization of variance; the third component appears slightly more composite but still of significant interest in relation to the research hypotheses.

³ Varimax rotation is a statistical technique used an attempt to clarify the relationship among factors. Generally, the process involves adjusting the coordinates of data that result from a principal components analysis. The varimax rotation simplifies the loadings of items by removing the middle ground and more specifically identifying the factor upon which data load (Allen, 2017)

FIGURE 1. Scree graph (eigenvalues for extracted components)



Source: processing of OECD-PISA data

By analysing the relationship between the original items and the extracted components (Table 8), it is possible to progress to a semantic interpretation of the components.

TABLE 8. Rotated component matrix

	Components		
	1	2	3
There is a safe school environment	0,767	0,145	0,027
The school has an active and pleasant school climate	0,758	0,106	0,1
The school has a good reputation	0,718	-0,032	0,147
The academic achievements of students in the school are high	0,631	0,25	0,143
The school offers particular courses or school subjects	0,476	0,307	0,109
The school has a focus on foreign language instruction	0,436	0,634	0,017
The school offers exchange programmes with schools in other countries	0,215	0,81	0,014
The school is at a short distance to home	0,161	-0,149	0,57
Expenses are low (e.g. tuition, books, room and board)	0,156	0,097	0,652
The school has a particular approach to “pedagogy/didactics”	0,139	0,356	0,492
The school adheres to a particular “religious philosophy”	0,068	0,142	0,646
The school has an international student body.	0,018	0,736	0,299
Other family members attended the school.	-0,027	0,117	0,629

Source: processing of OECD-PISA data. Rotation method: Varimax with Kaiser normalization.

The first component is clearly linked to the latent dimension of how much attention parents grant to the "Quality and reputation" of schools. The second component summarizes the dimension of teaching, with a view to internationalizing both the curriculum and the teaching staff (as well as study opportunities abroad). This component therefore belongs to the latent dimension of “internationalization”. The third and final component sums up multiple aspects: the school’s proximity to the family home, the family’s relationship with the school in terms of past alumni (the school

having been attended by other members of the student’s family). Alongside these aspects, there is also parents’ appreciation for an educational focus on specific pedagogies or the religious dimension of teaching. As a whole, this component therefore refers to the dimension of familiarity and closeness (both cultural and physical).

To understand what kind of link exists between the typological combination of gender and social origin and parental motivations behind school choice, we conducted an analysis of the variance (a comparison of the mean values for the categories in relation to each of the three extracted components is reported in Table 9a).

The analysis of the first component shows that the parents of children from the upper classes (both males and females with a high ESCS) pay more attention to “quality and reputation”. Comparing boys and girls, however, we find that the trend of the averages for the classes of this type is monotonic increasing for girls. Both upper-middle and upper-class parents are more attentive to educational context and learning opportunities for girls than they are for boys. This result is even more evident when we consider the component of school internationalization. Parents pay greater attention to this dimension when choosing schools for daughters than in the previous case (the difference between the averages is fully significant).

When the component related to “familiarity and closeness” is considered, the data show an inversion of the trend. In this case, families with a higher social background seem to be decidedly less interested in these dimensions. Quite the opposite, these dimensions seem to be more relevant for school choice among parents and children from lower classes. This result is more pronounced for boys than it is for girls.

TABLE 9a. ANOVA on components by type category (gender and social class)

	Quality and reputation	Internationalization	Familiarity and closeness (cultural and physical)
Male with Low ESCS	-0,11446	-0,13854	0,387806
Male with Medium-Low ESCS	-0,01316	-0,05258	0,149136
Male with Medium-High ESCS	-0,01477	-0,01317	-0,0956
Male with High ESCS	0,121154	-0,03673	-0,19663
Female with Low ESCS	-0,23563	-0,01244	0,153106
Female with Medium-Low ESCS	-0,02408	0,069136	-0,03194
Female with Medium-High ESCS	0,017745	0,064281	-0,08323
Female with High ESCS	0,229597	0,084128	-0,19733
Total	0,002375	-0,00139	-0,00328

Source: processing of OECD-PISA data.

To conclude, we replicated the comparison between the mean values of the variable relative to institutional differentiation, and school track (Table 9b). This comparison clearly shows that parents pay much more attention to “quality and reputation” and “internationalization” for students attending the “general” track (*licei*). On the contrary, parents of students attending technical and professional schools pay closer attention to “familiarity and closeness”. Obviously, we must not forget that the

choice of school track depends a great deal on ascriptive factors, including and above all the mix of gender and social class (as shown by the logit coefficients and odds ratios in Table 5).

TABLE 9b. ANOVA on components by school track

	Quality and reputation	Internationalization	Familiarity and closeness (cultural and physical)
Istituti Professionali	-0,33811	-0,01609	0,307521
Istituti Tecnici	-0,07029	-0,03564	0,051842
Licei	0,116351	0,022699	-0,0994

Source: processing of OECD-PISA data.

These data seem to support the hypothesis that parents make a differential degree of investment, not only by social class but also by gender. These two dimensions (family background and gender) do not operate autonomously; rather, they appear to be linked both in school track choice and in the selection of a specific educational institute.

5. SOME CONCLUSIVE REMARKS

The objective of this research was to analyse and highlight the network of relationships linking social origin, gender and educational choices. To achieve this goal, descriptive examinations were carried out (see section 3), based on multivariate models for categorical variables (multinomial logistic regression, see Table 4), also referring to a model that holds account of the effects of interaction between independent variables (see Table 5). Furthermore, the relationship between the motivations expressed by parents regarding the choice of the school was taken into consideration, through the PISA 2018 parents' questionnaire, in which there is a question aimed at investigating the reasons behind this choice (see section 4). In the analysis, a distinction was made between sons and daughters in order to observe significant differences. Finally, the data was summarized through an analysis of the main components (see Table 7), which led to outlining a differential investment based on the social class of origin and students' gender.

Class origins play a key role in determining how students and families choose a school. A significant association was observed between students' socio-economic and cultural background (measured via the ESCS index) and school choices at the upper secondary level. Students from higher classes tend to choose and attend "general" schools (*licei*), while students from lower social classes attend mainly professional and technical schools. These results clearly indicate that the higher the level of family background, the higher the likeliness children will enrol in more prestigious fields of study.

By focusing on the relationship between social origins and school-choice controlled for gender, we observed that girls with both higher and lower social origins attend *licei* more frequently than boys. This result is

to be considered an initial empirical confirmation of the hypothesis that parents' educational investment in their children differs according to the students' gender. To confirm and further quantify this relationship, a multinomial logistic regression model was used. This model clearly showed that girls are more likely to attend *licei* than technical or vocational schools. In addition, another important finding emerged from the model: as compared to native students, migration background seems to penalize foreign students from the first generation most intensely and students from the second generation to a slightly lesser extent, thus revealing another, deep-seated form of inequality in the Italian education system.

Additionally, using a more complex model highlighting interaction effects between gender and social class, we noticed that, within same social class, girls' chances of attending the most prestigious track are clearly greater than those of boys. The model also shows that, for both male and female students, the effect of social class does not grow linearly; rather, it is much stronger for the sons and daughters of high social status parents than for their peers with medium-high status parents (these latter do enjoy a relative advantage, but it is not as strong as for the former). The social dynamic is similar regardless of gender. The real difference in terms of gender lies in the intensity of the effect induced and produced by social origin.

Finally, after synthesising the data via PCA, three macro dimensions stand out in terms of the reasons parents give for choosing schools for their children (see Tables 7 and 8). The most remarkable dimension is that of the "Quality and reputation" of the schools being chosen; the second dimension concerns "Internationalization" and the last one "Familiarity and closeness", conceived as cultural and physical proximity. Through an analysis of variance, we found that families from the higher and middle classes appear to be more attentive to educational contexts and learning opportunities, but – in the same status category – families show greater interest in and concern for these aspects when choosing schools for girls than for boys. These results support the hypothesis that differential investment is at play, differing not only by social class but also by gender. Family background and gender do not operate as two separate dimensions of inequality; rather, they are intermingled in the moment when parents both choose a kind of school for their children and when they select the specific institution.

Finally, it must be underlined that the effect of institutional differentiation (school tracking) is combined with families' preferences on the basis of school reputation, perceived quality and educational focus. Indeed, in a quasi-market regime schools are looking to seize as large as possible a share of new enrolments as well as the most excellent performers.

According to the theory of cumulative inequalities – expressed through the «systematic bias hypothesis» (Giancola, 2009) – the institutional division of schooling into tracks (due explicitly to the design of the Italian educational system) works together with social distinction (an implicit and invisible set of process) to generate a scenario rife with structural inequalities that educational policies are still struggling to address.

REFERENCES

- Allen, M. (2017), *The sage encyclopaedia of communication research methods (Vols. 1-4)*, Thousand Oaks, CA, SAGE Publications
- Azzolini D., Vergolini, L. (2014), «Tracking, inequality and education policy. Looking for a recipe for the Italian case», *Scuola democratica*, 2, [link](#)
- Benadusi, L., Giancola, O. (2014), «Secondary school systems: “comprehensive” versus “selective”. A comparison in terms of equity», *Scuola Democratica*, 2, 461-82 [link](#)
- Breen, R., Goldthorpe, J.H. (1997), «Explaining Educational Differentials. Towards a Formal rational Action Theory», *Rationality and Society*, 9, 275-305 [link](#)
- Breen, R., Yaish, M. (2003), *Testing the Breen-Goldthorpe model of educational decision making*, Oxford, Oxford University Press
- Brock, W. A., Durlauf, S. N. (2003), *Multinomial Choice with Social Interactions*, NBER Technical Working Papers 288, National Bureau of Economic Research, Inc. [link](#)
- Cabrera, L., Betancort, M., Pérez, C. (2015), «Social Class, Family, Gender, And Educational Performance», in E. Ortega (Ed.), *Academic Achievement: Student Attitudes, Social Influences and Gender Differences*, New York, Nova Science Publishers, pp. 1-40 [link](#)
- Coleman, J. S. (1987), «The relation between school and social structure» in M.T. Hallinan (Ed.), *The social organization of schools: New conceptualisation of the learning process*, New York, Plenum, pp. 177–204
- Coleman, J. S. (1988), «Social capital in the creation of human capital», *American Journal of Sociology*, 94, 95–120 [link](#)
- De Vita, L., Giancola, O. (2017), «Between education and employment: women’s trajectories in stem fields», *Polis*, 1, pp. 45-72 [link](#)
- Di Franco, G., Marradi, A. (2013), *Factor Analysis and Principal Component Analysis*, Milan, Franco Angeli
- Dupriez, V., Monseur, C., van Campenhoudt, M., Lafontaine, D.M. (2012), «Social Inequalities of Post-Secondary Educational Aspirations: Influence of Social Background, School Composition and Institutional Context», *European Educational Research Journal*, 11, 4, 504-19 [link](#)
- Dustmann, C. (2004), «Parental background, secondary school track choice, and wages», *Oxford Economic Papers*, 56, 2, 209-30 [link](#)
- Ermisch, J., Francesconi, M. (2001), «Family Matters: Impacts of Family Background on Educational Attainments», *Economica*, 68, 270, 137-56 [link](#)
- Giancola, O. (2009), *Performance e disuguaglianze nei sistemi educativi europei. Un’analisi comparativa degli effetti dei sistemi e delle macro-politiche educative sulle scelte e le carriere scolastiche degli studenti*, Naples, ScriptaWeb
- Giancola, O., Salmieri L., (2018), «Education and the inclusion of immigrants. A cross-national analysis among five European Countries», *Scuola Democratica*, 2, 311-34, [link](#)

- Giancola, O., Salmieri, L. (2020), *Family Background, School-Track and Macro-Area. The Complex Chains of Education Inequalities in Italy*, Working Papers-Dipartimento di Scienze Sociali ed Economiche, 4, 1-22 [link](#)
- Giancola O., Salmieri, L. (2019), «The Complex Chains of Education Inequalities in Italy. Understanding Interplays between Ascriptive and School-Tracks Factors» in *Proceedings of the 1st International Conference of the Journal Scuola Democratica* Vol. II, Rome, Associazione Per Scuola Democratica, 62-69 [link](#)
- Giancola, O., Viteritti, A. (2014), «Distal and Proximal Vision: A Multi-Perspective Research in Sociology of Education», *European Educational Research Journal*, 13, 1, 47–57 [link](#)
- Heineck, G., Riphahn, R. (2007), *Intergenerational Transmission of Educational Attainment in Germany. The Last Five Decades*», IZA Discussion Paper Series, 2985 [link](#)
- Hilbe, J. M. (2009), *Logistic regression models*, Abingdon, Taylor & Francis
- Lucas, S.R., Beresford, L. (2010), «Naming and Classifying: Theory, Evidence, and Equity in Education», *Review of Research in Education*, 34, 25-84 [link](#)
- Rosenbaum, J. E. (1976), *Making Inequality: The Hidden Curriculum of High School Tracking*, New York, Wiley
- Schnabel, K. U., Alfeld, C., Eccles, J. S., Köller, O., Baumert, J. (2002), «Parental influence on students' educational choices in the United States and Germany: Different ramifications—Same effect?», *Journal of Vocational Behavior*, 60, 2, 178-98 [link](#)
- Stocké, V. (2007), *Strength, sources, and temporal development of primary effects of families' social status on secondary school choice*, Sonderforschungsbereich 504, 7-60 [link](#)

The Education of Gender. The Gender of Education Sociological research in Italy

Maddalena Colombo
Luca Salmieri

Published by



ASSOCIAZIONE "PER SCUOLA DEMOCRATICA"

Under the coordination of:



ASSOCIAZIONE ITALIANA DI SOCIOLOGIA
Sociologia dell'Educazione
and
Studi di genere

Chapter 8 - *Coding and Educational Robotics Gender Stereotypes and Training Opportunities* by Daniela Bagattini, Beatrice Miotti and Valentina Pedani – has been drafted under the European Structural and Investment Funds 2014-2020.

National Operational Programme for schools. Competences and learning environments 2014 – 2020. FSE/FESR-2014IT05M2OP001 - Axis 1 – Education. OS/RA 10.2, Project "CODING e ROBOTICA", project code 10.2.7.A2-FSE PON-INDIRE-2017-1, CUP B59B17000000006



Unione Europea

FONDI
STRUTTURALI
EUROPEI

pon
2014-2020



MIUR

PER LA SCUOLA - COMPETENZE E AMBIENTI PER L'APPRENDIMENTO (FSE-FESR)

ISBN 978-88-944888-3-8