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Between Social Origins, Education  
Attained, and Employment**

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# **Education Levels as a Dependent and Independent Variable: An Analysis of the Relationships Between Social Origins, Education Attained, and Employment Outputs in the Italian Case**

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## **Abstract**

This article analyses the impact of social origin on educational attainment levels and examines how these can affect employment status and income. The focus is on the impact of social origin first on the education dimension (in terms of educational qualifications attained) and then on the occupational outcomes (in terms of in/out from the labour market) and income of Italians aged 31-68. These relationships are investigated using Italian data from the European Social Survey for 2016 and 2018. The aim is to isolate the socio-economic background's direct and indirect effects on the dimensions examined and observe how education mediates these impacts. The well-known "OED triangle" (Origin, Education, Destination) is considered to analyse the association between class origins, educational qualifications, and occupational and income outcomes (Blau & Duncan, 1967; Allmendinger, 1989; Budoki & Goldthorpe, 2015; Bernardi & Ballarino, 2016; Hällsten & Yaish, 2022). In line with empirical research, results show that social origin directly impacts educational qualifications. This impact is absorbed by the level of education attained, which then spills directly into access to employment. Although the levels of education attained by the subjects mediate the direct effect of social origin on their position in the labour market, it is impacted by a socio-economic background equally directly.

*JEL codes:* I20; I21; J24; J62; C42

*Keywords:* Educational Attainment; Social Origin; Occupational Outcomes; Inequalities; ESS

## **1. Introduction**

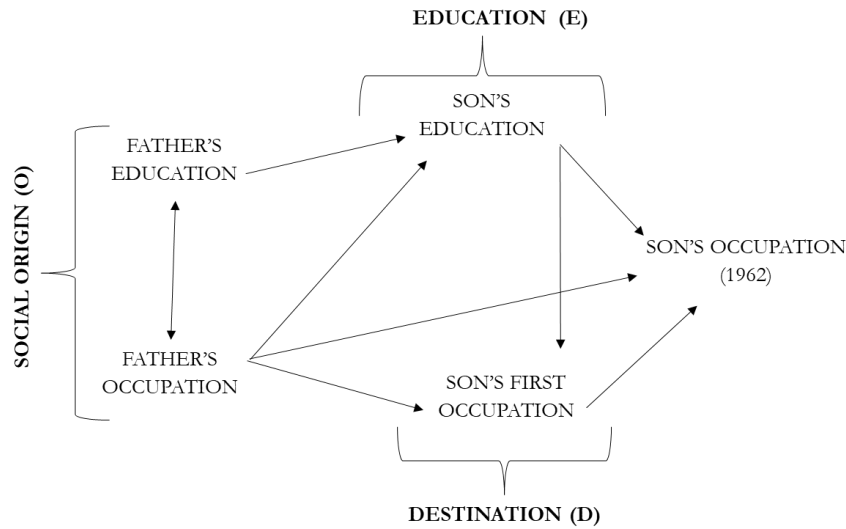
Since the 1960s, many institutional reforms have pushed education systems towards overall socio-economic growth and promoted aggregate individual productivity through human capital accumulation. Literature has widely recognised the hypothesis that education can generate visible benefits both in increasing individual incomes and employment opportunities, but also in satisfying basic individual needs, improving quality of life, and reducing poverty (Streeten, 1994; Sen, 1999; Tilak, 2002; Campbell, 2006; Solga, 2014). In Italy, in the current context, students are set as part of a system that guarantees equity of access. Despite this, factors of ascription and social origin (O) continue to exert a powerful influence on individual paths (in terms of educational and career choices) and performance (in terms of skills and expectations in education) (E).

This affects, in turn, future position in the labour market (D) and society at large (Checchi & Ballarino, 2006; Schizzerotto & Barone, 2006; Ballarino et al., 2016; Pensiero et al., 2019; Giancola & Salmieri, 2020, 2021a). Together with exogenous and endogenous variables, these factors have led to growing inequality by pitting 'privileged paths' against 'disadvantaged' ones and produced educational poverty, i.e., low schooling and low competencies. It has been shown that the need for medium and high educational qualifications generates gaps in the labour market (Giancola & Salmieri, 2021b).

On the one hand, many Italians need more skills to align with economies based on knowledge, speed, and innovation (Pratesi et al., 2021). On the other, the growth of higher educated people and the inability of the Italian labour market to absorb highly educated individuals has led to a mismatch between supply and demand, generating overeducation (Collins, 2011) and limited social mobility (Cobalti & Ballarino, 2003). Indeed, the chances of a student from a lower social class graduating from university have increased in absolute terms. In addition, achieving higher qualifications offers a greater chance of accessing and succeeding in the labour market. However, social origin continues to predict success in education and the labour market strongly. The share of university graduates who achieve the highest positions in the labour market decreases from upper to lower parents' social class. Thus, social origin is a discriminating factor that conditions both the educational status and the occupational position achieved (Zella, 2010; Barone & Guetto, 2016).

## 2. Theoretical Framework and Aims

The study of the impact of social origin on the position attained by individuals in social stratification is now part of a broad literature on social mobility that has systematised a simplified version of the status attainment model proposed by Blau and Duncan (1967), known as the OED triangle. As seen in Figure 1, social origin, education, and life destinies represent the crucial processes underlying the intergenerational reproduction of inequality. According to the model, an individual's social position is influenced by the father's status and education, conditioned by the social class to which they belong (Meraviglia, 2017). The relationship between social origin (O) and social position (D) can be broken down into three processes. The first, OE, represents the association between social origin and education (E). The second, ED, refers to the processes underlying the economic effects of education, i.e., the association between educational level (E) and destination (D), which in the original model refers to social class. Finally, OD represents the direct effect of social origin on the destination class, given the same level of education (Ballarino & Bernardi, 2020).



**FIGURE 1.** *The OED triangle by Blau e Duncan*

Source: Author's elaboration from Blau e Duncan scheme (1967)

Social origin can impact young people by passing on skills, competencies and a specific language code that enables them to succeed in the education system ( $O \rightarrow E$ ). The family of origin influences performance and educational levels achieved, expectations and aspirations that lead individuals to educational choices. It also provides the economic resources needed to invest in education. According to Budoki and Goldthorpe (2015; 2015), this process occurs through class, education, and parental status. Class is related to the direct and indirect costs of investing in education and the economic resources available to the family to deal with these costs. Education and parents' status are a proxy of family cultural level: the ability to transmit a specific habitus (in Bourdieu's terms) responding or not to the expectations of the school system. Similarly, social background affects the employment status achieved ( $O \rightarrow D$ ) both directly and indirectly and in a differentiated way. In the first case, parents influence the position achieved by their children in the labour market by transferring family business, professions, and social clues or by providing social capital and economic resources. In the second, socio-economic background indirectly influences, through its impact on educational qualifications, the individual attained a position in the social stratification ( $E \rightarrow D$ ) in a chaining effect (Ganzeboom et al., 2018). Literature on the topic shows that social origin directly affects employment outcomes (Erikson & Jonsson, 1998) via the transmission of the family business or specific social (Coleman, 1988) and cultural capital (Bourdieu, 1972). Intergenerational transmission of family businesses and liberal professions is robust in Italy (Pellizzari & Fichen, 2013), as is the recourse to familistic networks for acquiring valuable information for job opportunities (Reyneri, 2017). Being the child of a highly educated father increases the wage by at least 20% or more compared to a child whose father has only completed upper secondary education (ISTAT, 2022). Furthermore, families of high social origin seem to be able to build a safety net that protects children from the risk of downward mobility, regardless of educational attainment levels (Ballarino et al., 2016). Even with the same level of education attained, upper-class students

develop greater work expectations than their lower-class peers, generating different occupational aspirations and de facto positions.

Regarding the first two (O on E and E on D), the focus is on analysing the effects of social origin on educational attainment and, on the other hand, on the economic effects of education. Individuals' socio-economic background (O) impact on educational attainment (E) has received growing attention, especially in research on mobility and stratification and among culturalist and rationalist theoretical approaches. Empirical studies on mobility and stratification have revealed how educational credentials being equal, values of affectivity, particularism, and ascription continue to shape individual destinies, influencing their paths and position in the labour market (Granovetter, 1974; Gundelach, 1994) from a perspective of *persistent inequalities* (Shavit & Blossfeld, 1993). The educational expansion (in terms of participation) has placed importance on the possibility of investing in education both as a lift of intergenerational mobility and as a conjunctural tool between educational levels (E) and destinies (D). On the other side, the 1970s theories of conflict (Coleman, 1966; Bourdieu, 1972; Bowles & Gintis, 1976; Collins, 1971), as well as the supporters of the rational approach (Boudon, 1979; Breen & Goldthorpe, 1997; Mare, 1980; Jackson, 2013), have challenged the positive ideology of the allocational paradigm.

In this sense, Pierre Bourdieu's theory of social and cultural reproduction is one of the most prominent attempts to explain the intergenerational persistence of social inequality. Bourdieu (1972) is the first to develop a theory that accounts for the effect of a particular cultural heritage on educational attainment. He argued that the formal education system is a primary process in the persistence of socio-economic inequality. It legitimises the existing social hierarchy by transforming it into an apparent system of talent or merit. It denounces the education system because, through symbolic violence, it reproduces a selection base on the latent cultural criteria of the dominant classes, which excludes those from lower cultural backgrounds. Even when students have achieved high qualifications: choices, attitudes, knowledge, skills, values and, therefore, academic success is shaped through cultural reproduction and by the disposition of a specific resource. These can be economic as well as cultural and social and affect individual educational pathways and social stratification.

On the one hand, recalling the several forms of capital (cultural, economic, social, and symbolic) and the concept of habitus is helpful. The first refers to a set of cultural assets, but also economic and social resources, that the individual possesses and which are inherited from the social class. The second is the set of predispositions and thought patterns (the result of social conditioning) that mediate the individual's choices. In the analysis, reference is mainly made to the socio-economic status of the respondent, recalling Bourdieu's concept of cultural and economic capital.

On the other side, rational choice theorists have inverted Bourdiesian theory through an individualist approach which grants the social actor the rationality to evaluate the most convenient choices through a cost/benefit calculation. The social background is the starting criteria to evaluate risks and opportunities through a rational calculation. It produces direct effects, expressed in the association between socio-economic backgrounds and educational attainment and secondary effects concerning students' career choices (Boudon, 1979; Jackson, 2013). These choices are also conditioned by students' voluntaristic and rational elements: relating to material resources, individual experience, and the construction of expectations and aspirations in decision-making (Boudon, 1979;

Gambetta, 1990). This is directly linked to family status and educational choices, which increase the chances of later access to the labour market (Marzadro & Schizzerotto, 2014).

Considering the theoretical and empirical literature summarised so far, it is assumed that educational success or failure (E) is influenced by specific (O) social origins (socio-economic background) that condition educational performance. In a chaining effect, this may impact employability in terms of in/out of the labour market and low/poor income returns throughout adult life. Then, the general hypothesis is that social origin impacts the level of education attained, affecting an individual's position in the labour market.

The analysis has multiple aims:

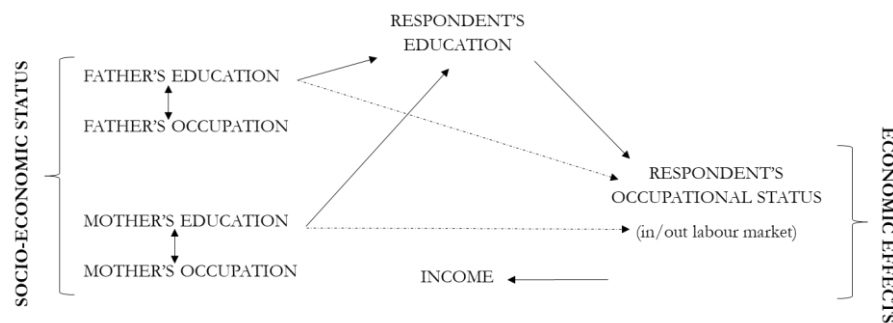
- to observe the impact of social origin on individual education (respondents' education). The focus is on lower educational levels as an indicator of low skills and knowledge;
- to hook the elements that, along with education, affect the dimension of employability (in/out) in Italy over the adult life span for individuals aged between 31 and 68 years;
- Estimate the direct and indirect payoffs of social origin (O) and education (E) on employment status (D) net of social origin and in detail:
  - the impact of social origin (in terms of socio-economic background) on respondents' educational qualifications (education attained);
  - if education, in this case, low educational qualifications, affects access to the labour market and income levels;
  - whether social origin has a direct or indirect effect on experiencing success in the labour market (in terms of access and income) as well as in education, and the latter mediates the impact of social origin;
  - if the investment in tertiary education leads to an advantage in the labour market regarding access and earnings.

### **3. Data and Methods**

The following analyses were carried out on Italian data from the 2016 and 2018 rounds of the European Social Survey (ESS), a cross-national survey that captures attitudes, beliefs, and behavioural patterns of populations in over thirty countries. ESS data also allows for developing crucial indexes based on respondents' socio-economic status, educational qualification, occupational position, and income status. The database provides information on ascriptive and individual variables such as gender, age, and migration background, which help control results and confirm hypotheses. Data from ESS 2016 and 2018 waves were merged to reach a larger sample of cases and minimise the risk of losing statistical power. Therefore, a sample of 5,371 valid cases has been obtained. To focus on respondents' occupational statuses, the sample has been decreased to respondents aged between 31-68 years old (3,213), of whom 49% (1,562) were male and 51% (1,651) female. It is assumed that the age of 31 represents a life moment when at least two of the five essential key-steps for transiting to adulthood should have already occurred: studies completion and



working on a regular basis<sup>1</sup>. According to Italian laws, respondents aged up to 68 years were included since this is the maximum working age before retirement. The sampled population allows to detect individual and ascriptive variables aimed at observing the effect of social origin on educational qualifications ( $O \rightarrow E$ ). In addition, it makes it possible to estimate the collective impact of socio-economic background (social origin) and educational levels on employment status ( $O \rightarrow E \rightarrow D$ ). Specifically, it estimates the correlation between the social origin (O) and occupational outcomes (D) in terms of being or not in the labour market and earnings, on which the database provides information through education (E). For these reasons, it was chosen to adapt the original OED scheme to the research objectives (fig.2).



**FIGURE 2.** *The OED model revisited*

Source: Author's elaboration

Unlike the original, in this model, the variable related to the mother's education and occupation is also included to reflect the actual family's socio-economic status. Furthermore, to analyse the economic effects of education, it should be noted that occupational status (D) does not correspond to the occupational position classified by traditional studies in social mobility. Instead, it refers to being in or out of the labour market and is linked to income. This is because the information collected through ESS data did not allow reconstruction of the respondent's destination class.

Three indicators are considered to catch the dimensions of the labour market: a socio-economic status aggregating respondent parents' education and employment attainment, respondent likelihood to be employed or not, and income expressed in ranges. Individual variables such as gender, age, and native or non-native origins have been included in the sample of working age respondents. Other variables relating to the labour market (respondents' main activity, parent and individual occupation, income) and the level of education attained were considered. To isolate the sub-sample employed, the variable in which respondents state the type of main activity they have carried out in the last seven days was used. In addition, the individual employment variable, coded using ISCO 08 codes, allowed to isolate the category in which the respondent works through a recoding based on the ISTAT classification. The main source of net household income was identified to estimate family income. Finally, variables relating to the respondent's parents' educational level and occupation

have been included to test the assumption concerning the impact of social origin on education ( $O \rightarrow E$ ).

Specifically, respondents' age was divided into four different classes - (31-40, 21.4%); (41-50, 29.3%); (51-60, 29.4%); (61-68, 19.9%) - to observe the diachronic effect over time between respondents' and parents' educational attainments. Respondents' cultural background was detected through the parents' education level when the respondent was 14 years old. The same standard was used to detect occupational status. Respondents' and their parents' educational attainments have been re-classified using the Italian classification scheme: the original variable of the educational qualification distributed in 21 categories<sup>2</sup> (from "No school degree" to "PhD") has been re-classified in four classes<sup>3</sup>.

Respondent's employment status is based on the main activity carried out in the last 7 days from which the following categories were excluded: 2 ("Education") 5 ("Permanently sick or disabled"), 6 ("Retired"), 7 ("Community or military service"). The category 'Retired' has been excluded from the non-employment status since it assumes a conscious choice of an exit from the labour market (even if unintentional). Category 1 ("Paid Work") is taken over to construct a dichotomous variable in/out of the labour market. Such recoding allows to detect whether respondents were in or out of the labour market and use it as the dependent variable in the regression model presented afterwards. The other categories - 3 ("Unemployed, searching for a job"), 4 ("Unemployed, not searching for a job"), and 8 ("Housework, looking after children") - have been included and recoded into "non-employment status. The ISCO 08 occupation variable was incorporated and recoded via the ISTAT occupational classification scheme, then turned into four categories<sup>4</sup>. The variable previously recoded into 'non-employment status' was merged into these categories to develop an employment status that included this dimension. The same procedure was used for the respondent's parents' employment status. Since an ISCO 08 occupation classification is unavailable in this case and due to many mothers out of the labour market (69.4%), the parent's employment status was considered, and the category 3 'not working' was isolated as non-occupational status. Instead, the parent's employment status variable has been used and recoded in four categories<sup>5</sup> to which the non-employment variable was merged. This avoids the potential imbalance because of a missing mother for further analysis.

Starting from the educational level and employment status of parents', a socio-economic status index called ISEI was developed- based on the International Socio-Economic Index of Occupational Status (Treiman et al., 1992; Ganzeboom, 2010). This kind of status is considered equal to the social origin of the respondent. The ISEI has been considered a valuable step forward in the studies of inequalities and social stratification and merges previous statistical measures. It is based on the new international occupation classification standard ISCO-08, which minimises the direct effect of education on income and maximises the indirect and mediated effect of educational qualifications on income via occupational status. Two estimation techniques have been implemented to cover parents' occupational and educational status. A Principal Component Analysis (PCA) and Multiple Correspondence Analysis (MCA) have been run to identify the most effective method of handling respondents' information. Two components stemmed from MCA, the second being unclear and uncondusive to latent information. Therefore, the PCA was privileged (see tab.3-4-5 in the Appendix). From the correlation matrix, both parents'



educational qualifications are correlated with each other. The highest correlation is between the father's employment status and his educational levels, as for the mother's. This states the existence of an appreciable share of variance in common (Di Franco, 2017). Principal component analysis (PCA) also revealed that the single component covers almost 67% of the total variance for all starting variables. The table of commonalities, which shows each variable share of variance generated by the first component, implies that mothers' occupation status has a minor effect in terms of variance reproduced. The variable that most generate variance is the mother's level of education, which, as already highlighted in Ballarino and Panichella (2014), is the factor most significantly affecting child educational outcomes and labour market trajectories later. The PCA produced a regressor which well captures socio-economic status. It can be used in further analyses in a metric or categorical way. About income, the original variable expressed in ten deciles was recoded into five categories<sup>6</sup>. ESS data collection is part of the European Union statistics on income and living conditions anchored in the European Statistical System (ESS). Categories range from 'J' (less than 9,000) to 'H' (more than 54,500). The new nominal categorical recoded variable will be used to detect associations with other variables. The original pseudo-cardinal variable will be used as a metric/continuous variable for the regression models. Finally, new dummy variables have been generated and used for the regression models. To conclude this methodological part, the analysis is characterised being a prototype analysis. It is aimed at developing a prototype to be replicated in future surveys.

## 4. EMPIRICAL ANALYSIS

### 4.1 Descriptive statistics

This section reports on the first-level analyses highlighting the relations between the variables considered. These relations have been assessed via bivariate analyses and estimations, which allows to fulfil the preliminary research goal objectives and the baseline for regression models.

In the sample, respondents with no or low educational qualification (Tab.6-Appendix) are mainly concentrated among the oldest age group (61-68 years old, 17.2%). This group of respondents eventually experienced career paths in the labour market, accessing high-status job positions that did not require medium or high educational credentials. Conversely, most educated respondents are mainly in the 31-40 age group (22.5%). Respondents with no educational qualifications or just a primary school degree make up only 1.3% of the sample. A significant association between educational level and age group is therefore in force. Looking at the distribution of educational levels among age groups and gender (Tab.7-Appendix), female graduates exceed male graduates by about seven percentage points in the youngest age group (31-40). Among respondents over 60, uneducated women outnumber uneducated men by about six percentage points. Those data mirror the expansion of female access to tertiary education over the last decades. Suppose respondents with medium educational qualifications, with the highest concentration of cases, are excluded from the sample. In that case, it can be observed that participation in higher education has expanded over time, leading to an increase in university and high school

graduates, in line with other empirical analyses (Ballarino et al., 2014; Schizzerotto et al., 2018; Svimez, 2020).

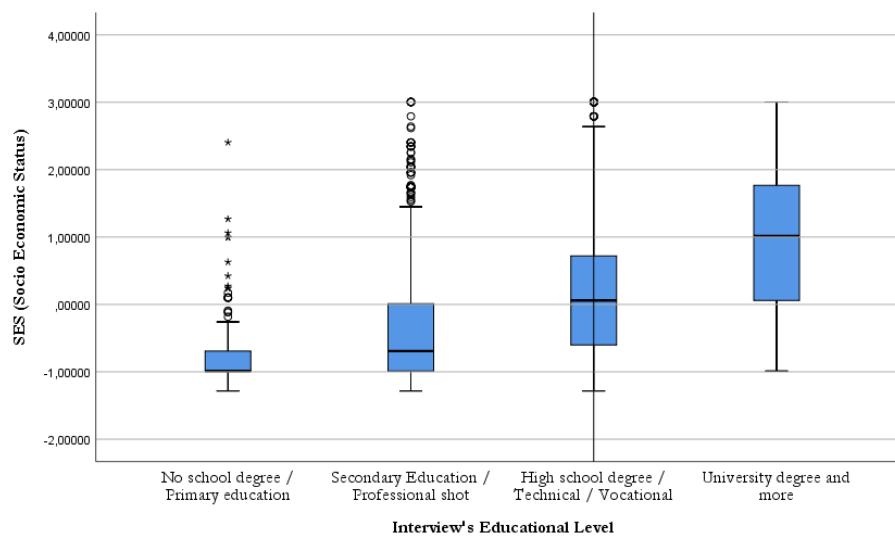
The effect of social origin on educational attainments is shown: as the socio-economic background index increases, so do education levels. A high socio-economic background is likely to lead to more chances of obtaining higher qualifications and advancing in the education process (as it is showed in Table 1)

Interview's Level of Education	Average	N	Std Deviation
No school degree/ Primary Education	-0.823	178	0.255
Secondary Education / Professional shot	-0.598	854	0.473
High school degree / Technical / Vocational	0.002	1,270	0.813
University degree	0.853	435	1.057
<b>Total</b>	-0.104	2,737	0.905

**TABLE 1.** Compare means: ISEI (Socio-economic Index) \* Respondents' Levels of Education. Eta: .564; Eta2: .318; Variance between 713.579; Variance within: 1,526.882; F:425.750; Sign: .000

Source: Author's elaboration from ESS 2016-2018 dataset

The correlation between respondents' socio-economic status and educational levels is displayed in the following graph, showing the variation's amplitude and the distance to outliers. The variability is most significant for upper secondary diplomas and university degrees, with an imbalance of the former downwards. Conversely, results are more compact for individuals who have attained no educational qualification or, at most, primary education and who are allocated to the group with the lowest socio-economic status. This confirms that social origin influences the achievement of higher educational qualifications.



**FIGURE 3.** Box Plot (ISEI Socio-Economic Index \* Interview's Educational Level)

Source: Author's elaboration from ESS 2016-2018 dataset

Looking at the correlations between mothers' and fathers' educational attainments and respondents' and showing the diachronic effect by age group (Tab.8-9-Appendix), one detects that children's education has improved over time compared to parents. However, mothers are less educated than fathers. Parents have experienced the effect of expansion both economically and in terms of education but with different timing by gender. Women had access to the education system much later, but over time they caught up so much that they surpassed the education levels of men, which is still the case today (Sartori, 2006; OECD, 2021). Cross-tabulating mothers' and fathers' education levels and outlining the frequencies of the cells on the diagonal of the co-graduation, parents' educational qualifications result be associated one each other, with a 75% overlap (Tab.10-Appendix). The high contingency coefficient (.690) states that when both maternal and paternal statuses are lower, children will experience a culturally homogeneous family environment. Indeed, social homogamy among parents has been attested by studies conducted in Italy (Bernardi, 2002; Arosio, 2004; D'ambrosio & Pastori, 2017).

Regarding the respondent's employment status, the trends of those excluded/included from the labour market by age group (Tab.11-Appendix) show that the quota of people outside the labour market decreases as age increases. This is also because as age increases, there are more likely to be retired or pre-retired persons. As expected, 71% of those aged between 61 and 68 are unemployed vs 74.4% of the youngest (31-40) in working conditions. The relationship between the two variables is significant, with an associative strength of 0.349.

Being employed is significantly associated with educational levels. The association is confirmed for all age groups. The tails of the levels of education (Tab.12-Appendix) show that among uneducated and lower-educated respondents, 79.2% are unemployed, while among university graduates, only 15.4% are unemployed. It is also noted that as the level of education increases, so does the percentage of those with a high employment status (Tab.13-Appendix). 64% of respondents who are employed in high-level jobs are university graduates. Among university graduates who are employed, only 1.7% fall into low-level jobs compared to 33.3% of employed respondents who have yet to have primary education. Respondents who attained an upper secondary diploma full medium-high and medium-low level jobs, such as routine non-manual and lower grade technical, office and commercial occupations. This evidence suggests that investing in education, especially at tertiary levels, brings advantages to the labour market. The positive association between the two dimensions and a high contingency coefficient (.586) confirms the positive educational returns on employment status for Italy and validates the initial hypothesis.

The sample shows a statistically significant correlation between the average socio-economic background and occupational condition (tab.14-Appendix). Employed respondents have a higher ISEI value (0.065) than unemployed respondents (-0.421). The same effect can be seen by looking at the change in the average ISEI by occupational status (Tab.2 below): ISEI values tend to rise from lower to higher professional statuses, confirming the relation between social origin and the position achieved in the labour market: the higher the former, the higher the latter. Preliminary analyses show that social origin exerts not only a direct effect on educational attainments but also on the achieved

position in the labour market. This preliminary finding is tested via regression models.

Interview's Occupational Status	Average	N	Std. Deviation
Out occ.	-0.471	281	0.670
Low	-0.546	443	0.582
Middle Low	-0.312	759	0.681
Middle High	0.090	713	0.869
High	0.565	479	1.115
<b>Total</b>	-0.103	2,675	0.898

**TABLE 2.** *Compare Means: ISEI (Socio-economic Index) \* Interview's Occupational Status; Eta: .430; Eta2: .185; Anova between: 398.648; Anova within: 1,758.520; F: 151*

Source: Author's elaboration from ESS 2016-2018 dataset

Observing the frequency distribution of parents' occupational status, a larger share of women (69.4%) compared to men (3.2%) are non-employed. Among employed respondents working in higher-status jobs, there are no gender differences. Instead, a wide gender gap concerns respondents' father and mother position in the labour market: if 73.7% of highly educated fathers are concentrated in the highest professional positions and 53.8% of poorly educated or uneducated fathers in the lowest professional ones, just 58.1% of highly educated mothers work in top job positions and the 77.4% of those with little or no education work in lower-ranked jobs. A polarization of women in the labour market is occurring. Most of them who are employed in the high category are employed in public sector activities characterised by a high occupational value of the qualification, such as jobs in education and health, widening the distribution tails.

Finally, the respondents' household net incomes expressed in deciles are examined. The number of persons in the sample who declared to earn an income reaches 1,885 cases. As expected, being a woman on average implies fewer earnings from incomes (Tab.15- Appendix): most women work in low-income jobs compared to men working in the same ranked jobs. The higher the income, the higher the share of men compared to women. Although values vary according to gender, there is no statistical association between the two dimensions.

Being over 50 implies higher incomes due to career progressions and automatic income improvements, even if no statistical relationship between the two variables is found and being native ensures higher income than being non-native (8.4% versus 2%). Higher incomes are earned, especially by highly educated respondents, while those with low or no educational attainment earn incomes included in the lowest or low-medium deciles. Conversely, graduates earn incomes ranked in the highest or high-medium-high deciles (Tab.16-Appendix). The association between education and income levels is thus solid (.375). Respondents employed with high and medium-high occupational status have 20.9% high and 32.9% medium-high incomes. On the other side, those employed in low categories of the labour market have 35.1% and 31.7% low or

medium-low income. The two variables' association is even more evident (Tab.17-Appendix). Finally, a high socio-economic background implies higher incomes. The results align with what has already been shown. Having acquired high educational qualifications indirectly impacts income since occupations mediate it. A preliminary attempt at an explanation through the OED triangle is highlighted.

Three different regression models are presented below to estimate the potential impact of social origin on educational qualifications and employment dimensions. First, the effect of individual and contextual variables (gender, age; ISEI; migration background) on the respondent's educational levels is shown. The second investigates the determinants of access/refusal to the labour market. Finally, in the last model, the relationships between the variables considered and net income in bands are observed to estimate which dimensions impact earnings the most.

## 5. Multivariate Analysis

Taking up the well-known "OED" triangle, the impact of socio-economic background (O) on respondent's education levels (E) is examined. For the first model, an ordinal logistic regression was chosen. Even if it behaves like a categorical variable, the dependent variable 'levels of education' has been treated as an ordinal one in an ordinal regression. The model does work since categories are not equidistant from each other, and differences can be displayed. Considering the effect of one or more covariates, ordinal regression assumes a dependency or causal relationship between two or more independent and dependent variables. It is possible to identify the strength of the independent variables' effect on the dependent, i.e., on the respondent's educational levels. The ordinal model can be presented as the set of two simultaneously estimated binomial models in which the two regression coefficients reach the same value (McCullagh & Nelder, 1989; Pisati, 2003). The reference equation is reported as follows:

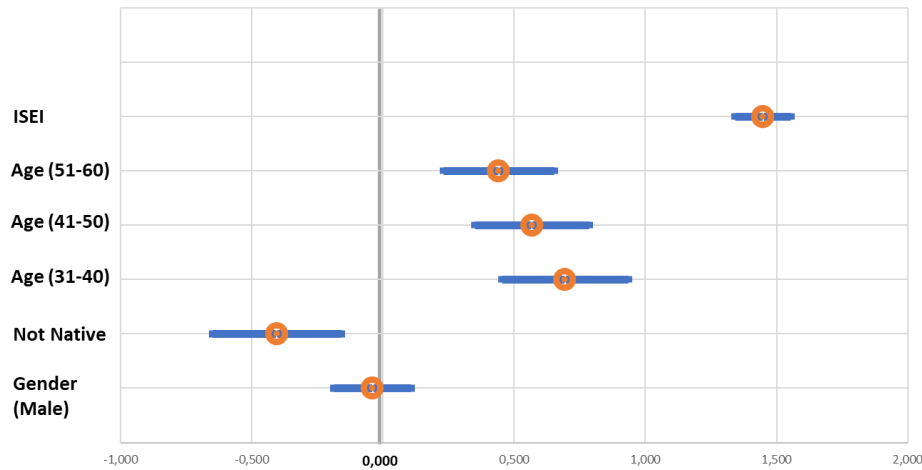
$$2.1 \quad \eta_i^k = \tau^k - (x_{i1}\beta_1 + x_{i2}\beta_2 + x_{i3}\beta_3 \sum_{j=3}^9 x_{ij}\beta_j)$$

In Equation 2.1, references to model values replace the generic values of each linear predictor. The aim is to estimate the causal effect of social origin and other control variables on the dependent variable. Educational levels, which run as the dependent variable, i.e., is an ordinal categorical variable expressing the respondent's level of education in four categories: low, medium-low, medium-high, and high educational level. Besides the effect of social origin on educational level, the impact of age group, gender, and being or not being a native Italian is according to the following formula:

$$2.2 \quad \eta_i^k = \tau^k - (AGE\ GROUPS_{i1} \beta_1 + GENDER_{i2} \beta_2 + ISEI_{i3} \beta_3 + BORN\ COUNTRY_{i4} \beta_4 \sum_{j=4}^9 x_{ij}\beta_j)$$

The reference category for the dependent variable is "university degree and more". The control variables are: age group, split into 31-40, 41-50, 51-60 years

old versus 61-68 years old; gender (male versus female); place of birth, Italy versus foreign country, the former being the reference category; ISEI which represents the socio-economic status. This index will be used in the metric form as a regressor produced by principal component analysis (PCA). Results are displayed below in Figure 4, while estimations are in Table 18 in the Appendix.



**FIGURE 4.** Ordinal regression model. Dependent variable: Interview's Educational levels (University degree and more is the reference category); Independent variables: ISEI (Socio-Economic Status Index); Age groups; Not Native and Gender (male)  
Source: Author's elaboration from ESS 2016-2018 dataset

The model's results are now examined in terms of logs-odds and probability differences. Being a male rather than a female student does not lead to advantages in the odds of achieving a tertiary education degree. Italian female students achieved a university degree to a greater extent than male students and used to have regular studying careers more often than male students. Even with higher levels of education, young Italian women still suffer disadvantages in the labour market. A migratory background gives fewer chances of entering and completing a tertiary education course. Several studies assess that, compared to the native population, students of first- or second-generation migratory background are less likely to enter university (Barban & White, 2011; Azzolini & Ress, 2015; Ambrosini & Panichella, 2016). Since in the ordinal regression model, the category "migration background" is not split into the first and second generation, it has relied on the general category of non-native population, resulting in being disadvantaged. Instead, moving on to age groups, these are ordered according to a decreasing progression. The younger the birth group, the more likely it is that members have achieved tertiary graduation. This is the effect of expanding access to tertiary education over the last decades. Among all the independent variables, gender is not statistically significant. This is probably due to highly gendered university fields of study. These absorb the influence of gender on the likelihood of attaining a tertiary degree. Social origin is the principal factor affecting the chance of attaining higher education levels. Socio-

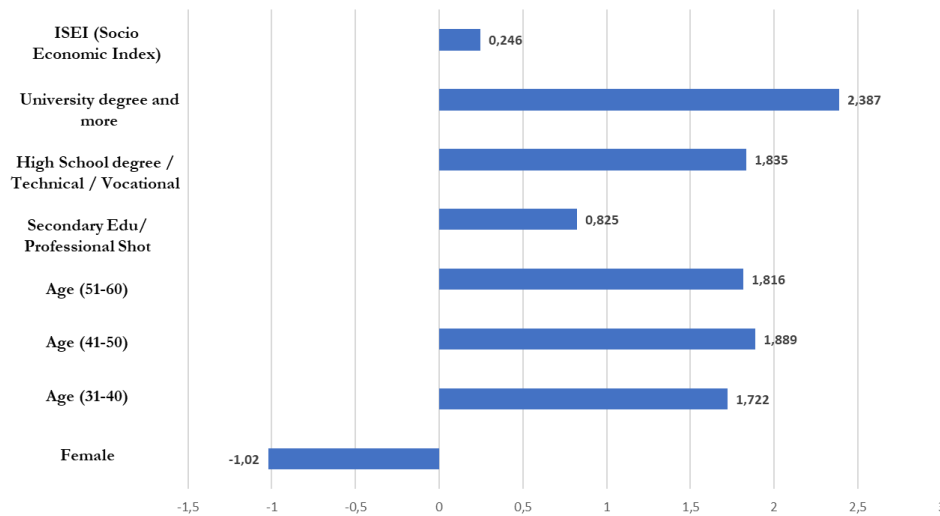
economic background loses direct influence during the secondary education cycle when the school-track effect absorbs it: students with medium and high socio-economic origins enrol in general education schools (*licei*) that prepare for university studies. Those with low and middle socio-economic backgrounds take technical and professional tracks (*istituti tecnici e professionali*) that offer an education considered less suitable for the continuation of studies at university (Giancola, 2019). Therefore, whether considered directly or indirectly (via the effect on the choice of type of secondary school), a student's socio-economic origin is the main and most noticeable factor influencing the likelihood of attaining a tertiary degree.

It also investigated the impact of respondents' educational levels (E) on employment or unemployment (D). Being employed is assumed as the dependent variable. As this is a dichotomous variable, i.e., one that gets only two modes, a binomial logistic regression model was run. Recoding the dependent variable with dichotomous values (between 0 and 1) allows (as for ordinal regression) to express the results of logistic regression in terms of logs-odds (Di Franco, 2017, p. 241). The model estimates the mean values of the dependent binomial variable (y) at values reached by the control variables ( $x_i$ ). Since y is dichotomous, its mean equals the share of cases that take on the value 1. The reference equation whose values have been replaced with the reference equations for the model (2.4) is the following (2.3):

$$2.3 \quad \ln\left(\frac{p_i}{1-p_i}\right) = \beta_0 + \beta_1 x_1 + \dots + \beta_k x_k$$

$$2.4 \quad y = \beta_0 + \beta_1 AGE\ GROUPS_1 + \beta_2 GENDER_2 + \beta_3 ISEI_3 + \beta_4 BORN\ COUNTRY_4 + \beta_5 EDUCATIONAL\ LEVEL_5$$

Reference categories running as control variables are the same as those used for the previous model, with the addition of the respondent's level of education ("No school degree/Primary education" is the reference category). Results are displayed in Tab.19 of estimates in the Appendix, while the graphic version is shown in the following figure.





**FIGURE 5.** *Graphic results Logistic Binomial regression model. Dependent variable: In/out labour market; Independent variables: ISEI (Socio-Economic Index); Interview's Educational Level; Age Groups, Gender (female)*

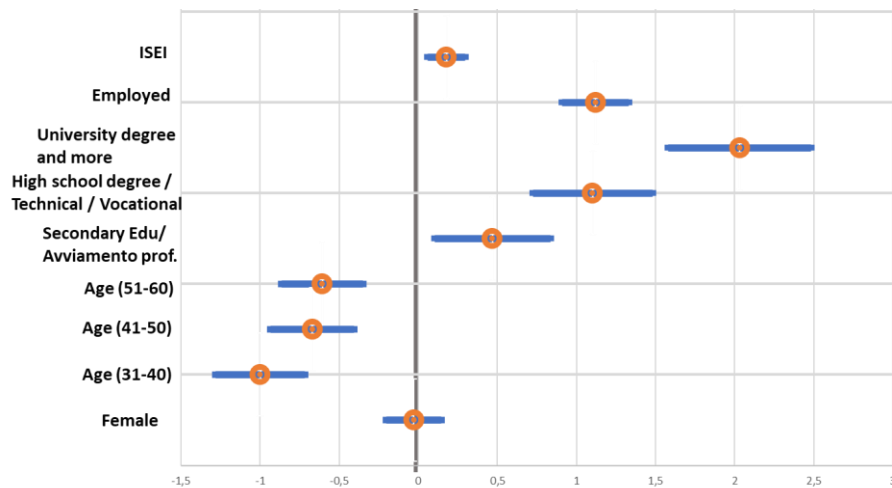
Source: Author's elaboration from ESS 2016-2018 dataset

Findings can state that being female, in line with the literature, leads to significant disadvantages in access to the labour market. Therefore, even if female students perform better in education than male students, this benefit does not balance the negative effect in the labour market, where male students are more likely to be employed. The probability of being employed according to age does not vary significantly. Individuals between 41 and 50 and those between 51 and 60 are more likely to be employed than those aged 31-40. This younger age group includes more people still engaged in training activities and/or seeking a job. After carrying out a control test, in this model, the variable "native/non-native" was excluded because it was not statistically significant and generated residual values. The independent variable that most influence the chances of being employed is the level of education, the university degree (or more). This impact confirms that the level of education achieved significantly impacts the chances of success in the labour market. The distances between the categories included in the model are now observed. Estimates show that earning a university degree generates five times more employment opportunities than earning a lower secondary education degree and almost twice as many as earning an upper secondary education degree. Socio-economic origins lose direct influence because levels and types of education absorb their effect. In brief, low levels of education adversely affect the chances of employability and reproduce or increase inequalities in socio-economic index.

Moving on to the income analysis, the outcomes of the last regression model are now displayed. Since the dependent variable is a categorical variable expressed according to an order (income expressed in a range of 10 categories), it was treated as an ordinal variable in an ordinal regression model. "Being employed" has been added to the control variables. Equation 2.2 was transformed by inserting the independent variables, as shown in equation 2.5.

$$2.5 \quad \eta_i^k = \tau^k - \left( AGE\ GROUPS_{i1} \beta_1 + GENDER_{i2} \beta_2 + ISEI_{i3} \beta_3 + EMPLOYED_{i4} \beta_4 + EDUCATIONAL\ LEVELS_{i5} \beta_5 \sum_{j=5}^9 x_{ij} \beta_j \right)$$

The results are given in the estimation Table 20. in the Appendix and displayed the Figure 6 below.



**FIGURE 6.** Graphic results by an Ordinal Logistic Regression model. Dependent variable: Income all total source; Independent variables: ISEI (Socio-Economic Index); Employed; Interview's Educational Level; Age Groups and Gender (female)  
Source: Author's elaboration from ESS 2016-2018 dataset

Outcomes state that gender does not influence income. This is because the effect of gender is already absorbed by the educational qualifications (which it is known is affected by gender), losing its effect. It was chosen to insert variables one by one in the model to observe the variation in the gender effect. The association is significant when related to the age and the education attained. Gender loses effect when socio-economic status is considered. This pattern can be explained because income as the dependent variable includes all sources of earnings, not only wages from employment status. As far as age groups are concerned, a negative impact decreases as the age of the respondents increases since career and income opportunities increase together as years go by as employed in the labour market.

Like the previous model, being a university graduate carries higher incomes and earnings than being a lower or an upper secondary education graduate. Last, the socio-economic background does not count in the model since the independent effect of social origin, deprived of the age effect, drops its impact. Its variance is mainly absorbed by the effect of the upper secondary graduation and achieved qualification, which is influenced by socio-economic background. Social origin indirectly impacts income because it is mediated by the educational levels attained, which, in turn, affect a specific level of socio-economic background. The relevance of investing in education is highlighted again. A university degree or a higher diploma increases the likelihood of being employed and relying on high income. It turns out that, in line with Italian trends, high educational levels continue to play a decisive role in the labour market, although the employment returns take time to come.

## 6. Conclusions

Outcomes from the statistical analyses performed can be summarised as follows. As expected, social origin (O) directly affects educational level (E): as socio-economic backgrounds increase, so do the chances of attaining higher educational qualifications. Educational level (E) directly affects the odds of finding a job and being employed rather than unemployed (D). The effect of social origin on employability loses relevance as the level of education attained increases, thus absorbing the effects of social origins. Education attained a proxy derivation of social origin, mediating the direct effect of social background. A direct effect of the employment status (being employed rather than unemployed) and the education attained (which determines the social position attained) is at play in influencing the individual income level.

Following the OED triangle scheme, it can now be stated that there is a chaining mechanism between the variables included in the analyses: social origin (O) has a direct impact on educational qualifications (E), which directly influences both the access to the labour market (D) and individual income. Since socio-economic background is directly associated with educational attainments, and these latter are related to socio-economic background, social origins are still the main factor defining individual socio-economic prospects over the life course.

The position attained in the labour market to be employed versus unemployed follows the inertia of social origins (which breaks down into different elements of variance) rather than the effect of a sequence of rational choices. Even though social mobility might have improved over the last decades, whereby educational credentials have increased over time among the population, the reproduction of inequalities driven by social origins remains stable. The hypothesis of persistent inequalities paralleling the expansions of equality in education sounds valid (Shavit & Blossfeld, 1993). This evidence directly recalls the theory of educational inflation (Collins, 1971) and confirms the paradox of credentialism in nullifying the individual benefits associated with mass education (Boudon, 1979). While it must be acknowledged that the expansion of higher education benefits the accumulation of human capital and offers individuals more chances to get employed, the role of social origin in reproducing inequalities along and into this process persists (Bourdieu, 1972). Growing up in an upper-class family significantly enhances the chances of attaining higher education levels and benefitting from employability in terms of income.

Finally, broadening the meanings of analysis results, it is also considered non-economic outcomes of educational attainments by observing the effect of educational levels mediated by social origin on "civic participation" and "health and well-being". In a dedicated section of the SSE, it underlines what has been shown in the literature on the topic (Tilak, 2002; White, 2016; Assirelli, 2014; Sarti, 2018) that low socio-economic background is correlated to both low individuals' civic participation and activism and drug consumption and higher risks of disease. Starting from this analysis, which is considered a prototype aimed at building a prototype to be replicated in future surveys, it is chosen to analyse data from the new 2020s SSE dataset and data from previous waves to get a larger sample of cases and verify the trends over time.

## Notes

1. The other three key-steps are: leaving the parents' household, starting a couple relationship, and having a child (Salmieri & Giancola, 2016).
2. The 21 categories of the original variable 'level of education' of respondents and parents are reported: "Licenza elementare o attestato di valutazione finale di istruzione primaria"; "avviamento professionale"; "Licenza media o diploma di istruzione secondaria di I grado"; "Qualifica professionale regionale (durata inferiore ai 2 anni)"; "Diploma di qualifica professionale di scuola secondaria superiore"; "Diploma professionale IeFP di Tecnico (quarto anno)"; "Diploma di Maturità / Diploma di Istruzione tecnica o professionale"; "Diploma di Maturità / Diploma di Istruzione secondaria superiore (di II grado)"; "Qualifica professionale regionale post-diploma / Certificato di specializzazione tecnica superiore (IFTS)"; "Diploma di Tecnico Superiore ITS"; "Laurea di primo livello (triennale)"; "Diploma universitario di 2-3 anni / Scuola diretta a fini speciali / Scuola parauniversitaria"; "Diploma accademico di primo livello AFAM (triennale)"; "Master universitario di 1° livello / Diploma accademico di specializzazione/perfezionamento di 1° livello (AFAM)"; "Diploma di Accademia (Belle arti nazionale di arte drammatica nazionale di danza)"; "Laurea vecchio ordinamento / Laurea specialistica o magistrale a ciclo unico"; "Laurea specialistica o magistrale di secondo livello (biennale)"; "Diploma accademico di secondo livello AFAM (biennale)"; "Master universitario di 2° livello / Diploma di specializzazione universitaria di 2° livello"; "Dottorato di ricerca / Diploma accademico di formazione alla ricerca (AFAM)".
3. "No school degree/ Primary Education"; "Secondary education /Professional shot"; "High School / Technical / Vocational degree " and finally "University degree and higher".
4. The reference categories are: Low" (16.8%); "Middle Low" (27.1%); "Middle High" (25.7%); "High" (16.1%).
5. Father: 'High' (5.4%); 'Middle High' (18.4%); 'Middle Low' (36.7%); 'Low' (36.4%) / Mother: "High" (3.4%); "Middle High" (8%); "Middle Low" (5.9%); "Low" (13.3%)
6. The five categories are "Low"; (18.5%); "Middle Low"; (29.8%); "Middle"; (21.4%); "Middle High"; (22.5%); "High"; (7.7%).

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## APPENDIX

		Father's Level of Education	Mother's Level of Education	Father's Status Occupatio nal	Mother's status Occupatio nal
Correlation	Father's Level of Education	1.000	.784	.634	.435
	Mother's Level of Education	.784	1.000	.535	.550
	Father's Status Occupational	.634	.535	1.000	.376
	Mother's status Occupational	.435	.550	.376	1.000
Sign. (one tailed)	Father's Level of Education		.000	.000	.000
	Mother's Level of Education	.000		.000	.000
	Father's Status Occupational	.000	.000		.000
	Mother's status Occupational	.000	.000	.000	

**TABLE 3.** *Correlation Matrix regarding ACP results (ISE Socio-Economic Index).*

Source: Author's elaboration from ESS 2016-2018 dataset

Component	Initial eigenvalues			Sums of extraction squares loaded		
	Total	% di variance	% cumulative	Total	% di variance	% cumulative
1	2.678	66.955	66.955	2.678	66.955	66.955
2	.667	16.677	83.632			
3	.465	11.634	95.266			
4	.189	4.734	100.000			

Extraction method: Principal component analysis.

**TABLE 4.** *Total variance explained; ACP results (ISEI Socio-Economic Index).*

Source: Author's elaboration from ESS 2016-2018 dataset

Component	
1	
Father's Level of Education	.891
Mother's Level of Education	.892
Father's Status Occupational	.777
Mother's status Occupational	.697

Metodo di estrazione: Analisi dei componenti principali.  
a. 1 componenti estratti.

**TABLE 5.** *Component Matrix; ACP results (ISEI Socio-Economic Index).*

Source: Author's elaboration from ESS 2016-2018 dataset

Interview's Educational Level	Age Groups				Total
	31-40	41-50	51-60	61-68	
No school degree/ Primary Education	1.3%	3.3%	6.9%	17.2%	6.7% (214)
Secondary Education / Professional shot	26.8%	29.1%	34.0%	38.4%	31.9% (1,017)
High school degree / Technical / Vocational	49.3%	52.4%	46.8%	32.9%	46.2% (1,473)
University degree	22.5%	15.3%	12.3%	11.5%	15.2% (484)
Total	100.0% (679)	100.0% (936)	100.0% (938)	100.0% (635)	100.0% (3,188)

**TABLE 6.** Cross Table: Interview's Educational Levels \* Age groups.

Source: Author's elaboration from ESS 2016-2018 dataset

Gender		Age Groups				Total
		31-40	41-50	51-60	61-68	
<b>Male</b>	No school degree/ Primary Education	1.2%	2.4%	6.3%	13.8%	5.4% (84)
	Secondary Education / Professional shot	30.2%	29.9%	35.4%	38.9%	33.3% (515)
	High school degree / Technical / Vocational	49.4%	52.5%	46.4%	34.2%	46.5% (720)
	University degree	19.2%	15.3%	11.9%	13.1%	14.7% (228)
	<b>Total</b>	100.0% (338)	100.0% (465)	100.0% (446)	100.0% (289)	100.0% (1,547)
<b>Female</b>	No school degree/ Primary Education	1.5%	4.2%	7.5%	20.2%	7.9% (130)
	Secondary Education / Professional shot	23.5%	28.2%	32.7%	38.0%	30.6% (502)
	High school degree / Technical / Vocational	49.3%	52.2%	47.2%	31.8%	45.9% (753)
	University degree	25.8%	15.3%	12.6%	10.1%	15.6% (256)
	<b>Total</b>	100.0% (341)	100.0% (471)	100.0% (492)	100.0% (337)	100.0% (1,641)
<b>Total</b>	No school degree/ Primary Education	1.3%	3.3%	6.9%	17.2%	6.7% (214)
	Secondary Education / Professional shot	26.8%	29.1%	34.0%	38.4%	31.9% (1,017)
	High school degree / Technical / Vocational	49.3%	52.4%	46.8%	32.9%	46.2% (1,473)
	University degree	22.5%	15.3%	12.3%	11.5%	15.2% (484)
	<b>Total</b>	100.0% (679)	100.0% (936)	100.0% (938)	100.0% (635)	100.0% (3,188)

**TABLE 7.** Trivariate cross table: Interview's Educational Level \* Age Groups \* Gender.  
% Column; Valid cases 3,188; Chi square (M):85.532; Chi square (F): 155.246; Chi square total: 235.156; Sign: .000; Gamma (M): -.212; Gamma (F): -.312; Gamma Total: -.2. Source: Author's elaboration from ESS 2016-2018 dataset

Father's Educational Level	Age Groups				Total
	31-40	41-50	51-60	61-68	
No school degree/ Primary Education	30.8%	43.9%	58.8%	70.6%	50.9% (1,552)
Secondary Education / Professional shot	43.5%	36.2%	27.1%	18.3%	31.5% (961)
High school degree / Technical / Vocational	21.2%	16.2%	10.2%	7.1%	13.7% (417)
University degree	4.5%	3.8%	3.9%	4.0%	4.0% (122)
Total	100.0% (646)	100.0% (896)	100.0% (904)	100.0% (606)	100.0% (3,052)

**TABLE 8.** Cross Table: Father's Level of Education \* Age groups. % Column; Valid cases: 3,052, Chi square: 251.120; Sign: .000; Gamma: .332.

Source: Author's elaboration from ESS 2016-2018 dataset

Mother's Education Level	Age Groups				Total
	31-40	41-50	51-60	61-68	
No school degree/ Primary Education	32.9%	50.6%	68.6%	77.4%	57.5% (1,778)
Secondary Education / Professional shot	43.2%	33.6%	21.7%	14.8%	28.4% (877)
High school degree / Technical / Vocational	19.4%	14.1%	8.6%	6.3%	12.1% (373)
University degree	4.4%	1.8%	1.1%	1.5%	2.1% (64)
Total	100.0% (659)	100.0% (900)	100.0% (917)	100.0% (616)	100.0% (3,092)

**TABLE 9.** Cross Table: Mother's Education Levels \* Age groups. %column; Case valid: 3,092 ;Chi square: 334.981; Sign: .000; Gamma: -.414.

Source: Author's elaboration from ESS 2016-2018 dataset

Father's Level of Education	Mother's Level of Education				Total
	No school degree/ Primary Education	Secondary Education / Professional shot	High school degree / Technical / Vocational	University degree	
No school degree/ Primary Education	46.8%	3.5%	0.4%	0.2%	50.9% (1,540)
Secondary Education / Professional shot	8.8%	19.9%	2.5%	0.2%	31.4% (949)
High school degree / Technical / Vocational	1.4%	4.6%	7.1%	0.6%	13.7% (415)
University degree	0.3%	0.3%	2.2%	1.2%	4.0% (122)
<b>Total</b>	57.3% (1,735)	28.3% (857)	12.2% (370)	2.1% (64)	100.0% (3,026)

**TABLE 10.** Cross Table: Father's Educational Level \* Mother's Educational Level. % Total; Valid cases: 3,026; Chi Square: 2,744.618; Sign: .000; Coeff. contingenza: .690; Gamma: .900.

Source: Author's elaboration from ESS 2016-2018 dataset

	Age Groups				Total
	31-40	41-50	51-60	61-68	
Employed	74.4%	74.6%	70.2%	28.8%	64.2% (2,047)
Unemployed	25.6%	25.4%	29.8%	71.2%	35.8% (1,142)
<b>Total</b>	100.0% (680)	100.0% (937)	100.0% (940)	100.0% (632)	100.0% (3,189)

**TABLE 11.** Cross Table: Employed vs Unemployed \* Age Groups. % Column; Valid Cases: 3,189; Chi Square: 434.317; Sign: .000; Coeff. Contingenza: .346; Gamma: .428.

Source: Author's elaboration from ESS 2016-2018 dataset

	Interview's Educational Level				Total
	No school degree/ Primary Education	Secondary Education / Professional shot	High school degree / Technical / Vocational	University degree	
Employed	20.8%	49.2%	74.2%	84.6%	64.2% (2,053)
Unemployed	79.2%	50.8%	25.8%	15.4%	35.8% (1,136)
<b>Total</b>	100.0% (212)	100.0% (1,013)	100.0% (1,467)	100.0% (479)	100.0% (3,171)

**TABLE 12.** Employed vs Unemployed\*Interview's Educational Level. % Column; Valid Cases: 3,171; Chi Square: 423.357; Sign: .000; Coeff.Contingenza: .343.

Source: Author's elaboration from ESS 2016-2018 dataset

Interview's Occupational Status	Interview's Educational Level				Total
	No school degree/ Primary Education	Secondary Education / Professional shot	High school degree / Technical / Vocational	University degree	
Out occ.	30.2%	16.5%	7.4%	2.6%	11.0% (338)
Low	33.3%	32.2%	10.4%	1.7%	17.5% (537)
Middle Low	30.2%	39.7%	26.8%	7.1%	28.1% (865)
Middle High	4.2%	8.8%	42.7%	23.8%	26.6% (819)
High	2.1%	2.9%	12.6%	64.9%	16.8% (516)
<b>Total</b>	100.0% (189)	100.0% (982)	100.0% (1,437)	100.0% (467)	100.0% (3,075)

**TABLE 13.** Cross Table: Interview's Occupational Status\*Interview's Educational status. % Column; Valid Cases: 3,075; Chi Square: 1,605.793; Significance: .000; Coeff.Contingenza: .586.

Source: Author's elaboration from ESS 2016-2018 dataset

Employed vs Unemployed	Average	N	Std. Deviation
Employed	0.064	1,782	0.939
Unemployed	-0.421	954	0.738
<b>Totale</b>	-0.105	2,736	0.904

**TABLE 14.** Compare Means: ISEI Socio-Economic Index \*Employed vs Unemployed. Eta: .256; Eta2: .066; Anova between: 146.645; Anova within: 2,089.544; F: 191.874; Sign: .000.

Source: Author's elaboration from ESS 2016-2018 dataset

Interview's Income recod	Gender		Total
	Male	Female	
Low	16.7%	20.2%	18.5% (349)
Middle Low	28.2%	31.3%	29.8% (563)
Middle	21.8%	21.1%	21.4% (404)
Middle High	24.4%	20.7%	22.5% (424)
High	8.8%	6.7%	7.7% (146)
<b>Total</b>	100.0% (904)	100.0% (981)	100.0% (1,885)

**TABLE 15.** Cross Table: Interview's Income recod\*Gender. % Column; Valid cases: 1,885; Chi Square: 10.367; Significance: .035; Coeff contingenza: 0.74.

Source: Author's elaboration from ESS 2016-2018 dataset

Interview's Income recod	Interview's Educational Level				Total
	No school degree/ Primary Education	Secondary Education / Professional shot	High school degree / Technical / Vocational	University degree	
Low	38.2%	27.7%	13.1%	6.3%	18.5% (348)
Middle Low	35.9%	37.1%	28.3%	16.1%	29.8% (559)
Middle	15.3%	19.3%	24.3%	20.3%	21.4% (402)
Middle High	8.4%	12.9%	27.8%	33.9%	22.5% (423)
High	2.3%	3.1%	6.6%	23.4%	7.7% (145)
<b>Total</b>	100.0% (131)	100.0% (607)	100.0% (853)	100.0% (286)	100.0% (1,877)

**TABLE 16.** Interview's Income recod\*Interview's Educational Level. % Column; Valid cases: 1,832; Chi Square: 307.427; Significance: .000; Coeff di contingenza: .375; Gamma: .437.

Source: Author's elaboration from ESS 2016-2018 dataset

Interview's Income recod	Interview's Occupational Status					Total
	Out occ.	Low	Middle Low	Middle High	High	
Low	30.0%	35.1%	19.0%	8.5%	5.0%	18.0% (330)
Middle Low	48.8%	31.7%	32.5%	21.9%	21.3%	29.5% (541)
Middle	14.3%	19.7%	23.3%	25.1%	19.9%	21.6% (395)
Middle High	4.4%	9.8%	21.3%	35.0%	32.9%	22.9% (420)
High	2.5%	3.7%	3.8%	9.5%	20.9%	8.0% (146)
<b>Total</b>	100.0% (203)	100.0% (325)	100.0% (520)	100.0% (483)	100.0% (301)	100.0% (1,832)

**TABLE 17.** Cross Table: Interview's Income recod\* Interview's Occupational Status. % Column; Valid Cases 1,832; Chi Square: 365.039; Coeff.Conti: .408; Gamma: .429.

Source: Author's elaboration from ESS 2016-2018 dataset



		Estima tion	Stan dard error	Wald	D F	Sign.	95% Confidence Interval	
							Lower limit	Upper limit
Threshold	No school degree	-3.006	.115	677.85	1	.000	-3.232	-2.780
	/ Primary			1				
	Education							
	Secondary	-.505	.097	27.375	1	.000	-.695	-.316
	Education /							
	Professional shot							
	High School /	2.486	.110	510.22	1	.000	2.270	2.702
	Technical /			8				
Vocational degree								
Location	Male	-.039	.075	.269	1	.604	-.186	.108
	Not Native	-.404	.124	10.534	1	.001	-.648	-.160
	Age 31-40	.694	.123	32.046	1	.000	.454	.935
	Age 41-50	.568	.111	26.316	1	.000	.351	.785
	Age 51-60	.442	.108	16.858	1	.000	.231	.653
	ISEI (Socio-	1.448	.054	709.20	1	.000	1.342	1.555
	Economic Index)			6				

Connecting function: Logit.

**TABLE 18.** *Determinants of Educational Level- Ordinal Logistic Regression model. Model 1. [Number of unweighted valid cases: 2,373; Log likelihood 2,321.622; Chi Square: 1,064.844; Df: 6; Sign. .000; Pearson: 1,726.609; Deviation: 1,551.797; Cox and Snell: .322; Nagelkerke: .355; McFadden: .164; (Our elaboration from ESS 2016 and 2018 dataset).*

Source: Author's elaboration from ESS 2016-2018 dataset

	B	S.E.	Wald	Df	Sign.	Exp(B)
Female	-1.020	.097	111.722	1	.000	.360
Age 31-40	1.722	.149	132.704	1	.000	5.595
Age 41-50	1.889	.139	185.847	1	.000	6.612
Age 51-60	1.816	.135	181.675	1	.000	6.147
Secondary Edu/ Avviamento prof.	.825	.212	15.191	1	.000	2.281
High school / Technical / Vocational degree	1.835	.215	72.700	1	.000	6.264
University degree and more	2.387	.264	82.002	1	.000	10.885
ISEI (Socio-Economic Index)	.246	.069	12.855	1	.000	1.279
Costant	-1.634	.227	51.946	1	.000	.195

a. Variables entered in the step 1: Female; 31-40, Age 31-40; 41-50; 51-60, Secondary Education / Professional shot, High school degree / Technical / Vocational; University degree and more; ISEI (Socio-Economic Index).

**TABLE 19.** *Determinants of access to labour market (in / out) of Italian. Binomial logistic regression model; Model 2; Number of valid cases 11,381 Overall percentage predicted correctly: 65.1; Log likelihood 2,767.269; Cox and Snell .244; Nagelkerke .336; Chi square 763.826; df: 8; sign. .000. Source: Author's elaboration from ESS 2016-2018 dataset*

		Estimation	Standard error	Wald	DF	Sign.	95% Confidence Interval	
							Lower limit	Upper limit
Threshold	[decile = 1]	-1.951	.205	90.632	1	.000	-2.353	-1.550
	[decile = 2]	-.722	.193	13.986	1	.000	-1.100	-.344
	[decile = 3]	.272	.193	1.990	1	.158	-.106	.649
	[decile = 4]	.950	.194	23.939	1	.000	.569	1.330
	[decile = 5]	1.424	.196	52.942	1	.000	1.040	1.807
	[decile = 6]	1.998	.198	101.806	1	.000	1.610	2.387
	[decile = 7]	2.947	.204	209.240	1	.000	2.548	3.346
	[decile = 8]	3.830	.213	321.863	1	.000	3.411	4.248
	[decile = 9]	4.923	.241	417.798	1	.000	4.451	5.395
Location	Female	-.028	.088	.102	1	.750	-.201	.145
	Age 31-40	-.999	.144	47.893	1	.000	-1.282	-.716
	Age 41-50	-.670	.134	24.856	1	.000	-.933	-.406
	Age 51-60	-.607	.132	21.086	1	.000	-.866	-.348
	Secondary Education / Avviamento profes.	.469	.186	6.348	1	.012	.104	.834
	High school / Technical / Vocational degree	1.103	.193	32.525	1	.000	.724	1.482
	University degree and more	2.032	.231	77.112	1	.000	1.579	2.486
	Employed	1.121	.108	108.703	1	.000	.910	1.332
	ISEI (Socio-Economic Index)	.178	.060	8.727	1	.003	.060	.96

Connecting function: Logit.

**TABLE 20.** *Determinants of Total Income- Ordinal Logistic Regression model. Model 3. [Number of valid cases: 1,676; Log likelihood 5,154.294; Chi Square: 408.41; Df: 9; Sign. .000; Pearson: 7,467.768; Deviation: 4,226.377; Cox and Snell: .216; Nagelkerke: .219; McFadden: .055.*

Source: Author's elaboration from ESS 2016-2018 dataset