



Munich Personal RePEc Archive

**Socio-economic characteristics as  
determinants in the job market: The case  
of Piedmont in Italy (1867–2005)**

Calabrese, Matteo and Van Leeuwen, Bas

30 November 2023

Online at <https://mpra.ub.uni-muenchen.de/119299/>  
MPRA Paper No. 119299, posted 20 Dec 2023 11:24 UTC

# Socio-economic characteristics as determinants in the job market: The case of Piedmont in Italy (1867–2005)

Matteo Calabrese<sup>1</sup> and Bas van Leeuwen<sup>2</sup>

## Abstract

In Modernization Theory, it is argued that both the socio-economic background and education level of labourers affect the job market. In this article, we analyse the effects of both factors on the job market of Piedmont, a region in the north-west of Italy, using a new dataset of job-offer advertisements (job ads) from the newspaper *La Stampa* between 1867 and 2005. In line with Modernization Theory, we find that the number of job ads mentioning job-unrelated factors (e.g. ‘family background’) as a requirement for hiring, declined over the years. Yet, when present in the text of the job ads, job-unrelated characteristics increased the probability of ending up in jobs with a lower occupational status. However, contrary to job-unrelated factors, the frequency of mentions of socio-attitudinal characteristics (e.g. the ‘ability to deal with the public’) increased over time in the job ads while contributing to the probability of ending in jobs with higher occupational status.

**JEL classification:** J24, J28, N33, N34, N83, N84

**Keywords:** Italy, Piedmont, job ads, newspaper, La Stampa, job characteristics

---

<sup>1</sup> Corresponding author | email: [matteo.calabrese@uni.lu](mailto:matteo.calabrese@uni.lu) | Luxembourg Centre for Contemporary and Digital History | University of Luxembourg, Maison des Sciences Humaines, Porte des Sciences 11, L-4366, Esch sur Alzette (Luxembourg).  
Orcid : <https://orcid.org/0000-0003-2835-3417>

<sup>2</sup> email: [bas.van.leeuwen@iisg.nl](mailto:bas.van.leeuwen@iisg.nl) | Research Department, International Institute of Social History, Cruquiusweg 31, 1019AT Amsterdam (the Netherlands) | Research Institute for History and Art History, Utrecht University, Drift 6, 3512BS Utrecht (the Netherlands).  
Orcid: <https://orcid.org/0000-0001-7817-5298>

## 1. Introduction

Job characteristics, and their interaction with management and employees' choices, have attracted much academic attention over time (see e.g. DeVaro et al. 2012; MacMillan et al. 2015). Initially, the focus was on labour division. Starting with Adam Smith's famous late 18<sup>th</sup>-century example of pin manufacturing—in which each individual task was performed by a separate labourer, thus increasing labour productivity—many scholars have since argued that new technologies triggered corresponding changes in the division of labour (e.g. Landes 1986).<sup>3</sup> From the 1950s, these theories on labour productivity by means of labour division were slowly amended by various theories on motivating labourers through job satisfaction, job responsibility, and creating competence. An early example of such theories is Herzberg et al. (1959).<sup>4</sup> Essentially, their model was aimed at identifying those intangible factors in the workplace (e.g. job responsibility) that potentially make a job more attractive and act as motivators for the employees (see also Dartey-Baah and Kofi Amoako 2011; Smits and Shield 2013).

Other job-related theories followed in succession. Lancaster's 'New Approach to Consumer Theory' (1966)—see also the reformulation of Kunze and Suppa (2013)—stressed the role of the characteristics underlying goods and services on the demand side. When applied to jobs, this model investigates non-pecuniary factors ranging from job security to autonomy, which are considered important for the demand and supply relation in the job market. Similarly, the 'Job Characteristics Model' of Hackman and Oldham (1975) analyses a set of job characteristics that are argued to motivate the employee, such as *skill variety* (the set of different skills used in the job) and *task identity* (a more or less complete identification of the employees with the entire task) (see also Grant et al. 2011).

Valuable as these models are, owing to their static nature and their lack of individual-level data they often draw only a partial picture of the forces at play when applied to a historical setting.<sup>5</sup> 'Modernization Theory' was in part able to overcome these limits. Rather than focusing on single explanations, it widened the interpretation to a greater array of relations, including, inter alia, industrialization (Bell 1973), urbanization, individualism, the role of the welfare state (Beller and Hout

---

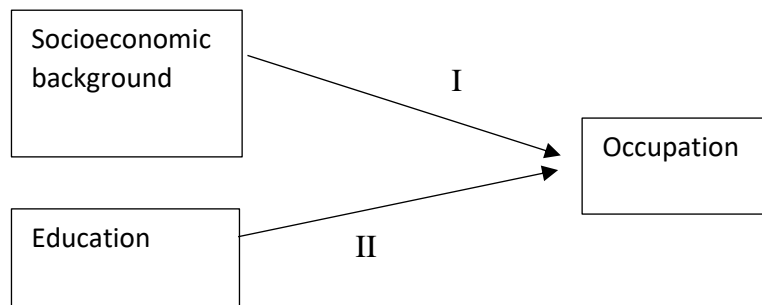
<sup>3</sup> Other scholars have highlighted that it was rather the emergence of higher wages for labourers employed into sectors with a strong division of labour (e.g. Clark 1994) that further triggered overall specialization.

<sup>4</sup> See also Herzberg (1966).

<sup>5</sup> Some authors have tried to overcome this lack of data by deriving changes in job characteristics from macroeconomic data (e.g. technological change) rather than from worker behaviour. This approach is problematic, however, as causality may run opposite with worker behaviour underlying macroeconomic behaviour (Johns 2006; Wegman et al. 2018).

2006), and employees' social background in the job application process (Marks 2009). As outlined in Figure 1, Modernization Theory predicts that over time:

- a) The effect of the socioeconomic background—a complex of indicators, including family, physical characteristics, and socio-attitudinal characteristics of the individual (Marks 2009: 927–928)—on occupation (I) declines.
- b) The effect of education on occupation (II) increases.
- c) The effect of education on occupation is greater than that of socio-economic background ( $II \gg I$ )



Source: Marks (2009)

**Figure 1.** Relations between various measures of modernization

In the present paper, we refer to Modernization Theory to analyse the effects of both socio-economic background and the education level of job applicants on their chances to access the labour market of the Italian north-west region of Piedmont. To this end, we base our analysis on a new source: a group of job-offer advertisements (job ads) published in the daily issues of the Turin newspaper *La Stampa*, between 1867 and 2005 (Section 2). In Sections 3 and 4 we analyse, respectively, the share of ads containing socio-economic or educational requirements, and the effects of these requirements on occupational ranking. Finally, we conclude with a brief discussion of the results.

## 2. Long-term labour dynamics through the analysis of *La Stampa*'s job ads

Even though modernization theories have attracted much attention in labour studies (e.g. DiPrete and Grunsky 1990; Wolbers et al. 2001; Breen and Jonsson 2005; Paterson and Iannelli 2007; Zangger et al. 2018), long-term data to test these theories in historical contexts are limited. In this paper, we use a new dataset of a newspaper's job ads, which can provide a valuable instrument for this type of analysis.<sup>6</sup> Among the studies that have focused on the relationship between job ads and specific characteristics of industries or of the labour market, there is for example Todd et al. (1995), that analyse a group of ads in US and Canadian newspapers between 1970 and 1990, to provide a measure of the increasing requests during those years for IT competencies. Likewise, Lee and Lee (2006) collect two years (2001–2002) of job ads looking for managers from the 'Fortune 500 companies', to study the market value of IT skills and also 'behavioural skills' for managers. Kuhn and Shen (2013), by using a 20-week sample of internet-based job ads for the Chinese labour market, focus instead on societal characteristics. They find that gender discrimination in online job ads typically arises from skill-targeting relationships (discrimination is implicit in the set of skills required for the job) and from the demand for descriptive worker characteristics (notably age, height, and appearance). Similarly, Darity and Mason (1998) find evidence of discrimination based on "codes of color and gender" (but also age and "family gap") in a sample of job ads from three US newspapers between 1945 and 1965.

The above-mentioned studies, despite their descriptive and empirical value, generally do not provide a long-term historical perspective. Two partial exceptions in this respect are the studies of Atalay et al. (2018) and Schulz et al. (2014). Atalay et al. conduct an empirical analysis of the increasing demand for non-routine tasks in the ICT sector, through the analysis of job ads in three newspapers in the US market between 1960 and 2000. Schulz et al. (2014) analyse a sample of job ads collected from three Dutch newspapers issued between 1870 and 1939. In accordance with Modernization Theory, they expected to find an increasing relevance of job-related over job-unrelated (e.g. social origin) characteristics in the preferences that Dutch employers expressed in job ads. Contrary to their expectations, however, the analysis confirmed this relationship only for the job ads involving high-status occupations, while it was hypothesized that for low- and middle-status occupations, the decline in requirements for job-unrelated characteristics probably began after the time frame of their study (i.e. 1939).

---

<sup>6</sup> As pointed out by Rafaeli and Oliver (1998:343), job ads function as a 'linking pin' for a manifold of factors that, from the point of view of the employers, influence the output at the individual (personal characteristics), occupational (e.g. skills and knowledge), organizational (e.g. what the company is/does), industrial (the production sector), and societal (e.g. an equal-opportunity company) levels.

In this paper, we follow the lead of the past literature and use a newly constructed dataset of newspaper job ads, to evaluate the long-term impact of socio-economic and educational characteristics in the labour market of Piedmont. This region was chosen for its central role as a leading actor in Italy's long-term industrialization. Piedmont, together with Liguria and Lombardy, stands out as an area with the highest GDP per capita, which approached the national average only after the 1980s (Felice and Vecchi 2015: 236); the highest levels of literacy and average number of years of education per individual (Brunello et al. 2000; Basile et al. 2021); and the highest levels of female participation in the labour force (Daniele and Malanima 2013; Rinaldi and Tagliazucchi 2022). In this environment, the traditional manufacturing sector (textiles, tool production, food processing, etc.)—together with new conglomerates in chemical, steel, and, most importantly, automobile production—was the main driver of the '*miracolo economico*', the economic boom occurring in Italy between the 1950s and the 1960s. In particular, the Fiat car factory, which was founded in 1899 and then progressively expanded its facilities based on 'Fordist' production processes (Settis 2016), led the exponential growth in terms of share of national production of this region throughout the second half of the twentieth century. In this respect, the coexistence in the same geographical area of sectors with a high degree of labour division and those with less labour division (more traditional manufactures) allows us to test Modernization Theory's models over time, in a more varied industrial context and in a broader sphere of occupational roles.

To build the dataset, we thus used *La Stampa*, a newspaper published in Turin (regional capital of Piedmont), which, being moreover one of the oldest daily newspapers in Italy, was issued continuously from 1867 until the present and is read most widely in Piedmont. The data cover a time span of 138 years, between 1867 and 2005, from the foundation of *La Stampa* until the last available year in the digitization implemented by the '*Archivio Storico La Stampa*', as of 15 February 2021.<sup>7</sup> Despite a progressive expansion of its distribution to a national level, *La Stampa* has remained primarily sold in Piedmont and Liguria (Forno 2012; Gabellieri and Scaglione 2021). The jobs advertised in the *La Stampa*'s ads were therefore mainly located in Piedmont (ca. 90 per cent) and to a lesser extent in Liguria and Lombardy.

In the construction of the dataset, we used the following basic criterion: we included the ads only when they were clearly identifiable as job offers from an employer, either public or private (labour demand). Jobs-wanted ads from workers, which already from the first issues of the newspaper were printed inbetween employers' ads, were not considered. The total number of employers' job ads included in our dataset is 13,831. Since each job ad contains several indicators (sex, age, location, salary, social

---

<sup>7</sup> <http://www.archiviolaStampa.it/content/view/2/1/>

characteristics, etc.), this results in a collection of ca. 152,000 data points, making the dataset larger than those typically used in the literature.<sup>8</sup>

The entries were collected manually, since a computer-based entry was impossible. There were two main reasons for this manual collection: first, the sometimes low quality of the scans of the digitized newspaper issues; second, the large number of indicators of interest extrapolated from the job ads, which were moreover worded differently over time and even among job ads from the same region and year. For example, the social characteristic ‘able to work with public’ could be delineated in many ways, ranging from ‘*abile con la clientela*’ (skilled in dealing with customers) to ‘*che sappia parlare bene*’ (someone who has good communicative skills). As reported in Table 1, over our period of interest we collected for each job ad a group of 11 indicators, referring to socio-economic background, education level, and occupation. In line with Marks (2009), we included in the socioeconomic characteristics the family of origin (e.g. ‘*di buona famiglia*’, with a good family of origin); marriage, sex, physical characteristics (e.g. ‘*di bella presenza*’, good-looking; being physically strong); and socio-attitudinal characteristics (e.g. ‘leadership skills’, ‘ability to work with public’). The education level refers to four classes of literacy (no education, primary, secondary, and higher education), which we combined with the additional requirement for possession or not of previous experience for a position job (see Table 1).

---

<sup>8</sup> For example, Todd et al. (1995) analysed 1,234 ads in US and Canadian newspapers between 1970 and 1990, while Lee and Lee (2006) collected 555 ads. See also the discussion of Sodhi and Son (2009) on the limited availability of studies based on job ads.



Category	Variable group	Variable
<i>region/time</i>	year	1867–2005
Socio-economic background	family	married, sex, good family background
	physical appearance	strong, tidy appearance
	social attitudinal characteristics	leadership skills, ability to work with public
Occupation	occupation	2-digit ISCO job code
	public/private	public or private sector
Education	education	no education, primary education, secondary education, higher education.
	experience	experience yes/no

**Table 1.** Variables by category in our database

Finally, we collected and coded the occupations described in the job ads by using the International Standard Classification of Occupation (ISCO), to subdivide them into 44 categories, grouped into ten main occupation groups based on the first digit of the 2-digit ISCO code.<sup>9</sup> This grouping allows a distribution of the jobs over an ordinal scale, ranging from low-ranking jobs (having as first digit ‘9’, and coded as ‘Elementary occupations’) to high-ranking jobs (with first digit ‘1’ and coded as ‘Managers’; and ‘0’, ‘Armed Forces Occupations’). In Table 2, we report the ISCO groups and their weight in the overall dataset.

<sup>9</sup>See [https://www.ilo.org/wcmsp5/groups/public/---dgreports/---stat/documents/meetingdocument/wcms\\_087769.pdf](https://www.ilo.org/wcmsp5/groups/public/---dgreports/---stat/documents/meetingdocument/wcms_087769.pdf). Due to the fact that the job titles in the head of the job ads were at times ambiguous, we attributed the ISCO codes by referring to the job ad task included in the text of each ad inserted in the database.



	ISCO code	Title	share
 <b>High ranking jobs</b>	0	Armed Forces Occupations	0.02%
	1	Managers	2.61%
	2	Professionals Technicians and Associates	4.40%
	3	Professionals	6.37%
	4	Clerical Support Workers	22.20%
	5	Services and Sales Workers Skilled Agricultural, Forestry and	16.92%
	6	Fishery Workers	0.20%
 <b>Low ranking jobs</b>	7	Craft and Related Trades Workers	19.49%
		Plant and Machine Operators and	
	8	Assemblers	6.81%
	9	Elementary Occupations	20.41%
	9999	Unknown	0.57%
	<b>Total</b>		<b>100.00%</b>

**Table 2.** ISCO groups in our dataset (1867-2005)

In constructing the dataset, we applied certain limitations, as the frequency of the job ads varied significantly over the years. Whereas in the first 50 years of *La Stampa*'s existence the ads were few and often even absent in the daily issues of the newspaper, in the later years the job ads were organized into a dedicated section, which nevertheless ranged in content from a handful to hundreds of ads per day. For this reason, we took a sample of ads. For the first period, from 1867 to 1905, we include all the ads covering two months of the year, January and July, for every 5 years (i.e. 1867, 1875, 1880, 1885, 1900, 1905). For the second period (every five years, from 1910 to 2005), we apply instead a sampling procedure using the following scheme of dates: 2, 4, 6, and 8 January and 2, 4, 6, and 8 July. The choice of days is based on a division of the year into two segments of six months. A further reason to apply this scheme is that it partially represents the recurrent repetition schemes of the ads that we found throughout the years—namely, that the same ads, marked with the same job IDs, were frequently published at typical intervals of two days. A final reason for choosing this scheme is that including July also facilitates a view of the seasonal job market, linked to the traditional tourism and leisure-time practices during summer in Italy—

for example, the increasing request for seasonal fixed-term jobs in the hospitality industry, and for child-care during the school summer vacations.

In order to check the robustness of this sampling approach, we collected, for four reference years, a larger sample of ads published in the newspaper for each of those years. The four reference years are 1867, 1900, 1950, and 2000. The first two, 1867 and 1900, are completely inserted in the dataset. For the year 1950, the daily ‘Job Offers’ sections are all inserted, whereas an occasional sub-section collecting some offers addressed specifically to salesmen is inserted instead only for the eight sample reference days.<sup>10</sup> For the year 2000, given the enormous volume of ads, the reference is based on the whole of January, the first ten days of February, and the first ten days of July. The robustness check was then implemented by comparing the percentage weight of each of the 44 ISCO sub-groups for the whole year and for the sample.

In Table 3, we report the total number of single job ads per year and per sample, according to the sampling strategy used in that year. For example, there are three ads in total in the sample used for 1867, which means that in that year there were only three non-repetitive ads for the full months of January and July. In 1900, there are 118 ads throughout the same two months. For 1950 and 2000, the sampling total number is collected in the eight reference days of January and July.

Year	Total job ads number for the whole year	Total job ads for sample, according to the sampling strategy used for that year
1867	46	3
1900	756	118
1950	5,167	388
2000	1,446	185

*Source:* this text.

**Table 3.** Total and sample number of job ads by benchmark year

<sup>10</sup> For this year, we exclude the salesmen section in the robustness check. In our long-term analysis, for 1950 we use instead the usual 8-day sample for which we collected job offers from both sections.

In Table 4, we report the results for the robustness check. This shows the average difference for each of the 44 ISCO occupational sub-groups between the sample and the benchmark years. The error decreases in the central years and increases again in the final years, owing to the larger number of ads published in the mid-twentieth century. For the four reference years, the cumulative average error is ca. 1.44 per cent. We therefore consider our sampling method able to offer a representative picture of the actual trends for the yearly job offers per sector.

Year	Average error between whole year and sample
1867	4.35%
1900	1.10%
1950	1.17%
2000	2.16%
Average error for the whole dataset – weighted (from Table 3)	
	1.44%

**Table 4.** Average error in the comparison between job ads total and sample per benchmark year

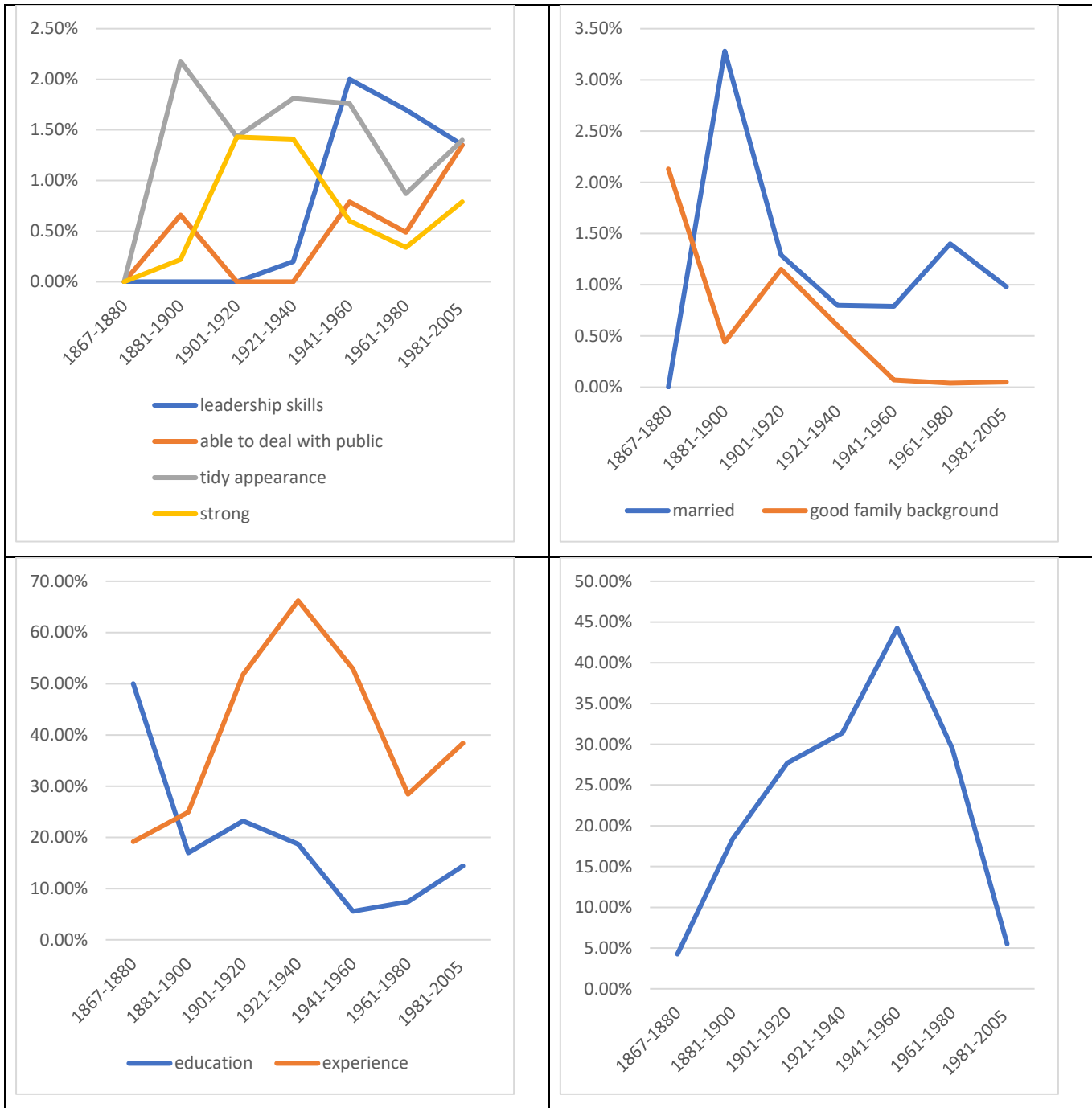
**3. Job requirements in Piedmont’s labour market in the long term**

As noted in Section 1, we look at the demand for labour by focusing on how the socioeconomic background (relation I in Fig. 1) and education (relation II in Fig. 1) of the labourers entered the application process, in addition to the already existing task specialization requirements. Based on Modernization Theory, it is expected that the effect of job-unrelated factors (i.e. family-related factors) on the occupational (ISCO) rank should decline over time, whereas the effect of education on occupations should increase. In Table 5 and Figure 2, we report analytical statistics for both groups of job characteristics, socioeconomic background and education/experience, over time (every 20 years).

	married	female	leadership skills	able to deal with public	good family background	tidy appearance	strong	education	experience
1867-1880	0.00%	4.26%	0.00%	0.00%	2.13%	0.00%	0.00%	50.00%	19.15%
1881-1900	3.28%	18.34%	0.00%	0.66%	0.44%	2.18%	0.22%	16.95%	24.89%
1901-1920	1.29%	27.69%	0.00%	0.00%	1.15%	1.43%	1.43%	23.18%	51.79%
1921-1940	0.80%	31.39%	0.20%	0.00%	0.60%	1.81%	1.41%	18.67%	66.20%
1941-1960	0.79%	44.25%	2.00%	0.79%	0.07%	1.76%	0.60%	5.56%	52.89%
1961-1980	1.40%	29.51%	1.70%	0.49%	0.04%	0.87%	0.34%	7.44%	28.45%
1981-2005	0.98%	5.51%	1.35%	1.35%	0.05%	1.40%	0.79%	14.41%	38.39%

*Note:* education consists of the sum of primary, secondary, and higher education.

**Table 5.** Job ads' shares by socio-economic characteristics and education level/experience.



**Figure 2** Share ads by socio-economic characteristics

The data show the following trends. First, socio-attitudinal characteristics ('leadership skills' and 'ability to communicate with the public') began to rise in importance only in the years 1950–1960. Both characteristics can be considered part of those 'soft skills' increasingly requested in the labour market already from the 1960s (Ortiz and MacDermott 2017), together with the rise of a modern service-based society (Sakthivel Murugan and Sujatha 2021). Indeed, starting from the 1980s, the increased presence of this group of characteristics should be seen in relation to the growth of tertiary jobs in the area and as an expression (especially for assistant jobs in the commercial sectors) of the requirement 'able to communicate with the public'.

A declining trend over the entire period is evident in the requirement for family-background characteristics ('being married' and 'having a good family background'). This finding is in line with Modernization Theory's predictions. Rising 'soft skills' and declining 'family background' requirements suggest indeed that a process of general abandonment of these types of job-unrelated characteristics, in favour of job-related characteristics, was clearly in action already between 1920 and 1950. This finding partially contradicts the findings of Schulz et al. (2014) for the Netherlands. However, we should stress that Schulz et al. (2014) covered the period 1870–1939 and thus essentially ended their study before this changeover may have become apparent.

The remaining characteristics—physical appearances ('tidy appearance' and 'strong'), gender, and education/experience—all show a peak around 1950, with a decrease to ca. 1980. However, four different explanations can be offered for these patterns of rising and declining shares in terms of mentions in job ads.

First, in the initial years of *La Stampa*, the demand for all these factors together was essentially absent since, at that time, *La Stampa* was primarily addressed to the Piedmont bourgeoisie and not to the urban and rural proletarian classes, who still had low levels of schooling. This means that mentioning characteristics pertaining to socio-economic background as well as to education background (also in terms of level of experience) was often of secondary importance for the employers publishing ads for job vacancies addressed to the local bourgeoisie, typically for middle- or high-ranking occupations. Physical attributes, for example, were a type of requirement usually connected to jobs in the lower occupational ranks, not of interest to the bourgeoisie and therefore usually absent in the job ads of this period. The low number of ads addressed to women should in the same way be related to the lower (compared with males) female participation rate in the labour force (Daniele and Malanima 2013), to the lower rates of literacy among women (Ciccarelli and Weisdorf 2019), and to a general characterization of women in this period

more as ‘new readers’ of novels than of newspapers (Lyons 2001). Similarly, references to the experience level of the applicants were also initially less present, due to the self-selection of the educated readers, often already practitioners of some profession. Indeed, we find that ca. 90 per cent of all the job ads in Piedmont in this period were for positions as professionals (e.g. legal, business, health, teaching). High-ranking jobs (codes 1–3) had therefore much higher shares of the ads relative to the total before 1900, while the opposite was true for low-ranking occupations. Hence, when analysing these data, it is advisable to start around 1900 to avoid this bias.

Second, the peak in the mentions of the characteristics related to the ‘physical appearance’ of applicants (‘tidy appearance’ and ‘strong’) between 1921 and 1940 could have been influenced partly by cultural factors related to the fascist period (1921–1943). For example, it is possible that the view of aesthetics and society as a cultural dimension of the fascist era (Mosse 1996: 245) played a role in the growing demand for labourers of both sexes with a ‘tidy appearance’ in the period 1921–1940 compared with 1901–1920. This type of requirement was primarily found in hospitality jobs, typically for women interested in working as waitresses or as clerks in secretarial positions (e.g. ‘*segretaria*’, ‘*dattilografa*’), and at the same time in the sales sector, especially for men looking for jobs as salesmen (‘*piazzista*’).

Third, one might explain the decreasing number of the requests explicitly referring to the education level of the applicant from the 1950s as an indirect consequence of the increasingly widespread levels of literacy in Piedmont and in Italy in general (see Ciccarelli and Weisdorf 2019). Having a certain basic level of education became a kind of implicit prerequisite for job applicants and thus not a necessary specification in such job ads. The level of ‘experience’, on the other hand, was maintained throughout the years (also after the 1950s) in its importance as a determinant in accessing the labour market. Whereas the frequency of this requirement was still ca. 40 per cent of the total throughout the overall period 1950–2005, the reduced figures in the first part of this period (1950–1970) can be explained in relation to the higher general demand for industrial workers in Piedmont during the years of the so-called *miracolo economico*, which somehow made the job application process less strict. For example, the requests for workers to be employed in ‘Food Processing, Woodworking, Garment and Other Craft and Related Trades’ went from 10 per cent in 1955 to 0.5 per cent in 2000 and were then absent in 2005. The job positions for ‘Stationary Plant Operators’, which were 9 per cent in 1970,<sup>11</sup> had declined to 3 per cent by 1995 and were absent in 2005.

---

<sup>11</sup> In line with the growth of the number of the employed in the metallurgy sector in Italy during this phase (see e.g., Zamagni 1987).

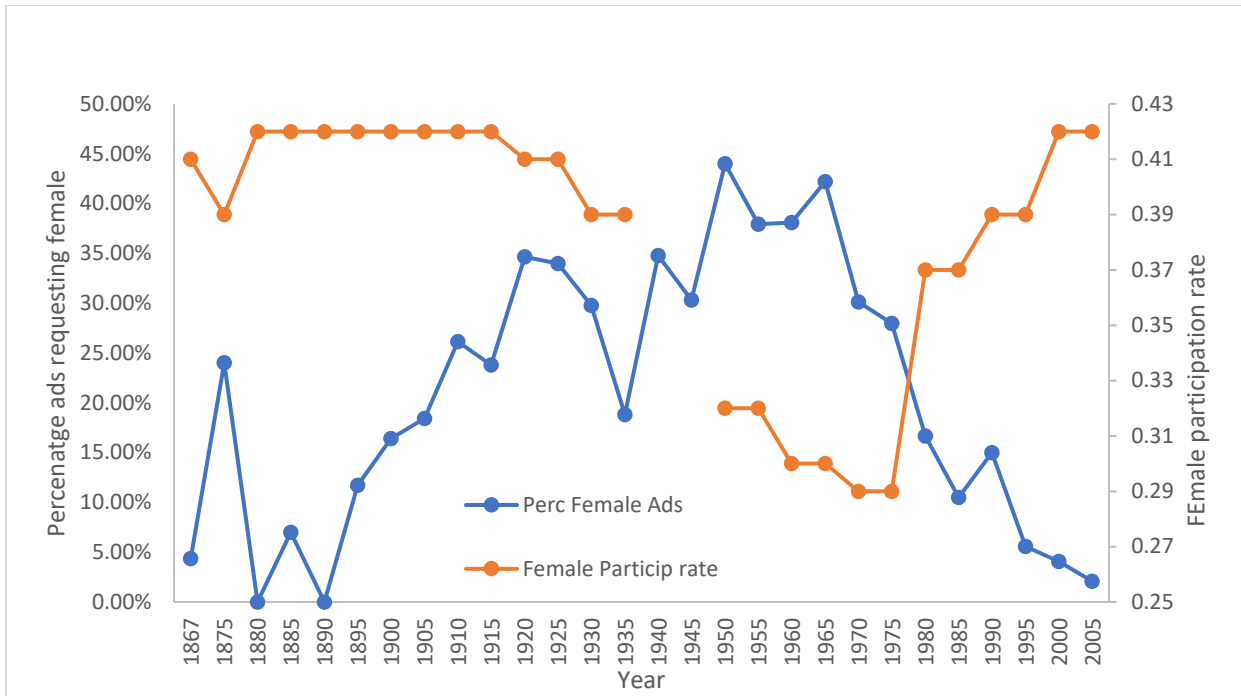
Fourth, female-only ads follow an inverted U-shaped curve over the long term (Fig. 2). The peak in occurrence of these job ads can be found between the 1920s and the 1950s, declining afterwards. The increasing number of ads addressed to women-only from the end of the nineteenth century until the 1950s can be assessed in relationship to the rising participation rate of women in the labour force in Piedmont, which we report in Table 6. Although the missing values for the 1940s—a consequence of the abandonment of plans for new census surveys during the war years, until 1951<sup>12</sup>—make the comparison incomplete for those years, the U-shaped curve for female participation in the long term calculated by Daniele and Malanima (2013) follows a roughly inverse proportional trend, with the distribution of the job ads addressed to women-only.

	1861	1871	1881	1891	1901	1911	1921	1931	1936	1951	1961	1971	1981	1991	2001
Piedmont	0.41	0.39	0.42	0.42	0.42	0.42	0.41	0.39	0.39	0.32	0.30	0.29	0.37	0.39	0.42
Italy	0.39	0.36	0.39	0.37	0.36	0.35	0.33	0.32	0.34	0.28	0.26	0.27	0.34	0.37	0.4

**Table 6.** Female participation rate, share of total active population per year. Source: Daniele and Malanima (2009)

<sup>12</sup> <https://www.istat.it/it/censimenti/censimenti-precedenti>





**Figure 3** Percentage female ads and female participation rates, 1867–2005

Figure 3 seems to suggest that in periods with low female participation rates, due to a lack of employees, there was a larger demand for women in newspaper job ads. In addition, the drop in the number of ads for women from the late 1970s—concurrent with an upwards turn in the female participation rate—should instead be attributed to the introduction of a new set of laws (903/77<sup>13</sup> and 125/91<sup>14</sup>) fostering equal opportunities to access the labour market in Italy. In this period, indeed, the ads began to be addressed to both sexes (*‘Il presente annuncio è rivolto ad entrambi i sessi, ai sensi delle leggi 903/77 e 125/91’*<sup>15</sup>).

<sup>13</sup> <https://www.gazzettaufficiale.it/eli/id/1977/12/17/077U0903/sg>

<sup>14</sup> <https://www.gazzettaufficiale.it/eli/id/1991/04/15/091G0161/sg>

<sup>15</sup> “This advertisement is addressed to both sexes according to the laws 903/77 and 125/91”

#### 4. The effect of socio-economic background and education on occupational ranking

Just having certain characteristics mentioned in ads does not tell us much about how these persons ended up in a job. In other words, the shift in the job ads from personal to job-related characteristics, combined with an overall decline in explicitly requested job characteristics, still leaves undetermined whether socio-economic characteristics and education affected occupational choices and job rankings.

In order to estimate the effect of socio-economic characteristics and education on occupational ranking, we introduce an ologit model, where our explanatory variables are regressed on the ranked (through ISCO classification) occupational codes. The vector of socio-economic explanatory variables includes family ('married', 'sex', 'with good family background'), physical appearance ('strong', 'tidy appearance'), and social-attitudinal characteristics ('leadership skills', 'ability to work with the public'). The vector of education contains both 'education' and 'experience'. We added to the list of explanatory variables 'public company' (a variable describing a hiring process related to a public employer), in order to capture the effect of government enterprises. The model's equation can then be described as follows:

$$Pr(Occ_{i,t}) = Pr(b_1X_{i,t} + b_2Y_{i,t} + b_3Z_{i,t} + u_{i,t})$$

where  $Occ$  is occupation in occupation  $i$  (ordered through an ordinal scale based on the ISCO code) and year  $t$ . The vectors  $X$ ,  $Y$ , and  $Z$  are respectively social characteristics, educational characteristics, and correction factors (public/private company and time).

It is important to stress that the aforementioned indicators can, in some cases, include both a visible characteristic and also the possible presence of 'unknown' characteristics—for example, besides a dummy variable 'married' or 'not married', there is a third category: 'no information on marriage'. Our results, grouped per variable, can be summarized as follows (see also Table 7):

- a) A one-unit rise in 'public' decreases the log odds of being in a higher occupational group by 1.56 (working in a public company leads to a higher occupational rank).
- b) Being married increases the log odds of being in an occupational group by 1.076 (being married leads to a lower occupational rank).

- c) Being female increases the log odds of being in a high-coded occupational group by 0.163 (being female leads to lower occupational rank).
- d) Having leadership skills decreases the log odds of being in a high-coded occupational group by 0.731 (having leadership skills leads to a higher occupational rank).
- e) Being able to deal with the public decreases the log odds of being in a high-coded occupational group by 1.048 (being able to deal with the public leads to a higher occupational rank).
- f) Being from a good family is insignificant.
- g) Having a tidy appearance reduces the log odds of being in a high-coded occupational rank by 0.800 (being tidy leads to a higher occupational rank).
- h) Being strong increases the log odds of being in a high-coded occupational group by 0.343 (being strong leads to a lower occupational rank).
- i) Having a primary, secondary, and tertiary education reduces the log odds of being in a high-coded occupational group (the higher the applicant's level of education, the greater the chances of accessing high-ranking occupations).
- j) Being experienced reduces the log odds of being in a high-coded occupational group by 0.18 (having experience increases the chances of being hired in high-ranking occupations).

We argue that in the long term these results are in line with the predictions of Modernization Theory, with a decline over time in the importance of the job-unrelated characteristics (such as the social background of applicants) in favour of job-related characteristics (such as education and experience levels) as key factors to access differently ranked occupations.

We find that a job application process, initiated through the main local newspaper, started by a public institution tended to involve high-skilled jobs. At the same time, job ads containing requirements regarding the marital status of the applicant, the physical specification of being 'strong', or specified as women-only tended in general to pertain to low-skilled jobs. Women responding to 'female-only' jobs self-selected themselves for jobs related in particular to domestic services and light manufacturing; indeed, we find the highest occurrence of this type of ads for jobs coded with 73 (handicraft and printing), 75 (food processing and garments), and 91 (cleaners and helpers). The picture regarding the requirement for the characteristic 'married' is more diversified: marriage was an asset only for certain jobs—primarily for jobs coded with 54 ('protective services workers', including inter alia housekeeping) and with 91 ('cleaners and helpers').

The group of attitudinal characteristics, including ‘leadership skills’ and ‘able to deal with public’, together with the physical characteristic of possessing a ‘tidy appearance’ brought higher chances to have a positive response in a job application process for high- and medium-skilled jobs—where the characteristic ‘tidy appearance’, as mentioned above, in the second part of our periodization first sharply declined between the 1950s and the 1980s and then increased in the context of the rise of the services ‘soft skills’.

Not surprisingly, the same positive effect was provided by higher levels of education. Finally, possessing a ‘good family background’ appears not to be significant over the long term. It is therefore a characteristic that either did not have an effect on the chances of being hired in any ranked job, or it had an equal effect among all the job classes.

	1867-2005		1867-1940		1950-2005	
	Variable	z	variable	z	Variable	z
D public sector company	-1.561	-8.48	-1.204	-5.30	-1.255	-3.01
D married	1.076	3.32	0.081	0.12	1.414	3.75
D marriage not mentioned	-0.076	-0.27	-1.529	-2.78	0.301	0.92
D female	0.149	3.82	0.294	2.40	0.139	3.35
D sex not mentioned	-0.717	-18.19	0.119	1.10	-0.877	-19.93
D leadership skills	-0.731	-5.20	n.a.		-0.765	-5.40
D able to deal with public	-1.047	-5.57	-0.107	-0.09	-1.069	-5.55
D good family background	0.265	0.59	0.533	0.99	-0.001	0.00
D tidy appearance	-0.800	-5.86	-0.439	-1.19	-0.825	-5.50
D strong	0.343	1.64	1.494	3.25	0.107	0.44
D primary education	-1.407	-2.24	-1.391	-2.11	-0.54	-2.05
D secondary education	-3.226	-2.67	-3.595	-2.89	-1.381	-19.21
D tertiary education	-4.485	-3.69	-4.341	-3.43	-2.905	-20.86
D education not mentioned	-1.709	-1.41	-2.029	-1.64	n.a.	
D experience	-0.180	-2.38	-0.340	-1.98	-0.167	-1.94
D experience not mentioned	-0.116	-1.54	-0.593	-3.38	-0.032	-0.37
No. Obs.	12,274		1,553		10,464	

**Table 7.** Regression of socio-economic characteristics on occupation, 1867–2005

Dividing our periodization into two time periods, 1867–1940 and 1940–2005, we find that the impact of the factors analysed can vary over time. The reason for choosing these periods is to capture the period of fast growth and modernization that started after World War II. In order to evaluate them, we use the logit regressions, reported in Table 7 as regressions 2 and 3. The social characteristic ‘married’, in particular for women, is a feature that in all time periods increased the likelihood of being hired in low-ranking jobs—although it has to be remembered that starting from the 1990s, as mentioned above, the job ads with a specified gender were all progressively addressed ‘to both’. Possessing ‘a good family background’ and being ‘strong’ become insignificant in the more recent time period, whereas these characteristics are significant in the earlier period. Therefore, for these two characteristics, it is possible to argue that they had an effect, on the chances of being hired, only between the second half of the nineteenth century and the 1940s, whereas their role became null from the years of the *miracolo economico* (the period of fast economic growth in Italy between the 1950s and the 1960s) to the first decade of the 2000s (see also Section 5). Furthermore, the positive effect of education on occupational ranking, even though still significant (as predicted by Modernization Theory), nevertheless becomes lower in the 1950–2005 period. As suggested above, we ascribe the lowered weight of education to the reduced requirement for this indicator, since widespread higher literacy levels during this period in Italy made such a requirement implicit in many job ads. Finally, the effect of the group of ‘soft skills’, which is null in the first period, becomes significant and leads to higher-ranking jobs in 1950–2005.

## 5. Discussion and conclusion

Modernization Theory suggests that the importance of job-unrelated social characteristics, as factors in accessing the labour market, tend to decline over time in favour of job-related social characteristics. Furthermore, in the long run, the effect of job-unrelated characteristics on occupation—namely, on the possibility of a positive outcome in the job hiring process—declines earlier for high- and medium-skilled occupations.

We tested this theory for the labour market of Piedmont in Italy, by collecting and analysing samples of job ads from the local newspaper *La Stampa*, every five years from 1867 to 2005. The business vitality of the intra-regional markets; the geographical endowments, in particular in terms of water resources (see Fenoaltea 2006; Missaia 2014); the investments in human capital (Ciccarelli and Weisdorf

2019); and the strong presence of mutual aid networks (Cappelli 2014)—these were all factors that contributed to the emergence of a network of industrial clusters in Piedmont. Turin, most evidently from 1911, appeared as one of the three vertices of a geographical area called the ‘*triangolo industriale*’ (industrial triangle), together with Genoa in Liguria and Milan in Lombardy (Daniele et al. 2018). The industrial triangle was characterized later in the 1950s by the highest density of industrial clusters in Italy (Daniele et al. 2018). Throughout the first half of the twentieth century, textiles, tool production, printing, and food processing manufactures emerged and established networked structures in this region (see Zamagni 1987; Fenoaltea 2004; Rolfo 2020); indeed, the total job ads offering positions in these sectors went from 7 per cent of the total in 1895 to circa 23 per cent in 1925 and to around 29 per cent in 1945.

Piedmont, in this first phase, and despite being the region in Italy with the highest levels of literacy (Ciccarelli and Weisdorf 2019) and female participation in the labour market—see Daniele and Malanima (2013) and Table 6—was still a ‘closed’ society, where in Modernization Theory’s terms the family of origin and the marital status of an individual could play a major role in one’s socio-economic achievements (Marks 2009:918). In this respect also, educational attainment was not only inexorably linked to the financial resources and social status of an individual’s family but, moreover, played a less crucial role, compared with the later phase, in determining the chances of a labourer to access the labour market at any occupational level. In this context, job-unrelated physical requirements emerged as potentially alternative assets facilitating access to the job market. In a certain way, possessing a ‘tidy appearance’ or being ‘strong’ (the latter in low-ranking jobs) could increase the chances of having a favourable outcome in a job application process, even when the applicant did not have a ‘good’ family background. This was true for both sexes but most notably for women, who were recruited through the newspapers especially for low-skilled jobs.

The strong presence of the traditional manufacturing sector (e.g. textiles, tool production, food processing)—together with the rise of conglomerates with more modern forms of division of labour in the chemical, steel, and, most importantly, automobile production—constituted the industrial platform from which the so-called *miracolo economico* took-off in Piedmont (and in Italy) from the 1950s. This economic boom lasted until the end of the 1980s, when the beginning of a long-term crisis in the automotive and steel industries (Whitford and Enrietti 2005) set in, leading to a process of structural change in the weight of production factors. On the one hand, there was a downsizing of the manufacturing sector; on the other hand, the tertiary sector expanded in Piedmont as well as at the national level in Italy (see e.g., Zamagni 1987; Zeli et al. 2011).

In the context of these economic and social changes, socio-economic achievements (using again the lexicon of Modernization Theory) became more universal. Urbanization dynamics, higher levels of literacy, and an expansion of the welfare state—in line with the model of Beller and Hout (2006)—all played a role in reducing the weight of factors such as the social background, marital status, and gender of the labourer as determinants in accessing the job market in Piedmont. Furthermore, as occurred for the group of ‘physical’ attributes between the nineteenth and the twentieth century, possessing ‘soft skills’ emerged in this later phase as a complement—or even alternative—to education and experience in the job application process.

In conclusion, we find that the main hypotheses of Modernization Theory are confirmed for Piedmont between 1867 and 2005. First, in the job ads, references to the family background and to the gender of the applicant tend to decline or even disappear over time. On the other hand, requirements for ‘soft skills’ increase in the more recent decades, concurrently with the rise of a services-based society. In apparent contrast with Modernization theses, however, references to the education level of applicants decline over time. Yet, we argue that this apparent contrast with Modernization Theory is consistent with the type of data source used since the education indicator is partially biased in the job ads that we collected – given the over-representation of readers with high levels of education in the first years of the *La Stampa*’s publication (1867-1900), and then, from the 1950s onwards, to the practice of considering education important for a job position without explicitly mentioning it as a requirement. As a consequence of the same factors, we also find a decrease in the size of the however still positive effect of educational level on the occupational status in the period 1950–2005. The effect of socioeconomic characteristics such as ‘family background’ or gender on occupation instead declines or becomes non-significant from the 1950s onwards. Finally, the job-unrelated characteristic ‘being married’ declines in the long term—as predicted by Modernization Theory—but has a significant effect on the likelihood of being hired in a low-skilled job throughout our period of study.

## References

Atalay, E., Phongthientham, P., Sotelo, S. Tannenbaum , D. 2018. New technologies and the labour market. *J Monetary Econ.* 97, 48-67.

- Basile, R., Ciccarelli, C., Groote, P. 2021. The legacy of literacy: evidence from Italian regions. *Reg Stud*, 56(5), 794-807.
- Bell, D. 1973. *The Coming of Post-Industrial Society*. New York, Basic Books.
- Beller, E., Hout, M. 2006. Welfare States and Social Mobility: How Educational and Social Policy May Affect Cross-National Differences in the Association between Occupational Origins and Destinations. *Res Soc Strat Mob*, 24(4), 353-65.
- Breen, R., Jonsson, J. O. 2005. Inequality of Opportunity Perspective. *Annu Rev Sociol*, 31, 223-43.
- Brunello, G., Comi, S., Lucifora, C. 2000. The Returns to Education in Italy: A New Look at the Evidence. Available at SSRN: <https://ssrn.com/abstract=224239> or <http://dx.doi.org/10.2139/ssrn.224239>
- Cappelli, G. 2014. The uneven development of Italy's regions, 1861-1936: a new analysis based on human capital, institutional and social indicators. [Doctoral dissertation, European University Institute].
- Ciccarelli, C., Weisdorf, J. 2019. Pioneering into the past: Regional literacy developments in Italy before Italy. *Eur Rev Econ Hist*. 23(3), 329–364,
- Clark, G. 1994. Factory Discipline. *J Econ Hist*. 54(1), 128–163.
- Daniele, V., Malanima, P. 2013. Falling Disparities and Persisting Dualism. Regional Development and Industrialisation in Italy, 1891-2001. *Invest Hist Econ*. 10(3), 165-76.
- Daniele, V., Malanima, P., and Ostuni, N. 2018. Geography, market potential and industrialization in Italy 1871–2001. *Pap Reg Sci*. 97(3), 639-662.
- Darity, William A., and Patrick L. Mason. 1998. "Evidence on Discrimination in Employment: Codes of Color, Codes of Gender." *JEP*, 12 (2): 63-90.
- Dartey-Baah, K., Amoako, G. K. 2011. Application of Frederick Herzberg's Two-Factor theory in assessing and understanding employee motivation at work: a Ghanaian Perspective. *Eur J Business Manag*. 3(9), 1-8.
- DeVaro, J., Ghosh, S., Zoghi, C. 2012. Job Characteristics and Labor Market Discrimination in Promotions: New Theory and Empirical Evidence. *Econ Mod: Macroeconom eJ.*, Available at SSRN: <https://ssrn.com/abstract=2135198> or <http://dx.doi.org/10.2139/ssrn.2135198>
- DiPrete, T. A., Grusky, D. B. 1990. Structure and Stratification for American Men and Women. *Am J Sociol*. 96(1), 107-43.
- Felice, E., and Vecchi, G. 2015. Italy's Modern Economic Growth, 1861–2011. *Entrepr & Soc*, 16(2), 225–248.
- Fenoaltea, S. 2004. Textile production in Italy's regions, 1861-1913. *Riv Stor Econom*, 2, 145–174.



- Fenoaltea, S. 2006. *L'economia italiana dall'Unità alla Grande Guerra. Collezione storica*, Laterza, Bari.
- Forno, M. 2012. *Informazione e potere: Storia del giornalismo italiano*. Laterza, Bari.
- Grant, A.M., Fried, Y., and Juillerat, T. 2011. Work matters: Job design in classic and contemporary perspectives. In S. Zedeck (ed.), *APA handbook of industrial and organizational psychology*, 417-453. Washington DC, American Psychological Association.
- Gabellieri, N., Scaglione G. 2021. Per una geografia della stampa: distribuzione spaziale e rappresentazione cartografica della diffusione dei quotidiani cartacei Corriere della Sera, La Repubblica e La Stampa in Italia (2004-2019). *Semestrare di Studi e Ricerche di Geografia*. 33(2), 65-81.
- Hackman, J. R., Oldham, G.R. 1975. Development of the job diagnostic survey. *J Appl psychol.* 60(2), 159–170.
- Herzberg, F., Mausner, B., Bloch Snyderman, B. 1959, repr. 2011. *The motivation to work*. New Brunswick and London, Transaction Publishers.
- Herzberg, F. 1966. *Work and the nature of man*. Cleveland, World Publishers co.
- Johns, G. 2006. The essential impact of context on organizational behavior. *Acad Manage Rev*, 31, 386-408.
- de Kort, W. L. P. M. 1940. *De arbeidsbemiddeling in Nederland*. Alphen aan den Rijn, N. Samson.
- Kuhn, P., Shen, K. 2012. Gender Discrimination in Job Ads: Evidence from China. *Q J Econ*, 128(1), 287-336.
- Kunze, L., Suppa, N. 2013. Job Characteristics and Labour Supply, *Ruhr Economic Papers*, No. 418.
- Lancaster, K. 1966. A New Approach to Consumer Theory. *J Polit Econ.* 74(), 132–157.
- Landes, D.S. 1986. What Do Bosses Really Do? *J Econ Hist.* 46(3), 585–623.
- Lee S.M., Lee, C.K. 2006. IT managers' requisite skills. *Commun ACM.* 49, 111-114.
- Lyons, M. 2001. *Readers and Society in Nineteenth-Century France: Workers, Women, Peasants*. New York, Palgrave.
- MacMillan, L., Tyler, C., Vignoles, A. 2015. Who Gets the Top Jobs? The Role of Family Background and Networks in Recent Graduates' Access to High-status Professions. *J Soc Policy.* 44(3), 487-515.
- Marks, G.N. 2009. Modernization Theory and Changes Over Time in the Reproduction of Socioeconomic Inequalities in Australia. *Soc Forces.* 88(2), 917–944

- Missiaia, A. 2014. Industrial location, market access and economic development: regional patterns in post-unification Italy. [Doctoral dissertation, London School of Economics and Political Science].
- Mosse, G. L. 1996. Fascist Aesthetics and Society: Some Considerations. *J Contemp Hist*. 31(2), 245-252.
- Oldham, G. R., and Hackman, J. R. 2010. Not what it was and not what it will be: The future of job design research. *J Organ Behav*, 31, 463–479.
- Ortiz, L., and MacDermott, C. 2017. Beyond the Business Communication Course: A Historical Perspective of the Where, Why, and How of Soft Skills Development and Job Readiness for Business Graduates. *The IUP Journal of Soft Skills*, 11(2), 7-24,
- Paterson, L., Iannelli, C. 2007. Social Class and Comparative Study of England, Wales, and Scotland. *Sociol Educ*. 80(4), 330-58.
- Rafaeli, A., and Oliver, A.L. 1998. Employment ads: A configurational research agenda. *J Manage Inquiry*, 7(4), 342-358.
- Rinaldi, A., Tagliacozzi, G. 2022. Women directors in Italy: 1913–2017. *Bus Hist*, DOI: [10.1080/00076791.2021.2015332](https://doi.org/10.1080/00076791.2021.2015332)
- Rolfo, S. 2020. Storia dell'industria delle macchine utensili in Piemonte dalle origini alla seconda guerra mondiale. CNR-IRCrES Working Paper. Istituto di Ricerca sulla Crescita Economica Sostenibile. Available at <http://dx.doi.org/10.23760/2421-7158.2020.005>
- Sakthivel Murugan, M., Sujatha, T. 2020. A Study on Soft Skill and Its Impact of Growth and Productivity in Service Industry. *J Composit Theory*, 8 (12), Available at SSRN: <https://ssrn.com/abstract=3743940>
- Schulz, W., Maas, I., Van Leeuwen, M.H.D. 2014. Employer's choice – Selection through job advertisements in the nineteenth and twentieth centuries. *Research Social Stratific Mobility*, 36, 49-68.
- Settis, B. 2016. La grande fabbrica fordista. Culture politiche e scienze sociali alla prova del neocapitalismo. *Cahiers d'études italiennes*, 22, 189-202.
- Smith, A. (1776, repr. 1904). *An Inquiry into the Nature and Causes of the Wealth of Nations*, London, Methuen & Co., Ltd. (Edwin Cannan, ed.)
- Smith, D.B., Shields, J. 2013. Factors Related to Social Service Workers' Job Satisfaction: Revisiting Herzberg's Motivation to Work. *Admin Soc Work*, 37(2), 189-198.
- Sodhi, M., Son, B.-G. 2010. Content analysis of OR job advertisements to infer required skills. *The J Oper Res Soc*, 61(9), 1315–1327.

- Taylor, F. W. 1911. *The Principles of Scientific Management*, New York, NY, USA and London, UK: Harper & Brothers,
- Todd, P.A., McKeen, J.D., Gallupe, R.B. 1995. The evolution of IS job skills: A content analysis of IS job advertisements from 1970 to 1990. *MIS Quart*, 19, 1-27.
- Wegman, L.A., Hoffman, B.J., Carter, N.T., Twenge, J.M., Guenole, N. 2018. Placing job characteristics in context: Cross-temporal meta-analysis of changes in job characteristics since 1975. *J Manage*, 44(1), 352–386.
- Whitford, J., Enrietti, A. 2005. Surviving the Fall of a King: The Regional Institutional Implications of Crisis at Fiat Auto. *Int J Urban Regional*, 29, 771-795.
- Wolbers, M.H.J., De Graaf P.M., Ultee, W.C. 2001. Trends in the Occupational Returns to Educational Credentials in the Dutch Labor Market: Changes in Structures and in the Association? *Acta Sociol.* 44(1), 5-19.
- Zamagni, V. (1987). A century of change: trends in the composition in the italian labour force, 1881-1981. *Hist. Soc. Res.*, 12(4), 36-97
- Zangger C., Glauser D., Becker R. 2018. The Impact of Modernization and Labor Market Conditions on the School-to-Work Transition in Switzerland: A Dynamic Analysis of the Period from 1946 to 2002. In: Tillmann R., Voorpostel M., Farago P. (eds) *Social Dynamics in Swiss Society. Life Course Research and Social Policies*, vol 9. Springer, Cham. [https://doi.org/10.1007/978-3-319-89557-4\\_10](https://doi.org/10.1007/978-3-319-89557-4_10)
- Zeli, A., Dosi, G., Grazzi, M., Tomasi, C. 2011. L'industria manifatturiera negli ultimi due decenni prima della crisi: le micro-dinamiche sottostanti ai trend aggregati. In: *Economia e politica industriale*, 37, 1. Milano : Franco Angeli.