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**Over-education and labour  
market: a snapshot**

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# Over-education and labour market: a snapshot

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*The paper proposes a brief analysis of the literature to highlight what were the changes that led to the transformation of the occupational structure; there are two main macro-trends: increased use of technology and its impact on the employment structure; educational expansion and therefore an increase and diversification of educational qualifications. The contradictions of so-called post-Fordism are underlined, which on the one hand requires “super-worker 4.0”, flexible, educated and adaptable to change, on the other hand creates the conditions for a widespread under-employment. In particular, from literature, the over-education phenomenon was analyzed connected both to educational system that fails to adapt to socio-economic changes and to production system that is not innovative and internationally competitive. In Italy, although the number of graduates in Italy is growing, it is still below the European average. Despite such a low offer of graduates, there is also a high percentage of over-educated in Italy, indicator both of the lack of connection between the educational and production system and of the fact that the Italian one is a labour market strongly oriented to internal production and high intensity of unskilled and low-skilled labour.*

## INTRODUCTION

Many factors have contributed to the change in the labour market and its employment structure over time. In Italy, reforms have led to a two-fold outcome: on one hand, a deregulated labour market, on the other hand, a strong segmentation and polarization of employment which has affected in particular the weakest segments of the workforce, including young workers (Reyneri, 2017; Maestripietri & Ranci, 2016). This has led to many contradictions: an excess of flexibility, often translated into precariousness; the description of a "super-worker 4.0" and the presence, in reality, of various forms of underemployment; the need for skills and their underestimation. The crisis of the Fordist model has brought with it a decline in manual labour and the growth of educational levels to respond to the increasingly specific and specialized demand for

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the labour market. All this has determined, as mentioned, the process of polarization and deindustrialization that have intensified with the 2008 crisis.

In Italy, an unprecedented fact emerges: highly skilled workers, especially young people, have absorbed much of the burden of the crisis. Until the Fordism's crisis, life courses were fairly stable and institutionalised by both the State and the labour market, which played a central role in defining the passages not only of career but also of life. Subsequently, the life paths are increasingly de-institutionalized, elongated and fragmented (Accornero, 2013). The problems related with territorial inhomogeneity, with specialization and with the size of companies do not only generate barriers to entry in the labour market but also an inefficient use of human capital: underemployment is defined as when there is inefficient use of hours worked and when there is a mismatch between the educational and productive system; in this case the over-education phenomenon or under-education phenomenon may play a role.

The transition to society (and economy) of knowledge has shifted the focus from the factory's worker to new figures distant from the Fordist workers due to skills, education, new approaches to the labour market (Ponzellini, 2017), effectively dropping the analysis of work from traditional organizational contexts (e.g. factories). Work no longer represents a guarantee of linearity in production but must be replaced by a flexible and infinitely replicable figure. The lack of attachment to work and the confusion in life paths that this generates (Sennett, 1998), calls into question the importance of work as narrative and personality development: that is, the Weberian concept of Beruf is questioned. In the knowledge society, knowledge and competence can shape power relations, in every area of social life. Reality is more complex, difficult to define in laws, be they economic or social, that try to describe and interpret it. The spread of new technologies is favoring a new mode of production based, precisely, on the dissemination of knowledge and in a world in which knowledge workers are in global competition, education has assumed crucial importance. However, if the possibility of possessing knowledge also implies an increase in the power of control, then what is being formed, together with a new model of society, is also a new form of social asymmetry.

The paper is organized as follows: the first part deals with the transformation of the employment structure in western societies in the light of socio-economic changes. The second part explores the relation between qualified education, necessary in the so-called knowledge society, and inequalities that arise due to the lack of complementarity between education system and production system; in particular, reference is made to the

overeducation phenomenon. The third part focuses on the description of the Italian case and its contradictions. The conclusions try to highlight the emerged nodes and suggest questions for subsequent research lines.

## **1. EMPLOYMENT AND OCCUPATIONAL REGIMES IN WESTERN CAPITALISMS**

The employment structure is transforming both the supply and demand side. On the demand side, according to the skill bias technological change, the technological change causes the decrease of workplaces characterized by routine and an increase of more cognitive and qualified work positions (Acemoglu, 2002; Autor et al. 2003). Another significant fact is the outsourcing strategies of enterprises: the metropolitan areas can attract a highly-skilled workforce while relocating productive activities in low-cost countries (Sassen, 1991). According to Moretti (2012), it is not only important the quality of work but rather the ecosystem in which it is inserted. The author points to the "great divergence" between cities driven by technological progress (in which the positive effects do not only fall on advanced industries but also local communities and services) and cities and countries still linked to traditional and low production system knowledge intensity. The determining feature at the basis of progress is creativity and therefore a high competence of human capital becomes fundamental.

According to some scholars, however, knowledge is rationalized to become operational knowledge as a new Fordism process (Gosetti, 2011). This process, defined by Brown (Brown, Lauder, & Ashton, 2010) *Digital Taylorism*, can increase productivity but will have implications in the relation between education and work. All of this has determined and is still determining not only a polarization between workers with high and low competences but also is also fragmenting the middle-class professions. In this way, differences arise within the middle classes regarding occupations, career and prospects of people with the same credentials, experiences and skill levels. According to the Author, this leads to a process of professional dequalification as well as the very concept of class. Digital Taylorism which require workers with a high level of education but does not require the independence and creativity often associated with technological innovation processes.

Also, a change in labour demand could favor some groups and limit others (Fellini & Chiesi, 2014). Socio-demographic change modifies labour supply: highly qualified workforce on one side and migrant workers – who occupy also and especially dequalified positions – define a polarization between high and low qualified positions as the level in benefit and social protections. Indeed, change in the demographic composition of workers and the female labour offer can change the employment structure and also change the cost production (Reyneri, 2017)

There are some common traits in the literature's analysis on these themes: the decrease of manual work and the increase of intellectual work – especially work linked with production and dissemination of information and knowledge – and the increase of education levels required by the labour market. According to ISFOL (Esposito & Scicchitano, 2019), two are the main tendencies:

- Technologies are pervasive and can potentially be used in all productive sectors;
- Technology and qualified work are complementary (skill bias technological change theory).

There are many cross-national differences across European countries in terms both of youth unemployment and job quality (Wolbers, 2007).

Based on the analysis of occupationalized-organizational<sup>2</sup> systems dichotomy, Gangl identifies three clusters (Gangl, 2001):

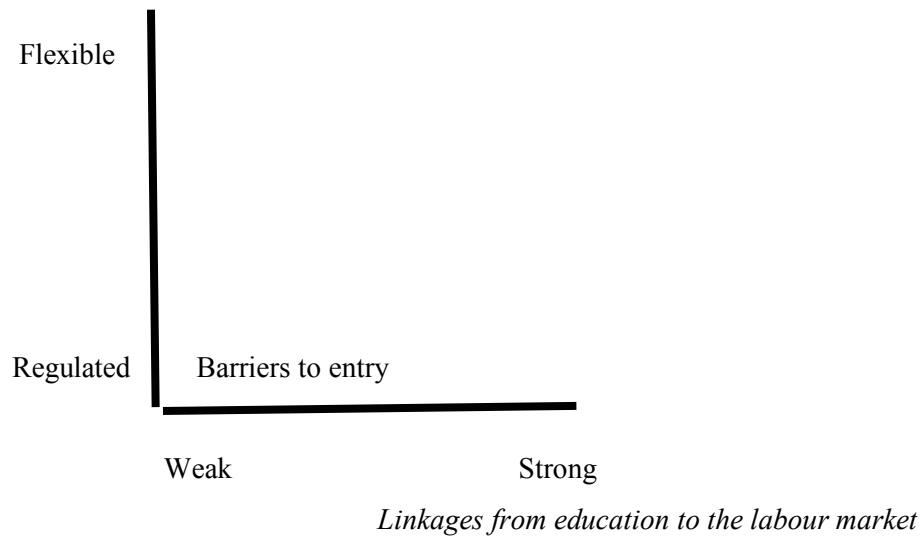
1. Occupational labour market: countries with a youth labour market and highly employment (Austria, Denmark, Netherlands, Germany);
2. Internal labour market: the youth labour market is not highly occupied but is flexible (France, Belgium, Ireland, England, Spain);
3. Southern Europe: The labour market highly regulated but not very receptive to young people (Italy, Greece, Portugal).

Also Schröder (2004) proposes an illustrative scheme of the relationship between the labour market and the educational system:

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<sup>2</sup> These two models differ in the degree of complementarity between the education system and the labour market: in the first model, the education and training system prepares by providing specific skills to enter the labour market; in the second model, the skills acquired during the on the job training are more important.

### *Labour market structure*



Source: Schröder, 2004

Schroder speaks of "linkages from education to the labour market" to indicate a strong correlation between human capital and employment structure, also thanks to the involvement of employers in the training and education system. She defines the regulated labour market when labour contracts and wages are strongly regulated by law or collective bargaining, on the contrary, the labour market is flexible. The most disadvantageous combination is when the labour market is strongly regulated and the connection between human capital and employment structure is weak, causing strong barriers to entry.

## **1.2 Upgrading and polarization trajectories**

The debate on occupational structure of development countries follows two streams: there is an occupational upgrading that is an increase of good jobs (Piccitto, 2019). This is in line with Bell (1974) who, with his definition of post-industrial society, argued that knowledge would be the basis of value creation processes. Contrary to this authors are the polarization theorists.

Upgrading scholars refer to the theory of skill bias technological change: as already said, the literature defines skill bias technological change as the theory according to which the transformation of occupational structure causes a decrease in all those highly routine professions, easily replicable by automation (Acemoglu, 2002; Autor, 2015).

These authors argue that the introduction of technology will limit low-complexity jobs while it will be complimentary for those highly qualified. These dynamics would be endorsed by global competition in the labour market and outsource process but, on the supply side, the raising of educational levels contributes to increasing the qualification level in the labour market, stimulating innovation in production and organizational processes (Brynjolfsson & McAfee, 2014).

One of the problems with the skill-bias theory is that it does not take into account the wider context in which work is inserted: referring to the human capital theory, as will be discussed later, it takes into account only individual preparation and then the responsibility of not being up to the technological change is individual. The work's working world is increasingly individualized and the focus of analysis is always the supply side (Bison, Gagliardi, & Girardi, 2017): this involves the fact that individuals must ensure adequate conditions of access to work but also the assumption of an often positive relation between economic growth and education is confirmed only if the production system can offer job positions suitable for highly qualified people.

Polarization authors add that technology does not necessarily lead to a professional upgrading but the labour force tend to position itself on the two poles of continuum qualified – de-qualified jobs and the decrease of those who occupy the central position of this continuum (Acemoglu, 2002; Autor et al. 2003).

## **2. QUALIFIED EDUCATION AND INEQUALITIES**

As already mentioned, if Labour, in the years of the Fordist factory, was in the first instance of manual and repetitive nature, enclosed within solid walls, now the reference is to the cognitive, flexible work, which competes in a sort of global auction (Brown et al., 2010).

The increase in higher education is, therefore, one of the most important factors of contemporary society. If higher education was first seen as a way of training and maintaining elites (Bourdieu, 1996), it has now become a fundamental part of most people' lives, increasing life and career expectations.

In general, a worker can be highly qualified concerning the position he holds in the labour market, to the skills he has and his education level. Other factors that must be

considered are salary and job stability. Cefedop defines the qualification as certificates or diplomas awarded following education, training, learning that influence the ability to find work, mobility, social status. To avoid professions comparability problems at the international level, the European Union countries have the International Standard Classification of Occupations (Isco) which is based on three criteria: specialization area, education level, and competences and training needed for the job.

The qualification standards are the result of a two-way relationship between the labour market and the education system and take on forms or values for the context in which they are situated. In fact, if a highly qualified person is usually identified as having a tertiary or equivalent education, it is also true that many graduates often do not perform highly qualified jobs while, on the contrary, many non-graduates can perform highly qualified jobs (Salt, 1997) and it is very complicated to evaluate the link between skills, qualifications and work requirements.

In a world where knowledge workers are in global competition, education has become crucial, highly qualified work-flows occur within a new global division of labour and the level of education is often used as a measure of the skills available in the population and the workforce (OECD 2015). The intellectual and human capital, in this way, has a strategic role in the work organization. Contrarily, the relationship between education and social position regulates the individual course of life in terms of status, prestige, income; the social position depends on their education and work performance, as opposed to the so-called modern societies in which the social position was ascribed (Ballarino & Scherer, 2013).

In this way individuals are given a strong responsibility in the choice of their paths: hegemony is attributed to market rationality, and this determines a weakening of social ties and a highly individualized global society. The empowerment of the individual is a personal matter, the result is connected to education and to work.

According to Brown (2010), four forces converge in the global competition for the workforce:

1. Mass education: widening access to university education reduces the value of credentials in the competition for employment;
2. Quality-cost revolution: the new competition is based on both quality and costs and, as already mentioned above, companies implement strategies for outsourcing;



3. Digital Taylorism: to increase the use of innovations, the cost of knowledge work is reduced;
4. War for talent: the war to acquire the best talent globally, makes the meaning of professions empty and generates a process of credentials inflation.

The mainstream theories concerning the relationship between the labour market and education focus on the fact that the so-called knowledge economy needs skilled workers, therefore the school system expands, contributing to economic development and providing the necessary skills; an expanding economy is an economy that innovates and is highly technological and therefore produces new demand for skills that determines, in a virtuous circle, a new expansion of the stocks (Regini, 2007). This model is mechanical, in which it is assumed that there is perfect information in the meeting between demand and supply of labour; it refers to the concept of Bell's post-industrial society according to which growth and productivity depend on the production of knowledge that generates value; there is a transition from the production of goods to the production of services and the most important professions are those with a high knowledge content (and wage differences reflected a meritocratic pyramid). According to this, the human capital theory (Becker, 1964) holds that education is a function of productivity and that it is work experience and the education level that determine the result of work performance and therefore salary; in this way, the individual will invest in their educational preparation to increase human capital. The basic idea is learning means earning. This assumption, however, makes people unprepared to face what Brown (2010) defines as cognitive capitalism.

The human capital theory is contrasted with job competition theory (Thurow, 1976): candidates for a certain job position are uncertain about their future performance and about the skills they will develop through training courses. The individual characteristics, therefore, do not already have the level of productivity of candidates but become important only at the time of selection because the presence of higher credentials lowers future training costs for the company. In this context, education level is not intended as an absolute value but relative to the position in the cohort (or queue) for that particular workplace. Once the position has been occupied and the necessary training has been acquired, the subsequent training costs will be lower and in this way, productivity is seen as an attribute of the workplace rather than of the individual (as in the human capital theory). Instead in the credentialism theory (Collins, 1979) the labour market is a

place of reproduction of social stratification because the education level is a signal of status and position of power: it is a form of social closure (Di Stasio et al, 2015) to control or facilitate entry into highly qualified positions. In this case, education is not an indicator of individual skills (as in the human capital theory): workers compete with each other to get the best-paid jobs. People compete with each other by obtaining higher and higher qualifications, determining an inflationary system of credentials that therefore lose value.

## **2.1 The paradox of over-education**

There are too many people with the same level of education and too few adequate jobs: individuals invest in education even if the level reached will not serve for their work (Di Stasio, Bol, & Van de Werhorst, 2015). Nevertheless, the education level is not always a good proxy for assessing skills (Luciano & Romanò, 2017) because there are some fields of specialized study (eg. medicine), while others with more general skills that can be used in various sectors. This trend towards excessive education has led, as said, to inflation of credentials and to the downgrading of less qualified workers because the highly qualified ones occupy positions even below their level.

However, alongside this explanation, Leuven & Ossterbeek (2011) recovering the human capital theory, believe that over-education is associated with a lack of human capital, in particular, a lack linked to the skills acquired at work. Following this approach, the career mobility theory (Sicherman & Galor, 1990) states that it becomes increasingly difficult for young people to find work and also to train for skills to be included in the labour market. Over-education, in this way, is a necessary step thanks to which young people, by entering the labour market, even in a job that is not adequate to their level of education, can develop the necessary skills to look for a suitable job.

In the empirical literature on the subject, the determinants of overeducation in the comparison between different countries are identified but the difficulty in measuring the phenomenon for the lack of a univocal definition (Caroleo & Pastore, 2013) also emerges. since, there is not always a positive correlation between education and skill mismatches. Chevalier (2003) argues that the subjective and objective measures of mismatch analysis do not take into account both the heterogeneity of the competences of individuals with equal educational qualifications and the skills in occupations that require the same educational qualification but differ in different environments. Another point is that people

with different expectations can express different judgments about the coherence between work performed and skills possessed (Luciano & Romanò, 2017). The factors that, as far as the Italian context is concerned, can be: finding or having found work through informal networks, being behind in university courses, the presence or absence of pre and post-graduation courses, family background, the type of path chosen, the location of the workplace. The degrees exposed to greater risk of mismatch are the humanities (but also geology and biology) which have a greater female presence.

### **3. THE ITALIAN CASE BETWEEN ASYMMETRIES AND MISALIGNMENTS**

Italy is the only European country in which, since 2008, qualified professions (intellectual and technical) decreased, while increasing the elementary and de-qualified professions, generating a *reverse asymmetric polarization* as defined by Reyneri. Crisis started low road degrowth (Reyneri & Pintaldi, 2013), a path that penalizes the most qualified professions and favors the least qualified workers, many of whom are in the personal service sectors. The Italian problems are linked with poorly trained human capital and a production system based in sectors with a high intensity of low skilled labour (ISTAT, 2018)

Italy has faced a growing education level of the population: that should have pushed companies to increase the qualification and innovation demand (according to the human capital theory): a greater supply of qualified people reduces the costs of qualified labour. However, Italy is still negatively characterized both on the supply and the demand side (Reyneri & Pintaldi, 2013). Many scholars, as has been said, argue that technology improvements create profession upgrading: some studies that classify the quality of professions on the basis of remunerations, have found that in Italy there is a downgrading trend (Fellini, 2015) and Italy is the only country in which the tendency to de-skilling has been affirmed, with an increase in unskilled professions. Fellini, shows how these trends are not only the consequences of the crisis but also derive from structural aspects of the Italian labour market, linked to the double weakness of the welfare and productive systems.

The Italian labour market is a low-employment, low skilled and highly segmented labour market (Fellini, 2015); according to OECD (2019) data, Italy is confirmed as the country, along with Greece, with the lowest employment rate by education level. The

problems of Italy initiated before the 2008 crisis. They are structural problems that have become acute with it: little propensity to innovation, with dynamics strongly linked to the performance of the internal market. This probably derives from greater strength that traditional sectors have and is also reflected in the qualification levels of professions. In Europe, Italy is the country that has the lowest employment rate in highly qualified professions (OECD, 2019). Although according to the theories of skill bias, technological development favors a tendential upgrading of labour demand (or its polarization?), it remains a productive system oriented towards low qualification.

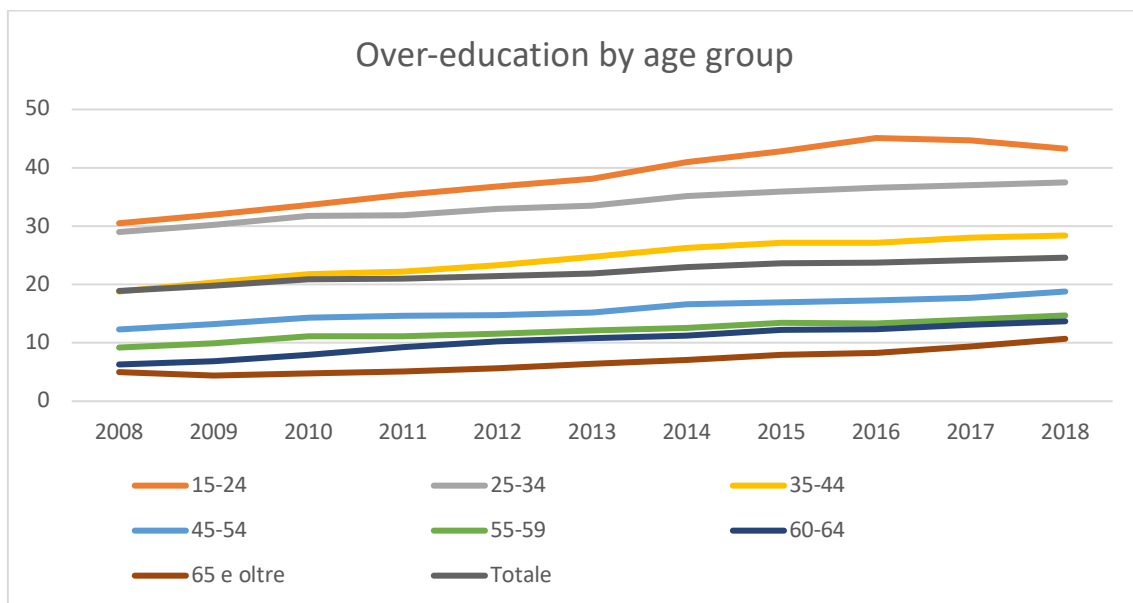
As mentioned above, the formation of qualified human capital becomes fundamental in a context such as the current one, to remain competitive internationally and develop production systems. However, ISTAT (ISTAT, 2018) still shows a misalignment between the production system and the education system in the analysis of the three years 2014-2016 and therefore inefficiencies in the relationship between supply and demand. The forms of underemployment and in particular of over-education can derive from an excess of people qualified for the same profession but also the labour market can prevent the correct allocation of resources. Evaluating the annual recruitment flows, new trends can be seized and in particular, ISTAT identifies two consequences:

1. The flows analysis makes possible to verify whether, in making new assumptions, the company invaded or not in the quality of human capital;
2. Attention can be paid to short-term aspects.

	2014	2015	2016	2014-2016
<b>Total workers hired</b>				
Over-educated	31,5	31,5	31,8	31,6
Under-educated	22,0	21,6	21,9	21,8
Right education level	46,5	46,9	46,4	46,6
of which:				
<b>Under 29</b>				
Over-educated	35,3	34,6	33,2	34,3
Under-educated	18,0	17,8	19,1	18,3
Right education level	46,8	47,6	47,8	47,4
<b>Over 49</b>				
Over-educated	19,5	20,1	21,3	20,3
Under-educated	35,5	34,2	33,5	34,3
Right education level	45,2	45,7	45,2	45,4

Source: ISTAT, 2018.

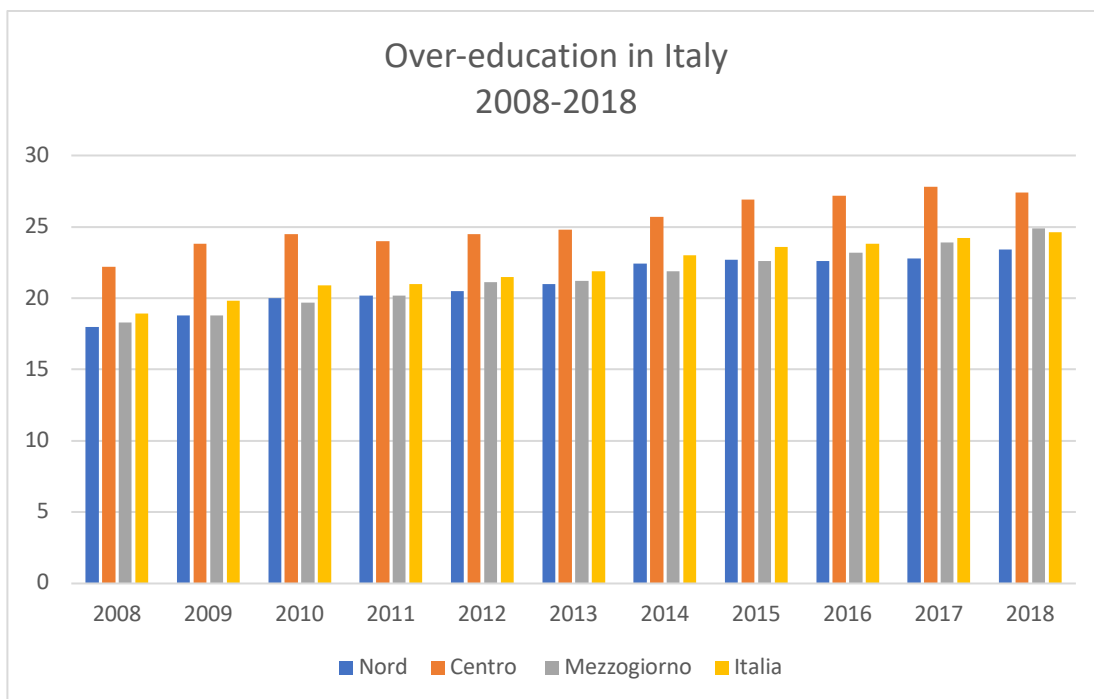
When we analyze the table, the phenomenon of over-education has affected 53,4% of those hired in the three years under review, and is a phenomenon that is more developed than under-education. It may emerge that the degree is assessed as a signal by companies that require more qualified human capital; on the other hand, however, the supply side is not faced with jobs that are qualitatively adequate to their skills (ISTAT, 2108). The table also lends itself to a further type of reading: in fact, what emerges is also a cohort effect on the labour supply side. The over 49s probably do not have high educational qualification and the skills they possess derive from the experience in the workplace. Also according to ISTAT report, the companies with the greatest presence of over-educated are those with low productivities, which could have been faced with an excess of skills (Tarvid, 2015). The phenomenon of over-education can also be read with the difficulties that young people have in entering the labour market, in fact even as shown in the following table, over-education with increasing age.



Source: ISTAT, Rilevazione sulle forze di lavoro

Another phenomenon that emerges both from this table, and from the next one, concerns the fact that although the degree constitutes a protection from unemployment (5,9 for individuals with tertiary education level, 10,1 with upper secondary school, 14,1 with below secondary school) is the constant growth of the phenomenon of over-

education (from 2008 to 2018 the phenomenon grew by 5.7%). These tendencies confirm what has been said previously, namely the tendency of the Italian labour market to be not very lively in the demand for qualified labour.



Source: ISTAT, Rilevazione sulle forze di lavoro

Since it was difficult to find certain data relating to 2019, to complete the picture I analyzed the Unioncamere-Excelsior report relating to the 2019-2023 professional needs (Unioncamere ANPAL, 2019). The report highlights how many professions have disappeared over time and how many others, although they have the same name, have changed content in relation to the variety of tasks, at higher cultural level of workers, due to the demand for greater creativity. According to Unioncamere-Excelsior investigations, the level of education required by labour demand has increased in recent years, to affirm that productive growth is associated with a more qualified human capital. However, in order for this to be truly virtuous circle, it will be necessary to analyze Italy's professional needs not as a single block but in relation to the context and the various labour market. In addition to education, the report highlights that another factor that matters in the match between job and supply demand concerns the previous experience accumulated on the job, partly overcoming the relationship between profession and the most suitable educational qualification. The report states that, in the 2019-2023 period, based on two scenarios related to GDP growth, there will be a shortage of available graduates that can only be partially compensated for by the pool of unemployed graduates available. In fact,

in Italy does not only have a few graduates but does not have the right ones. On the other hand, however, the Italian production system tends not to value graduates who, as we have tried to highlight, are often over-educated, especially graduates from the STEM disciplines who, in our country, struggle to find employment at the height of their education.

## CONCLUSION

This review reconstructed the changes which have occurred since the crisis of Fordism. Although we often talk about post-Fordism, it would be worthwhile to investigate whether we are actually faced with a new work paradigm or if in reality, the reference categories have changed but not the contents; in fact, some authors speak of digital neo-fordism or digital taylorism precisely to highlight the fact that, contrary to the mainstream literature that identifies new jobs and new workers in an increasingly flexible, free, fast and autonomous perspective, a strong profit logic still persists which it encompasses knowledge workers in standardized and codified practices that allow them to gain in terms of time and productivity, the concept of identity is even more in crisis.

What emerges from the Italian situation is that, although the number of graduates is constantly increasing (OECD, 2019), there is still a large number of under-employed and, in particular, over-educated. This can be connected to the fact that the educational and productive systems are still strongly separated and that the Italian market, as mentioned above, depends principally on internal dynamics and to highly intensive work on unskilled labour.

In a difficult context such as Italian one, it would then be useful to investigate whether the concept of work as a social identity still makes sense: in fact, not only low skilled but also highly skilled workers do not often fall into the description of the new "super-worker" to whom great adaptability to changes is asked, but rather they are bound in a race to the bottom of working conditions that sharpens polarizations and growing inequalities. **There is an urgent need for an effective guidance system, not only for young adults**, but also for those who are already part of the world of work; a guidance system aimed not only at defining which are the most promising sectors but a real path of valorization of one's skill and competences, taking into consideration the aforementioned fragmentation of the Italian production sector: it is, therefore, necessary to recover the

strategic scope of the territory in an ecosystem approach that enhances not only the economic aspects but all aspects of the labour market, considering the social, cultural and political animations that characterize each particular context as essential. For this, it would be important investigating the concepts of quality and job satisfaction, not in a one-dimensional perspective but as a complex concepts, characterized by the interaction of several elements. Finally, the very concept of social class is questioning: according to Beck (2000), from the class society we have moved on to the risk society, a society that has allowed a sort of democratization of technology but on the other hands has determined the birth of new inequalities and the appearance of a new class that of precarious workers (Standing, 2011) that really seems to have a class consciousness; Standing in his work proposes a rethinking of the concept of work itself, placing the persona at the center and rethinking the rights of equality. The human factor remains central: without the humanization of work (Pirro, 2000) technologies, which in the most pessimistic scenarios will cancel jobs and increase the mismatch, remain technologies and do not generate value: it is the human resource that acts as a discriminant in this new revolutionary path that otherwise it could not be considered as such.

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