POLITECNICO
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DIPARTIMENTO DI ARCHITETTURA
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LPS – Laboratorio di Politiche Sociali

Occupational-based social class positions: a critical review and some findings

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DAStU
Working Papers
n. 07/2020 (LPS.14)
ISSN 2281-6283

Abstract

Social class is a key concept for the analysis of social structure and the (re-)production of social inequalities. We review the main occupation based social class measures and delineate them from other concepts such as status (ceto, stand) and continuous measures of socio-economic positions. In particular, the theoretical foundations of the so-called EGP and ESeC schemes are presented. The alternative proposal by Oesch is described as well.
We conclude the paper with empirical evidence on the class composition in Italy and the enduring relevance of the concept for the stratification of inequalities.

Key-words

Social class; occupations; social stratification

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Acknowledgements

Questo position paper è stato preparato nell'ambito del progetto ***Rising Inequality and the Social Insecurity of the Middle Class: Measures, Drivers, Policies (RISING)****, finanziato dal MIUR su bando PRIN 2017. Nella stesura del paper, abbiamo beneficiato delle fruttuose discussioni svolte nell'ambito delle riunioni di progetto.*

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http://www.lps.polimi.it/

Come citare questo working paper / How to cite this working paper:
Barbieri, P., Gioachin, F., Minardi, S., Scherer, S. (2020) *Occupational-based social class positions: a critical review and some findings*, in DAStU Working Paper Series, n. 07/2020 (LPS.14).

1. Social stratification and occupational class

Social scientists have always been concerned with the social structure of societies, the unequal distribution of resources and chances as well as their enduring consequences on individuals' lives. In particular, social stratification research is concerned with the constraining and enduring nature of unequal social relations, and the study of the persistence of positions in a hierarchy of inequality (Duncan, 1968; Blau and Duncan, 1967; Coser, 1960; Dahrendorf, 1959; Davis et al. 1945) refers to how inequalities between individuals are reproduced within and across generations. The social distance between groups of people then, indicates the relative position of individuals within a given system of social stratification, while the degree of social closure of a society is given by the mobility chances of individuals to shift from one position to another, either horizontally or vertically (up and down) (Crompton, 1998).

Sociologists are used to think the structuring of inequality in society in two distinct ways, namely as stratification by **class** and by **status**. Following Weber's definition of status (*ceto*) and class, a status order is understood as "*a set of hierarchical relations that express perceived and typically accepted social superiority, equality or inferiority of a quite generalized kind*" between individuals (Chan and Goldthorpe, 2004: 383) and reflect prevailing evaluations of social honours or worth. The social hierarchy created is expressed and reproduced in different associations, especially in terms of friendships and marriage (*convivio* and *connubio*), and in different lifestyles that are seen as appropriate to different status affinity. A class structure, in contrast, is "*grounded specifically, and quite objectively, in the social relations of economic life – i.e. in the social relations of labour markets and production units*" (Chan and Goldthorpe, 2004: 383).

The decline of a well-defined status order in advanced societies, however, has reduced the interest in status and increased the interest in occupational class position or similar socioeconomic classifications. Moreover, scholars in stratification research share the idea that in market economies *market position*, and especially the position individuals hold within the occupational division of labour, generates structured inequalities in the redistribution of economic rewards and social resources, as well as in subsequent life chances.

Alternative notions and measures of social stratification, which override the status/class distinction, were also developed in the literature. Among them, those of **socioeconomic status** and the **occupational prestige** scale, which allowed stratification to be treated as a single continuous measure (Duncan, 1961; Treiman, 1976; 1977; DeLillo, Schizzerotto, 1985; Ganzeboom et al. 1992, 1996) or by treating status as the symbolic aspect of a class structure (Bourdieu, 1984a; 1984b ; Weininger, 2005, Savage et al., 2013).

Despite conceptual differences between measures, the socio economic classifications discussed in this paper share the idea that occupational social class as a theory-based sociological concept (Breen and Rottman, 1995), far from "*ceasing to do any useful work for sociology*" (Pahl, 1989) or being either a rhetorical metaphor (Holton and Turner, 1989) or a "*zombie concept*" (Beck and Beck-Gernsheim, 2002), refers to the empirical investigation of the consequences and corollaries of the existence of a given social structure. Such pre-existing social structure is defined *ex ante* (Breen and Rottman, 1995) and shapes individuals as well as families' chances and life-course outcomes. Following Goldthorpe and Marshall (1992) pursuing "*class analysis as a research programme*" thus means exploring the interconnections between positions defined by employment relations in labour markets and production units, the processes through which individuals and families are distributed among these positions over time, the amount of resources, power and privileges assigned to each position/class within the social hierarchy, and the consequences for individuals and families' life-chances, as well as for their social identities.

In other words, adopting a perspective that focuses on the role played by occupational social class in the explanation of social outcomes (among which *social inequalities*) means considering the existence (in market societies) of a stable class structure, rooted in the economic and productive relations and *defined ex-ante*, that reveals its utility in predicting individuals and families' economic and social rewards. Class position therefore is applied to explain *subsequent variations* in individuals' situation, life chances, actions, behaviours, attitudes, values, having however clear that it has to be intended as *exogenous* and *antecedent* to these situations, life conditions and events (Evans and Mills, 2000) whose occurrence it concurs to determine and to explain.

More in specific, individuals are undertaking actions from a particular position within the social stratification system, a position that is endowed with a class-specific amount of *"social power"* (Breen and Rottman, 1995). This means that individuals possess given resources and face given constraints on their behaviours and choices – independently if they are conscious or not of such resources and constraints, which exist independently of the subjective beliefs held by actors. Given that different people share similar positions of social power in specific dimensions of action and social life, they can be expected to act similarly and to share similar chances of modifying their condition (Giddens and Held 1982; Giddens 1984).

The occupational class perspective is in explicit contrast with approaches stating that class analysis should move beyond the investigation of class *effects*, to explore processes of class *formation*, generally employing an inductive approach (Crompton, 1998; Devine 1998; Savage et al., 2013).

Post-modern authors have argued that alternative dimensions have arisen next to or in substitution of more conventional conceptualizations of occupational social class. Following the post-modern approach to class analysis, the *explanandum* is the result of the relationship between several factors associated with different aspects of individuals' life conditions. In other words, the post-modern approach defines and discovers a "class structure" (or a typology of classes) from the empirical distribution of a set of *differences*[i] existing in society, defining classes as collectivities of people sharing identities, interests, social and cultural resources, and lifestyles (Bottero, 2004; Crompton, 1996; Crompton et al., 2000, Devine et al., 2005; Savage et al., 2013).[ii]

However, these typologies of "socio-economic groups" represent just contingent descriptions of aggregates, based on common traits of the individuals in terms of cultural consumptions, lifestyles, attitudes, or even socio-demographic characteristics (being young/elderly/immigrants…), but with no possibility to serve as a sociological tool to explain socially stratified social outcomes, as these outcomes are embedded into the same definition of the "classes" (Mills, 2014; Barbieri, 2019; Marzadro et al., 2019).

Moreover, by fusing these elements in the definition of class, one loses the idea of social class as an *ascriptive* concept that describes an underling *causal* structure that has a *causal* effect on subjective and cultural factors (Barbieri, 2019).[iii]

The approaches reviewed in this paper, on the opposite, derive the explanandum from a general law (Boudon, 1979) that is antecedent to the explanandum itself, and that allows to explain individuals' life conditions in causal terms. From what seen so far, it follows that in modern societies the occupational structure is the backbone of the social stratification system. The literature that follows the "stratificational" approach focuses on social origin, educational attainment, social division of labour and occupational closure, as mechanisms for inequality-producing processes related to life-chances.

In this vein, Educational attainment is considered an intervening factor within the Origin-Destination path (Duncan, 1968; Treiman, 1977; Wright, 1980; 2005; Ganzeboom et al., 1992; Shavit, Muller, 1998; Breen, Muller, 2020; Bernardi, Ballarino 2016).

Occupations are supposed to capture the structure and the related inequality in the labour market since they are institutionalized groups that constitute pre-packaged combinations of a variety of valued goods (i.e. income, workplace authority, political power, knowledge, networks, health) which are consequential for inequalities in life chances (Grusky and Ku, 2008; William, 2013). Occupational classifications define social classes by looking at attributes of one's position that are independent of the person holding this position, thus exogenous to holder's life chances. The

theoretical basis of occupational classes is ultimately rooted in economic stratification of workers (Goldthorpe, 2007) and therefore in understanding the structure of work-related hierarchy (Zhou and Wodtke, 2019).

2. Between class and 'Stand': stratification, social change and conceptual debates

The debate on the so-called "middle class squeeze" (Oecd, 2019, Batinti et al., 2019; Brandolini et al., 2018; Maître et al., 2014; Pressman 2007, 2009; Jenkins, 1995) has brought mixed results, with some authors showing no evidences of a real economic class "squeeze" (Maître et al., 2014; Brandolini et al., 2019; Albertini et a. 2019) and others showing mixed evidences, with no economic (income) squeeze or reduction during anticipated recessions, but some reduction produced by the Great Recession (Batinti et al., 2019).[iv] One possible reason for this unclear picture can be found for in the definition of "middle class" and the operationalization of it. First of all, much of the debate, in fact, speaks about "middle class" or "*ceti medi*" – taking the two concepts as synonyms, *while they are not*. In Italy, this debate has been particularly vivid. Usually the "middle class squeeze" or the "disappearing middle class" narrative, starts from the crisis of the fordist way of production, with its corollary of the "crisis of the Ford-Keynesian compromise", as the starting point of the crisis of a (quite vaguely defined) "middle class", a term which is presented as fully interchangeable with "*ceto medio*" (Bagnasco, 2008, 2016). A serious conceptual confusion is thus originated, as the overcoming of a specific, and historically determined, way of production and regulation - which produced a generalized increase of wealth, as well as of social citizenship – is taken as the evidence of a process of "middle class squeeze" (*crisi del ceto medio*), mixing occupational social class and "socioeconomic groups", often based on mere self-classifications. Several problems arise: first of all, while income and wealth (or consumptions or social habits…) do not represent the criteria on which class is theorized and operationalized in the literature -but are the outcomes of a given class position- in the present national debate class and status ("ceto") are overlapped (de facto adopting an Anglicism that oversimplify the European tradition that distinguishes between class and status/ceto):

"*In realtà una classe media non è mai esistita, esistono più classi medie professionali, che anche cambiamo nel tempo e nello spazio. Eppure, specie in certi momenti, ci si riferisce, nel linguaggio corrente e politico, a un insieme che supera e comprende quelle diversità. Entra allora in gioco il termine ceto, che per i sociologi indica una vicinanza di tratti culturali, stili di vita, possibilità di consumo, effetto anche di misure politiche. Il termine americano middle-class, corrisponde grosso modo all'italiano ceto medio.*" (Bagnasco, La crisi del ceto medio, Nuovi Lavori s.d.).

In his statement, Bagnasco seems to consider "ceto" as defined by a mix of cultural traits, lifestyles, consumptions etc. (quite à la Savage, indeed). However, the definition of "*ceto medio*" remains vague: Bagnasco himself defines "*ceto medio*" as "full social citizenship" status, as in T.H. Marshall, that is having full access to social rights, provided by the welfare state. This apparent confusion may probably be explained by the idea, sustained by Bagnasco, that 'post-fordist' societies are increasingly stratified by systems of "multiple inequalities" (gender, generation, ethnic, sexual, territorial, etc.) while there is increasingly "minor evidence of social classes" as stratifiers.[v] However it is, "ceto" as we find it in the present national debate does not equal neither class, nor it fits the original Weberian definition of "*Stände*".[vi]

A second point to be stressed in this discussion, has to do with the fact that many analyses pretending to show evidence of the "middle class squeeze" are based either on self-assessed feelings of "general insecurity" expressed by middle-class interviewed or on cross-sectional data, which fail to embed the reported feeling of insecurity – as well as the economic situation of the interviewed – within a life course perspective.[vii] This point is central, as taking cross-sectional pictures of some "perceived" feeling of insecurity – or gathering the income situation of the individuals in a specific time point - without considering *if* and *how* the situation is contingent or persisting over time within the life-course of the individuals and in different life phases, does not represent an ideal way to assess any "crisis" or "squeeze" of the supposed middle class/ceto. Even less so it can represent a valid check of any polarization thesis.[viii]

Concluding, in the present (mainly national) debate, the issue of the "*Stand*" appears to be rather a macro issue of "social dis/integration" (Ranci, 2017) - which in some contributions sounds close to '*retrotopia*', a sort of nostalgia for the past, well expressed by the last Bauman (2017) - than a matter of social stratification and stratifying mechanisms. Everything considered, quite far from the individuals and the groups who are the long run winner and losers of the present inequality structure.

3. The measurement of social stratification

Social stratification is usually operationalized in two ways: either following a class approach and categorical socioeconomic classification or using (various) continuous measures. Diverging theoretical perspectives and normative assumptions about social functioning lay behind such – just apparently technical – options (social conflict versus social integration). A class-based approach divides the population into a discrete number of macro categories or social classes, and differences between social class positions are expressed following (sometimes different) theoretically driven criteria, which are the basis of the class schema. Usually the classification

distinguishes hierarchical and horizontal sorting criteria. On the opposite, an approach based on a continuous measurement, considers an elevated number of fine-grained graded distinctions between occupational groups and assumes that differences between them can be grasped in one hierarchically ordered dimension represented by a single parameter (Ganzeboom et al., 1992).
Notwithstanding both the approaches (categorical/continuous) base their more or less explicit hierarchical social order on occupations (held by individuals), they differ in how each approach conceptualizes the relationship between the occupational system and the social stratification system.
In the remainder of this paper, we review some of the approaches to occupation-based socioeconomic classifications and the more recent debate in this field of research. We firstly illustrate and discuss approaches that favour a continuous measurement of socioeconomic classification, then those based on categorical class analysis, presenting the most influential schemas discussed in the literature. Based on these, we discuss different boundaries that could potentially empirically define the occupational "middle-class". Finally, we review recent findings on the association between occupational classifications and economic outcomes.

3.1 Continuous approaches to socioeconomic classification

Continuous approaches to socioeconomic classification allow for a virtually unlimited number of graded distinctions between occupational groups, assuming that the hierarchical structure of a (western) society can be condensed in a single dimension of "socioeconomic status". Scholars point to two good reasons to pursue continuous approaches to socioeconomic classification: the first one being conceptual and the second one methodological (see Ganzeboom et al., 1992; Goldthorpe and Hope 1974). First, continuous (metric) measurements are better-off in capturing fine-graded cross-occupation variability compared to categorical class-classifications; second, continuous measures are more amenable to multivariate analysis than categorical measures and yield to more interpretable and informative parameters since a bivariate distribution is assessed through one single parameter instead of multiple parameters.
There are two main and still widely used, continuous measures of socioeconomic classification in the literature: the *prestige scale* and the *socioeconomic status index*. The claim at the basis of a prestige scale is that one can map the stratification order of a given society by examining the general reputation of occupational positions among the population, assuming the presence of a strong social agreement over occupational rankings (and a sufficient level of information on the amount of social rewards attached to each position). In this perspective, occupational status constitutes the most relevant dimension in social interaction and people are assumed to be able

to rank occupations in terms of their functional importance to society (Treiman, 1977). Thus, a prestige scale is the social representation of a reputational order, expected to catch dimensions like the degree of skill required, the entailed authority over other individuals, and the control over capital (Treiman, 1976). These three factors differentiate occupations because they are three fundamental aspects of power and privilege, which then determine the amount of prestige attached to different occupations. Nationally based prestige scales were carried out since the early 1950s. These were then integrated into the Standard International Occupational Prestige Scale (**SIOPS**) by Treiman (1977).

Critiques to prestige scales argue that they measure only attributes that make occupations more or less advantaged rather than more or less valued and people's ability to rank occupations show that they recognize the existence of inequality in society and not that they legitimate a certain social hierarchy. Then, prestige scale cannot be conceived neither as a status nor as a class classification. *Socioeconomic status indexes* (SES) therefore move away from a subjective approach to a more objective one, while still cleaving to the idea of stratification as a status hierarchy. In general, socioeconomic status indexes are created by computing a weighted sum of socioeconomic characteristics of incumbents of each occupation, usually education and income. More precisely, SES measures the attributes of occupations that convert a person's main resource - that is: education - into a person's main reward (that is: income). The economic foundation of the same concept of "socio-economic status" is evident, and occupation is regarded as the latent mechanism that converts education into income (Ganzeboon et al., 1992). The SES index is related to prestige more as a cause than as a consequence, since education (as cultural resource) and income (as economic resource) are the main forms of power in modern societies, which are then used in ranking occupational titles according to their prestige.

The SES index developed by Ganzeboom and colleagues (Ganzeboom et al., 1992, 1996) is the derived score from scaling detailed occupational categories in such a way that it maximizes the indirect effect of education on work-income (earnings), and minimizes the direct effect of education on income, net of occupation (with both effects net of age). The original version developed a SES score for the ISCO-68 occupational classification based on data that combined information on men from 16 countries (the ISMF database). This early version was subsequently updated for ISCO-88 occupational classification (Ganzeboom and Treiman, 2003). The SES scores for each occupation were rescaled to a range 16-90. An **ISEI** (International socio-economic index) score was estimated for occupational groups with at least 20 incumbents, while occupational units with fewer observations were combined to neighbouring categories or otherwise similar occupational titles to achieve a minimum of 20 observations. The final number of independent

unit groups was 209 out of 390 occupational unites (using ISCO-88). In light of the more recent adoption of a finer-grade occupational classification (from ISCO-88 to ISCO-08), the ISEI score was updated accordingly (Ganzeboom, 2010). Attempts to define the "middle" class on continuous measures are limited to income-based middle-class definitions.

The use of quantiles of the distribution is a handy solution. However, the definition of social class by its outcome, rather than by the underlying structure, we would argue, is not a solution. However, so far no attempt to operationalize the occupational middle on the metric nature of prestige and socio-economic status scales has been made.

3.2 Categorical approaches to class classifications

In class analysis, classes are broadly defined as sets of structural positions. Social relationships within markets, especially within labour markets, and within firms define these positions. Class positions exist independently of individual occupants of these positions. They are "empty places" (Sorensen, 1991: 72). Categorical approaches to class analysis stress the division of society into groups which are unequal and potentially oppositional. They assume that there exists in society a number of distinguishable social categories where members of one category clearly differ from members of other categories (*external heterogeneity*) and are relatively similar to members of the same category (*internal homogeneity*) (Ganzeboom et al., 1992).

A class schema is generally about economic relations and their social consequences, since persons' class position implies a definite and shared set of resources, (career) opportunities and exposure to risk (Goldthorpe and McKnight, 2006). The main objection to class analysis makes the point that - given the diversity of positions in the labour market - a class schema, and especially one with a relatively small number of classes, cannot capture the salient distinctions among occupations that are consequential for the distribution of life chances of incumbents in these positions (Breen, 2005).

Addressing this objection requires both conceptual clarification and empirical analyses. Theoretically, class analysis defines classes' boundaries according to positions in firms and labour markets, and classes "should have a claim to being the classification that best captures the distinctions that are relevant to explain variation in life chances" (Breen, 2005: 36). Importantly, the definition of classes is grounded theoretically in how relationships in markets and firms are linked to the distribution in life chances. An alternative, empirical, definition could define a class schema in a way to maximize the statistical association with the outcomes of interest, such as

economic outcomes or more generally life chances. This, however deprives from the opportunity to study any change in the predictive power of class in a meaningful way.

The most dominant and influential class schema developed for comparative research and still widely adopted by stratification sociologists is the Erikson-Goldthorpe-Portocarero schema (EGP), or the closely related version more recently developed, namely the European Socioeconomic Classification (ESeC). Other categorical approaches proposed more recently are the Oesch class schema (2006) and the micro-class approach (Grusky and Sorensen, 1998; Grusky and Weeden, 2001). In the remainder of this section, the principles defining these schemas are presented.

The conceptual basis of EGP and ESeC class schemas

In the early 1970s, Goldthorpe developed a class schema for the Oxford Social Mobility Study of England and Wales with seven categories: the schema was intended "*to combine occupational categories whose members would appear, in the light of the available evidence, to be typically comparable, on the one hand, in terms of their sources and levels of* ***income****, their degree of* ***economic security****[*from volatility to exposure to labour-driven risks*] and chances of* ***economic advancement*** *[market situation]; and, on the other hand in their location within the systems of* ***authority and control*** *governing the processes of production in which they are engaged, and hence in their degree of* ***autonomy*** *in performing their work-tasks and roles [work situation]"* (Goldthorpe at al., 1982).

Class analysis, following this schema, is the exploration of "*the interconnections between positions defined by employment relations in the labour markets and production unites in different sectors of national economies; the processes through which individuals and families are distributed and redistributed among these positions over time; and the consequences thereof for their life chances*" (Goldthorpe and Marshall, 1992: 382). In other words, the schema is a set of principles that allocates positions to classes to capture the major dimensions of differentiation in labour markets and production unites that are consequential for inequalities in life chances (Breen, 2005). Thus, the schema is "neo-Weberian" inasmuch as it focuses on life chances.

Initially the schema distinguished occupations based on their market and work situations (Goldthorpe, 1980: 40).[ix] Occupations with similar market and work situations were held to constitute classes and occupants of these classes were held to share different life chances. Subsequently, the theoretical basis on which classes are defined have been strengthened and the schema refined. The EGP class schema (Erikson, Goldthorpe, and Portocarero 1979, 2010) differentiates positions within labour market and production unites in terms of the ***employment***

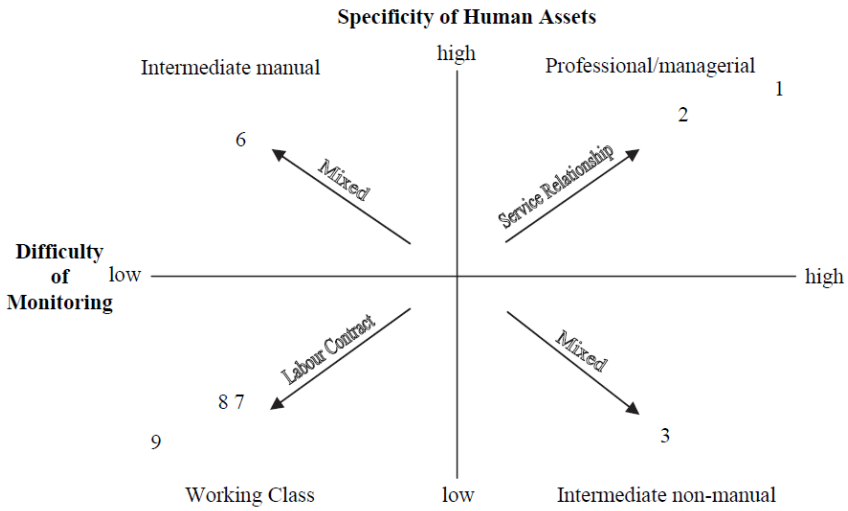
relation (Erikson and Goldthorpe, 1992). A first level of differentiation is consequently among *employers, self-employed and employees.* A further distinction regards the mode of regulation of employment, thus to the form of ***employment contract*** implemented in the schema through the distinction of a service relationship (the service class or professionals) and labour contracts. Employers face contractual hazards in the labour market, especially with regard to two main problems: ***work monitoring*** and ***human asset specificity*** (**Figure 1**). The former arises when the employer cannot assess whether the employee is working and acting in the employer's interest - also defined as job autonomy and directly linked to the performed tasks. All employees have some degree of discretion about how to carry out their job, but as the degree of discretion varies across types of jobs, different employment contracts tailored to different kinds of work were established. *Human asset specificity*, instead, refers to the extent to which a job requires job-specific skills, expertise, or knowledge. These are characteristics of the job position and the differences in these characteristics are expected to explain the broad differentiation of employment relations between employees. Problems of asset-specificity and monitoring difficulty are solved by setting up incentives to persuade employees to act in the employer's interest. Examples are salary increments, assurances of security, pension rights, well defined career opportunities (Erikson and Goldthorpe, 1992). Hence, following the case of Goldthorpe's schema, the form of employment relationship is consequential for life chances exactly because of the different incentives and rewards associated with each type of contract (Breen, 2005).

Occupations with both a low degree of human asset specificity and with low monitoring difficulty can be taken as representing the working class and are associated with the regulation of employment via a labour contract. These are occupations that even if the work tasks require skills they are generally readily available in the labour market. Monitoring problems are limited as well since what the employee does and produces is easily observable. There is then no need for incentives since, according to Goldthorpe, the labour contract is characterized by payment for discrete amounts of work, where working hours are generally part of the contractual bargain, and where there is no interest in securing long-term relationships between the parties.

In contrast, occupations with both high monitoring difficulty and with a high degree of human asset specificity that together represent the salariat of professional and managerial employees are associated with the regulation of employment via a service relationship. These are occupations characterized by high amount of trust due to diffuse duties, in which goals are often set with a medium- to long-term time horizon and that often require pro-activity on the part of the employee to define goals. The compound of required high-level skills and the monitoring difficulty requires

employers to invest in conspicuous incentives to preserve long-term employment relationships. This explains the better life chances of the service class.

Figure 1. Monitoring, Human assets specificity and the ESeC (and partly EGP) classes



Source: Rose and Harrison, 2007

As pointed out in Figure 1, the remaining classes comprise positions with associated employment relationships that would appear to take a mixed form. Such occupations may be characterized by a high level of required human assets yet with a low difficulty of monitoring or vice versa, and the consequent incentives and rewards position these occupations in a theoretical "middle", between the working and the service class.

The allocation of occupations into different classes is neither time nor context independent (Erikson and Goldthorpe, 1992) since in different times and/or countries the same occupations could be regulated by a different form of employment relationship. Comparative research involving nations that have occupational structures different from the British case (the CASMIN project) led to a subdivision of some of the original class categories and brought to the EGP class schema with eleven categories (which can be collapsed into 7-classes). The operationalization requires information on occupation, employment status (to distinguish between employer, self-employed, supervisor and employee), and firm size. **Table 1** reports the details. The schema includes a class of the self-employed and small employees (class IV), which is further divided on a sectoral basis: class IVc includes farmers and class IVa comprises small proprietors with employees. The remaining classes are comprised by employee positions, and they are allocated according to their degree of asset specificity and monitoring difficulty. Higher-level, and to a lesser

extent also lower-level, professional, administrative, and managerial workers (class I and II) have most likely a service relationship. At the other extreme, skilled and unskilled manual workers (class VI and VII) have a labour contract with their employer. The latter is further differentiated on a sectoral basis distinguishing between primary (class VIIb) and secondary (class VIIa) sectors. Following Goldthorpe and colleagues' schema, the labour contract is also shared by lower-grade, routine non-manual occupations (class IIIb), such as the lowest grades of employment in offices, shops, machine operators. The remaining intermediate classes are composed by higher-grade routine non-manual occupations (class IIIa) and lower technical and manual supervisory occupations (class V). Class IIIa, for instance, includes clerks and secretaries that typically require no asset specificity, but their tasks are sometimes less predictable, and harder to monitor; while occupations in class V have the opposite combination, they might require some specific human assets, but they are closely monitored and paid according to the number of hours worked. What is missing from the schema is a class of large employers (Breen, 2005). However, these tend to be organizations rather than individuals and large employers are placed in class I, following the argument that these positions tend to be quite extensively involved in managerial activities and therefore they have a greater affinity with salariat managers (Erikson and Goldthorpe, 1992).

As mentioned, the resulting class structure is not strictly hierarchical, since the schema is designed to capture qualitative differences in employment relationship (Erikson and Goldthorpe, 2002) and EGP is thus a nominal measure. However, as far as the overall economic status is concerned, there is a clear ranking among the salariat (classes I and II) and the working class (classes IIIb, VI, and VII) in terms of life chances, including employment stability and the risk of unemployment, long-term income security and the prospect of a raising income. One of the advantages of this class schema, distinguishing it from many other proposals, is that it has been well-validated in term of criterion and construct validity (Evans and Mills, 1998; 2000; McGovern et al., 2007; Rose and Pevalin, 2003; Hout et al., 1993). Further, EGP has been extensively adopted in empirical analysis during the past forty years.

More recently, with the aim to implement a comparable occupational distinction that accounts for cross-country variations in the labour market structure, Eurostat commissioned a revised version: the European Socioeconomic Classification (**ESeC**) (Rose and Harrison, 2007). It draws on the same theoretical roots as the EGP scheme, namely classes maximize the qualitative differences among occupations in terms of employment relations, assets specificity and work monitoring. The resulting occupational division does not diverge substantially from EGP (Table 1), but it progressed in accounting for changes in the labour market structure (Galli et al. 2009). An example is given by the recognition of the presence of a "service" proletariat. Namely, semi-

and unskilled routine occupations (EGP VII and ESeC 9) that gather also jobs in the service sectors and not uniquely manual workers.

ESeC has a high construct validity and has been extensively tested in comparative research on topics such as unemployment risks (Schizzerotto et al., 2006), poverty and deprivation (Watson et al., 2006), and educational attainment (if considered as a class of origin) (Schizzerotto and Barone, 2006). The next paragraph will consider similarities and differences between EGP and ESeC, especially with regard to the empirical operationalization of the middle-class.

Table 1. EGP and ESeC class schemas

EGP Class Schema			**ESeC Class Schema**		
Service Class			**Salariat**	**Employment regulation**	
I	Higher-grade professionals, administrators, and officials; managers in large industrial establishments; large proprietors	**1**	**Higher salariat** Large employers, higher grade professional, administrative and managerial occupations	Service Relationship	
II	Lower-grade professionals, administrators, and officials, higher-grade technicians; managers in small industrial establishments; supervisors of non-manual employees	**2**	**Lower salariat** Lower grade professional, administrative and managerial occupations; Higher grade technician and supervisory occupations	Service Relationship (modified)	
Middle Class			**Middle Class**		
IIIa	Routine non-manual employees, higher grade (administration and commerce)	**3**	**Higher grade white collar workers** Intermediate occupations;	Mixed	
IVa	Small proprietors, artisans, etc., with employees	**4**	**Petit bourgeoisie or Independents** Small employer and self-employed occupations (excl. agriculture etc)	Not applicable	
IVb	Small proprietors, artisans, etc., without employees	**5**	**Petit bourgeoisie or Independents** Self employed occupations (agriculture etc)	Not applicable	
IVc	Farmers and smallholders; other self-employed workers in primary production				
V*	(Lower-grade) technicians; supervisors of manual workers	**6**	**Higher grade blue collar workers** Lower supervisory and lower technician occupations	Mixed	
Working Class			**Working Class**		
IIIb	Routine non-manual employees, lower grade (sales and services)	**7**	**Lower grade white collar workers** Lower services, sales and clerical occupations	Labour Contract (modified)	
VI	Skilled manual workers	**8**	**Skilled workers** Lower technical occupations	Labour Contract (modified)	8a: 8b: farm workers

VIIa	Semi-skilled and unskilled manual workers (not in agriculture, etc.)	**9**	**Semi- and non-skilled workers** Routine occupations	Labour Contract	9a: 9b: farm workers
VIIb	Agricultural and other workers in primary production				
		10	Never worked and long-term unemployed; Unemployed	Not applicable	

Source: for EGP: Erikson et al., 2010; for ESeC: Rose & Harrison, 2007.
** the classification of V as middle class is partly debatable and depends on detailed skill levels, the amount of work autonomy and the presence of supervision. The classification might be context specific.*

The "middle class" in the EGP/ESeC class schema

Some additional notes have to be targeted to the differences between EGP and ESeC class schema, as these can be relevant for a research agenda on the analysis of middle class/es. As mentioned, the ESeC schema is conceptually based on the main criteria used to elaborate the EGP schema. Notwithstanding such common basis, both theoretical (Figure 1) and empirical differences between EGP and ESeC class schemas, make ESeC more appropriate when the focus is on intermediate classes – partly because it has been developed more recently. These differences become especially relevant once classes have to be classified in three (Service / Intermediate / Working class) for parsimony reasons. **Table 2** reports the logic of such reaggregation on the basis of the EGP schema, which in its "reduced versions" always considers "Routine non manual employees" (EGP III) as belonging to the "Bourgeoisie" -thus inflating it- while "Small proprietors, artisan with or without employees" (EGP classes IVa and IVb) are considered either Bourgeoisie or Intermediate according to the fivefold or threefold reclassification. The same confusion emerges regarding the "Lower grade technician and Supervisors of manual workers" (EGP VI): they are either considered "middle class" (oddly enough, jointly with "Skilled manual workers": EGP V) in the fivefold EGP classification or "Manual workers" (together with "Non agricultural semi and un-skilled manual workers": EGP VIIa) in the threefold EGP classification.

Table 2. The EGP class schema

	Original ninefold[a]	Sevenfold	Fivefold	Threefold
I	Higher-grade professionals, administrators and officials; managers in large industrial establishments; large proprietors	I + II 'service class'	I + II + III 'white-collar'	I + II + III + IVa+ b 'nonmanual'
II	Lower-grade professionals, administrators and officials; higher-grade technicians; managers in small business and industrial establishments; supervisors of non-manual employees			
III	Routine non-manual employees in administration and commerce; sales personnel; other rank-and-file service workers	III		
IVa	Small proprietors; artisans, etc., with employees	IVa + b 'petty bourgeoise'	IVa + b 'petty bourgeoise'	
IVb	Small proprietors, artisans, etc., without employees			
IVc	Farmers and smallholders; self-employed fishermen	IVc	IVc + VIIb 'farm'	IVc + VIIb 'farm'
V/VI	Lower-grade technicians; supervisors of manual workers; skilled manual workers	V/VI	V/VI	V/VI + VIIa 'manual'
VIIa	Semi- and unskilled manual workers (not in agriculture)	VIIa	VIIa	
VIIb	Agricultural workers	VIIb		

Note: (a) For further details, see Erikson, Goldthorpe and Portocarero (1979).

Source: Erikson, R., Goldthorpe, J.H. and Portocarero, L. (2010 [1979])

A more straightforward aggregation is reached on the basis of the ESeC classification, as reported in **Table 3**, which in the three-category version considers (i) higher and lower salariat as "Service Class" (Bourgeoisie) (ii) higher white collars, petty bourgeoisie, small farmers and lower supervisory and lower technician occupations, higher-grade blue-collar workers as "Middle class" and (iii) lower white collars (sales etc), skilled and semi/unskilled manual workers as "Working class". An additional "category" is then represented by the unemployed or out of work. ESeC also assigns less space to "agricultural workers" due to the vast reduction of the primary sector in the economically developed countries. Although in the construction of the ESeC schema, there is no specific discussion on which are the peculiarities of the middle or intermediate classes, these can, to some extent, be derived from the general theoretical principles used to generate the more detailed version of the class schema. As discussed, the most important criteria of the type of employment regulation contained or implied in contracts are the form of payment (incremental salary against weekly wage calculated by time worked or payment by the piece), perquisites (final salary pension, private health care, company car, profit related bonuses, etc or none of these) control over working time/pace of work (whether this is determined mainly by the employer or the employee), job security (e.g., length of notice required to terminate contracts, protection against redundancy) and promotion/career opportunities (Rose and Harrison, 2007, p. 478). Therefore, classes 3 and 6 are aggregated in the "intermediate class", since they share some key features such as incremental salary, relative high level of skill specialization (albeit in different sectors) and a higher possibility to control working time and pace of work compared to more routine occupations.

Table 3. ESeC classification

ESeC Class	10 class version	6 class version	5 class version	3 class version
Higher salariat	1	1+2	1+2	1+2
Lower salariat	2			
Higher white collar	3	3+6	3+6	3+4+45+6
Petit bourgeois	4	4+5	4+5	
Small farmers	5			
Higher grade blue collar	6	3+6	3+6	
Lower white collar	7	7	7	7+8+9
Skilled manual	8	8	8+9	
Semi-/unskilled	9	9		
Unemployed	(10)	(10)	(10)	(10)

The Oesch's class schema

With the argument that Goldthorpe's class schema was developed to describe the employment structure up to the mid-1970s, a period of high industrialization, Oesch (2003; 2006; 2013) proposes an alternative class schema. Without doubt, over the past 40 years the employment structure of economically developed countries underwent relevant transformations. Oesch suggests the shifts in the employment structure pose an analytical and conceptual challenge especially with regard to the definition and identification of the working and middle classes and require a new class definition to be incorporated: Previously homogeneous groups increased in heterogeneity and thus need a more fine-grained measure. A series of major changes are addressed. First, the service sector overall gained in importance while production and thus "classical" working class positions lost in relative size. But with the further differentiation of the service sector the division lines typical of industrial employment, such as the one between manual/non-manual occupations or between blue/white collars, is of little use when dealing with these occupations (Oesch, 2006). Further, low-skilled occupations did not disappear but new forms emerged, especially in the service sector in the form of routine service occupations (examples sales assistants, cook in fast food restaurants, call-center clerks etc.). They do not benefit from more advantageous working conditions than workers in the production sector and are thus not to be regarded as "middle class". At the same time, new production methods have led to an upskilling of the industrial workforce, thus blurring the distinction between worker and employee status. According to Oesch (2006), a similar problem of analytical opacity emerges with

regard to the salariat middle class, which in the literature is often still treated as a monolithic and homogeneous block. The author argues that both educational upgrading and the service and welfare state expansion, besides fostering the growth of managerial and professional positions, have promoted an increasing heterogeneity between occupations allocated in the salariat middle class. Therefore, since the middle class expanded in size and became progressively more internally differentiated, it is difficult to still treat it as a unitary block. Finally, also professionals and intellectual jobs expanded and diversified. While traditional schemes adopted a rough distinction between higher and lower grade professionals (EGP or ESeC 1 and 2), a much more detailed differentiation is required to account the nuanced facets of the professionals' market. Some of the structural changes in the labour market are intimately linked with the increased employment of women. Interestingly, the reduction of working class (mostly occupied by men) and the increase of service class jobs (mostly occupied by women) reduced the traditional distance between white and blue collar occupations. In that sense, standard social class schemas are not very well suited to account for changes regarding female occupation and might easily overlook that a non-negligible share of these "new" service jobs are characterized by working conditions that are somehow equivalent to those of unskilled manual occupations.

The class schema proposed starts from Goldthorpe's schema and adopts the concept of employment relationship in order to differentiate between more or less advantageous positions within the labour market. This type of differentiation thus contains a hierarchical component, which captures the advantages associated with the employment relationship based on the principles form above, but expands on the horizontal differentiation of groups. From the employer's perspective, members of the middle class, and low-skilled employees and workers in the service and production sector, may appear relatively homogeneous and therefore the same degree of advantage is applied to their employment contract.

However, from the employee's perspective, important horizontal differences between positions within these categories exist - such as between industrial operatives, clerical employees and service workers. Occupations in these groups clearly differ in terms of work environments and production unites. The same kind of horizontal differentiation can be applied to the salaried middle class, specifically between professionals in the social and cultural services, technical experts and managerial occupations. In sum, Oesch proposes to analyse employment heterogeneity by combining the hierarchical perspective of the employer (the demand side of the labour market) with the horizontal perspective of the employee (the supply side of the labour market). Inspired by the contribution made by authors such as Kriesi (1989), Esping-Andersen (1993), Kitschelt (1994), Gallie et al. (1998), and Muller (1999), he advocates for expanding and

refining the asset-based approach by putting emphasis on the "*nature of the employees' work experience, their work role and their insertion into the division of labour*" (Oesch, 2006: 266), thus, more generally, on the work logic at the basis of different occupations.

Three different work logics, reported in **Table 4**, characterizing occupations are then identified: ***technical work logic*** - deployment of technical expertise and craft; ***organizational work logic*** - deployment of administration and organizational power; and ***interpersonal work logic*** - face-to-face attendance to people's personal demands. This horizontal criterion allows to distinguish categories that would otherwise appear to be homogenous in their employment relationship (Oesch, 2006). A fourth work logic, namely the ***independent work logic***, is employed to differentiate employers and the self-employed from dependent employees. The concept of work logic is meant to differentiate occupations in terms of: (1) the setting of the work process; (2) the nature of authority relations; (3) the primary orientation of the performed tasks; (4) the skill requirements. For instance, with regard to the middle class, this horizontal dimension differentiates between groups of occupations such as technicians, associate managers and sociocultural semi-processionals who, otherwise, would be placed in the same hierarchical position on the basis of their advantage in terms of employment relationship.

Table 4. Dimensions at the basis of the three different work logics of employees

	Technical work logic	Organizational work logic	Interpersonal work logic
1. *Setting of work process*	Work process determined by technical production parameters	Bureaucratic division of labour	Service setting based on face-to-face exchange
2. *Relations of authority*	Working outside the lines of command for higher grades, working within a clear-cut command structure for lower grades	Working within a bureaucratic command structure that corresponds to a career sequence	Working largely outside the lines of command
3. *Primary orientation*	Orientation towards the professional community or group of trades	Primary orientation towards the employing organization	Orientation towards the client, student, patient or petitioner
4. *Skill requirements*	Scientific expertise for higher grades, crafts and manual skills for lower grades	Coordination and control skills for higher grades, clerical skills for lower grades	Expertise and communicative skills for higher grades, social skills for lower grades

Source: Oesch, 2006.

Oesch argues that, at the level of the working class, the same work logics can also be applied capturing the horizontal differences between categories that would otherwise be difficult to separate, such as routine operatives (e.g. assemblers) in the technical work logic, routine office clerks (e.g. mail sorting clerks) in the organizational work logic, and routine service workers (e.g. nursing aides) in the interpersonal work logic.

The resulting class schema is a 17-class classification (**Table 5**), which distinguishes the horizontal differences of work logics and provides a separate hierarchy within each of them on the basis of marketable skills. The top – withing each work logic – is defined by a professional or managerial class, the bottom by a routine occupations, defined by low skill levels. In between are the higher (associate professional/managerial skills) and lower (generally/vocationally skills) occupational groups. The schema can be aggregated in broader groups (8 categories – following the solid lines in the table). However, the aggregation privileges horizontal differentiations over vertical ones and thus loses exactly the focus on the "middle": the upper-middle occupations are aggregated with top occupations and lower-middle with those at the bottom. This makes such aggregated scheme less useful for the investigation of (changes in) the middle class(es). In line with such limitation, empirical evidence comparing the predictive power of this class schema with more conventional schemas is still scant.

Table 5. The 17-classes schema based on different work logics - collapsed in eight classes

Self-employed		Employees			
Independent work logic		Technical work logic	Organizational work logic	Interpersonal service work logic	Marketable skills:
Large employers (>9) Firm owners Salesmen	**Self-employed professionals** Lawyers Accountants	**Technical experts** Mechanical engineers Computing professionals	**Higher-grade managers and administrators** Business administrators Financial managers	**Sociocultural professionals** University teachers Journalists	Professional/ managerial
Petite bourgeoisie with employees (<9) Restaurant owners Farmers		**Technicians** Electrical technicians Safety inspectors	**Associate managers and administrators** Managers in small firms Tax officials	**Sociocultural semi-professionals** Primary school teachers Social workers	Associate professional/ managerial
Petite bourgeoisie without employees Shopkeepers Hairdressers		**Skilled crafts** Machinery mechanics Carpenters	**Skilled office** Secretaries Bank tellers	**Skilled service** Children's nurses Cooks	Generally/ vocationally
		Routine operatives Assemblers Machine operators	**Routine agriculture** Farm hands Loggers	**Routine office** Mail sorting clerks Call centre employees	**Routine service** Shop assistants Home helpers	Low/ unskilled

Solid lines indicate how classes are to be collapsed into the eight-class version.

Source: Oesch, 2006

The micro-class approach

The so-called "micro-class" approach moves the level of analysis from big/aggregate classes to more detailed groups of occupations that are expected to represent the main *locus* where distinctive opportunities for life chances as well as attitudes and behaviours arisen from a "complex mosaic of taste subcultures" are generated (Grusky and Sorensen, 1998; Grusky and Weeden, 2001; Weeden and Grusky, 2005, 2012; Grusky and Galescu, 2005). This follows not only the idea that an increasing heterogeneity of macro/aggregate occupational classes in contemporary, increasingly individualistic societies requires a more fine-grained perspective, but the authors also sustain that in post-industrial economies the allocation of economic and social resources that influence life conditions and opportunities, has become increasingly structured by highly disaggregate occupational groups within the specific "site of production" – namely the *"social organizational settings within which goods and services are produced"* (Weeden and Grusky, 2005: 142). This is, at least partly, in contrast to the (Weberian) idea that social inequalities are deeply routed in the structure of work rather than in "culturally" defined aspects.

Grusky and Weeden (2005) propose to "disaggregate" classes into "*smaller social groups (i.e., "occupations") that emerge around functional niches in the division of labor and that typically become deeply institutionalized in the labor market*" as they can be the new source of class stratification.[x] To identify such micro-classes, the authors outline the three main processes that generate within-group homogeneity: allocation, social conditioning, and institutionalization of conditions. "Allocation" refers to the selective process that affects individuals found in the same position in the specific productive sphere. On the one hand, workers self-select into positions based on rewarding prospects and on their belief about which occupations provide the best fit in terms of their attitudes, beliefs, and lifestyles (i.e. lawyers self-select for argumentativeness, social workers for empathy, etc.). On the other hand, employers select applicants on the basis of some attributes that match the traits of a new recruit with those of the other employees, creating an additional process of within-position homogeneity – the *social closure*. Following the theory of social closure, which has often provided a sociological language for understanding interclass relation (Pakulski, 2005), Grusky and Sorensen (1998; 2008) suggest that the institutions of closure represent the interest of occupational incumbents and thus impose barriers at the occupational level. "Social conditioning" refers to the effects of the objective conditions of work and the social practices characterizing a specific class position, which then affect the development of specific values, attributes, and lifestyles, on and off the job, of incumbents of specific occupations. This mechanism is further divided in four sub-mechanisms (training, interactional closure, interest formation, and learning generalization - for more details see: Grusky and Weeden

2005). Finally, "Institutionalization of conditions" regards how work is structured and rewarded as a process generating within-micro-classes homogeneity. Across different firms and contexts, similar occupations tend to follow common standards in terms of work conditions (e.g. work hours, income etc.) because of the institutional role of occupational associations (or unions). For instance, widespread institutional devices as licenses, registers, credentials, and apprenticeship systems contribute to homogenize intra-occupations practices. The question that then arises is whether these processes operate also at the big-class level or more directly (just) at the level of the micro-classes.

Weeden and Grusky (2005) develop a highly disaggregated schema of 126 occupational groups based on institutionalized boundaries, as revealed by the distribution of occupational associations, unions, licensing arrangements, and technical features of the work. They define the occupational codes to be combined using occupation-level data from Weeden's archive (2002) of the forms of social closure that detailed occupations have realized (e.g., credentialing, certification, associations, licensing etc.), which then constitute the institutionalized boundaries that generate intra-category homogeneity. This schema is then evaluated against more conventional aggregated classes (i.e. EGP) and other gradational representation of the site of production (ie. Socio-economic status or Prestige scale), with micro-classes managing to better predict occupational outcomes such as life chances, attitudes, consumptions, political participation). Weeden and Grusky (2012) remark that: first, the micro-class component of inequality is more substantial than the big class component for a variety of outcomes. Second, while the association between the big-class schema with different outcomes has declined over time, the micro-class association has remained stable. Third, most of the big-class association is accounted by an income gradient, while occupational earnings account only marginally for the micro-class association. Results, however, vary substantially between outcomes. The micro-class approach seems relevant to explain lifestyle and consumption choices, institutional participation, political and social attitudes, while life-chances like access to education, employment, home ownership, are still very much dependent on social class. Thus "*nominal classes are real enough in their consequences*" (Erikson, Goldthorpe and Hällsten, 2012). Erikson and colleagues (2012) also stress, that while the 'classic' class approach to social mobility research manages to provide a sound explanation for both social mobility *and* immobility, the micro-class approach works just in one direction, explaining *positional inheritance* (father-son maintaining/inheriting the same occupation) that is: *social immobility.* While this perspective proves useful nowadays in grasping intergenerational transmission of advantages in top occupations (Bernardi and Gil-Hernández, 2020), it is less helpful to analyse social stratification, also taking into account the trade-off

between explanatory broadness and parsimony (Breen, 2005; see Lambert and Bihagen, 2014, for an empirical test of different socioeconomic measures).

From a theoretical viewpoint the micro-classes perspective becomes problematic when used to assess changes in social stratification and thus are considered social classes (Pakulski, 2005). First, the occupational structure is by definition *mutable* according to a series of factors among which technical progress, economic changes, and contextual factors. Second, the aim of class analysis is to bring out the overall ongoing constraints and opportunities typical of different stable-in-time systems of social stratification, especially as class positions determine individuals' economic security, stability, and prospects (Goldthorpe 2002). Classes are not necessarily *real* social groups and the aim is not to capture *real* situations of *specific* individuals that class theory has been developed for and social research on social stratification has been conducted in the last decades.[xi] It is important that individuals 'respond' in similar ways to similar class positions, while the extent to which they are influenced by class-specific subcultural values or social norms is less relevant.

Still, micro classes might provide a useful basis for the understanding of social processes and outcomes in modern societies. As "(macro) class analysis" may not fully capture many of the highly specific processes that are involved in occupational mobility – processes that often reflect simply *social differentiation* rather than *social stratification* (Erikson, Goldthorpe, Hällsten 2012) - the micro-classes approach might represent a possibly useful tool dealing with the internal differentiation (in work conditions, attitudes, subcultures etc…) of the same "middle class".

4. Changing social classes?

We now come back to two specific research questions dealing with class structure and its changes. First of all, a reallocation of individuals and occupational positions within the class structure – as a consequence of various phenomena, from the reorganization of the former ford-keynesian equilibria and its regulatory order, to the coming fourth industrial revolution and the diffusion of AI and robotics in productive organizations – is taking place in western economies, driving to what some authors have interpreted as the disappearance of the middle class or the middle class squeeze, or the U shaped society. This is far from being a universal and undifferentiated "trend" among western societies – on the contrary, research shows how it is highly context-dependent, thus underlining the role of institutions (Esping-Andersen 1993, 2015). Secondly, according to a postmodern, reflexive, sociological literature, class and the related agenda based on class analysis, have become "zombie concepts", thus having lost their heuristic usefulness. Section 4.1 shows some preliminary descriptive evidences dealing with the first argument, while section 4.2 recalls

some of the recent research results showing the enduring heuristic fecundity of the same concept of class to explain different social risks and inequality of opportunities.

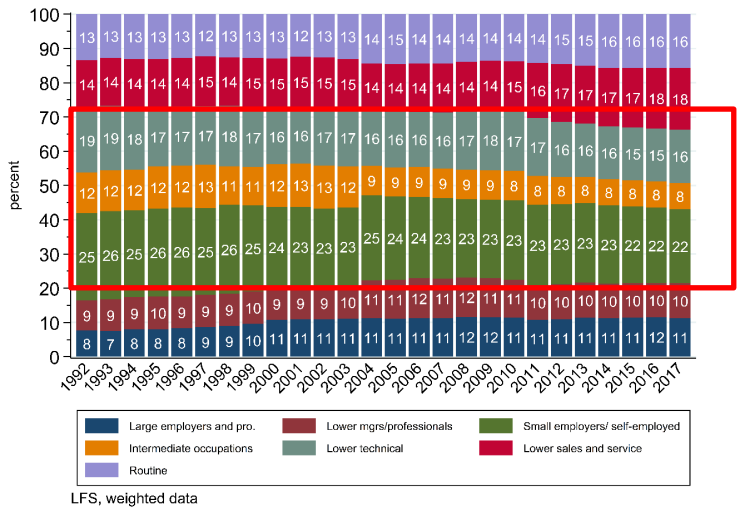
4.1 The stable middle and the role of new technologies

This paragraph reports some empirical evidence on the widely theorized but hardly tested idea about structural changes in class structure. Most of the literature on the supposedly declining middle class concentrated either on income-based-classification (see the other positional paper) documenting relevant changes in the income distribution - in specific countries (Atkinson & Brandolini 2013), or on concepts related to status, rather than social class (see section 2). As we argued above, these are different concepts, yet with some interconnections, as we will detail below.

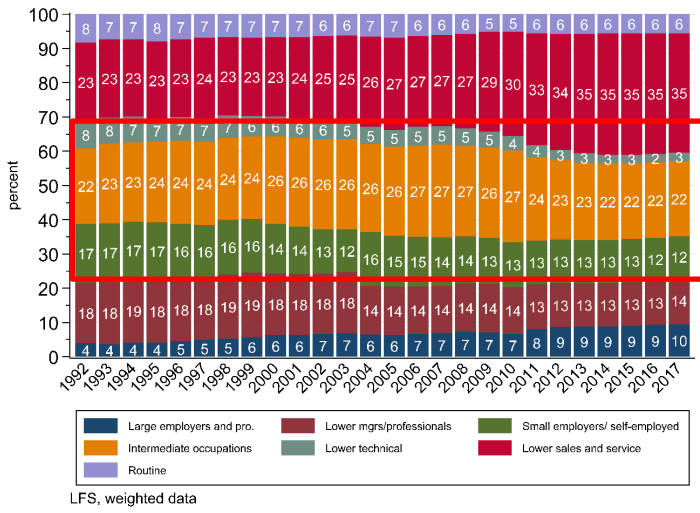
Figure 2 reports a noteworthy stability in terms of social class composition of the Italian society, which is in stark contrast to the idea of an empty middle and rising concentration at the extremes on the bottom and on the top (the "polarization" thesis).

Figure 2. Changes in class distribution from 1992 to 2017, Italy (men and women)[xii]

ESeC - Men, ITALY

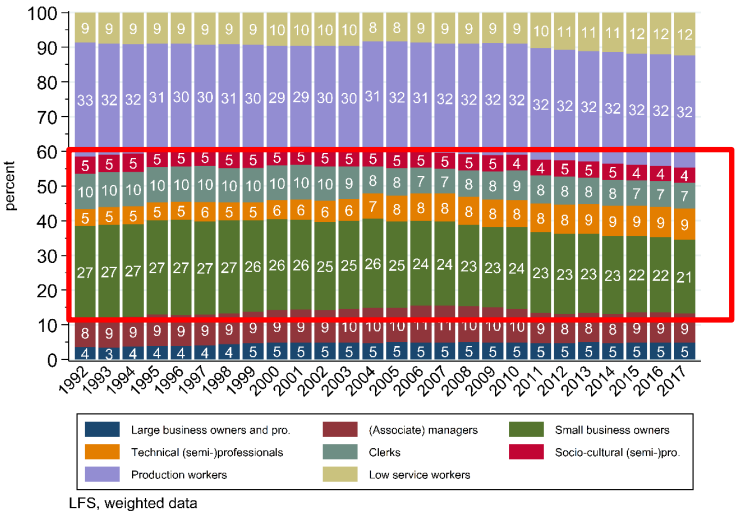


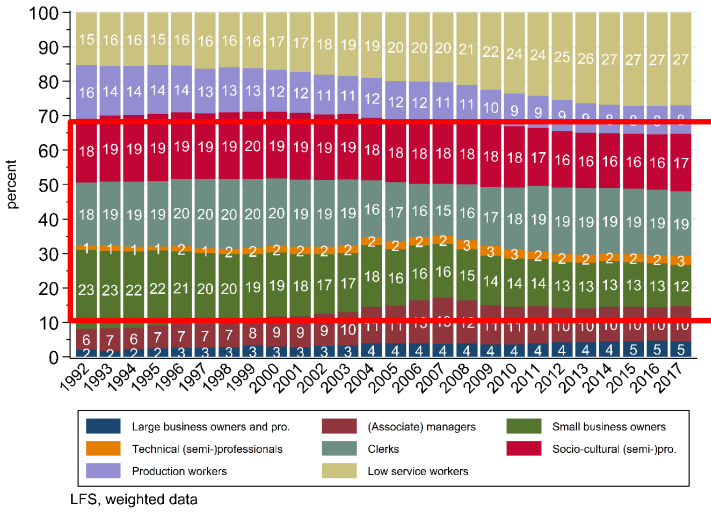
ESeC - Women, ITALY



Oesch's classification – Men

Oesch's classification - Women





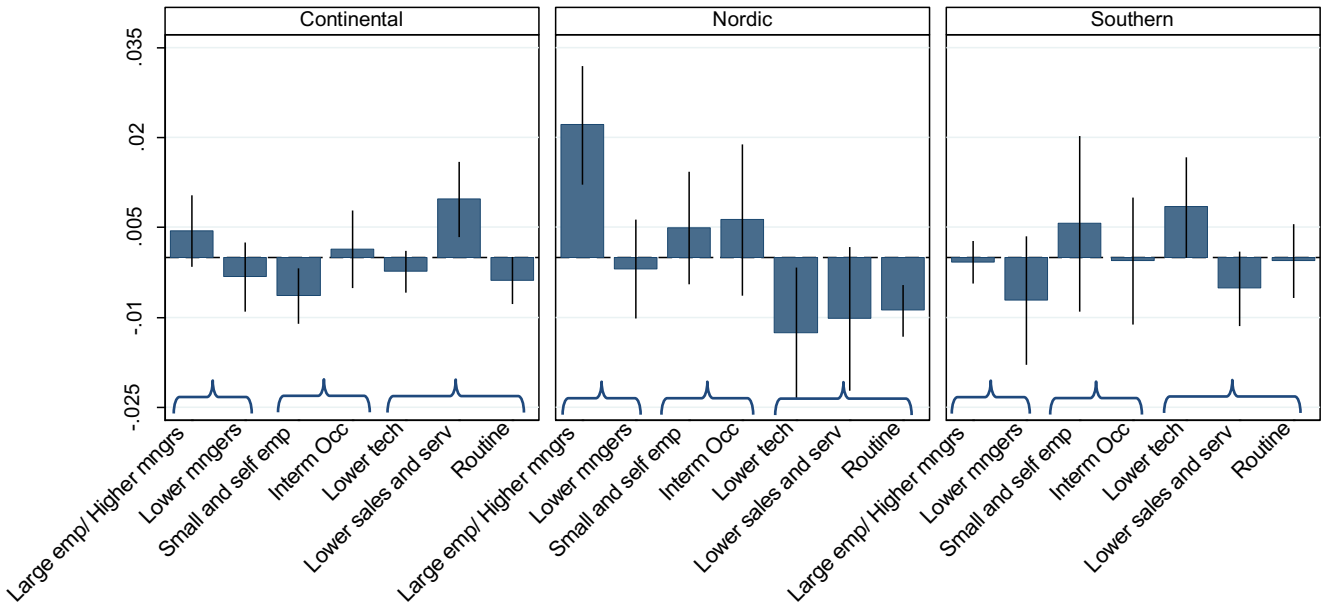
If "the *middle*" is defined (ESeC) as: Intermediate occupations + Higher grade white collar workers + Small employer and self-employed occupations + Petit bourgeoisie or independents + Lower supervisory and lower technician occupations and Higher grade blue collar workers, while *working class* is defined as Lower technical + Lower sales and services + Routine workers, then we can clearly see a relative high stability among men, with the middle class going down by 7 percentage points from 37% among the employed to 30% in the last 25 years (while Service class grew of about 4 p.p. in the same time span). Also in Oesch's schema the reduction of the "middle class" is not dramatic (6 p.p. from 1992 to 2017 for males). Changes in women are more accentuated and come from a notable increase in "Lower sales and services occupations" – thus working class positions - which however has to be put in context with rising female employment rates, occurring also in these parts of the labour market.[xiii]

Figure 3 shows the impact of the diffusion of robots at the EU regional level, in manufacturing plants, and its impact on Employment per ESeC classes, in different country clusters. The introduction of new and powerful labour replacing technologies has historically inspired public concern about the risk of mass unemployment and a jobless future. Indeed, anxiety about technological unemployment has differently focused on the various elements of the class structure, among which the "middle class" has been proposed as the victim of the new technologies, in a scenario of strong social polarization, with top-winner-high-human-capital&highly-rewarded positions set against a gloomy scenario of swelling service proletariat. The analysis (Minardi, Cutuli, Barbieri, mimeo) addresses Skill/Routine Bias Technical Change and subsequent polarization hypothesis (Acemoglu and Autor, 2011). In a nutshell, the impact of the diffusion of robots on the employment levels of different occupational classes, is diversified

among EU country clusters, signalling the undeniable role of the macro, institutional contexts in mediating the same impact of the technological change on employment levels (and even more so in class stratification). For the purposes of this position paper, two results have to be stressed: in no country cluster, signals of any disappearance of the "middle class" can be observed: it follows that no evidences of any "polarization" of the social structure emerges (so far).

While in the Scandinavian countries, a pattern of upskilling of the occupational structure is evident, with the occupations belonging to the lower classes most at risk of technological substitution, in the other two EU cluster the picture is more nuanced. Traditional self-employment tends to decline with robotisation in continental Europe, but top managers and sales and services employees are favoured by the diffusion of robotics in production. Even less clear the situation in Southern Europe, where no evidence of a middle class squeeze is appearing.

Figure 3. Impact of robotics-diffusion on the levels of employment by ESeC classes



Source: Minardi, Cutuli, Barbieri, mimeo. Average marginal effects based on micro-data for regional and sub-regional analysis come from the EU-LFS 1997-2017. Information on robot adoption is taken from the International Federation of Robotics, and task indexes are created using O*Net 3.0.

4.2 Class: a "zombie" concept?

The literature on the supposed middle class squeeze mainly focused on changing distributions. It found some support when looking at income distribution but much less so when looking at social classes, their relative advantages/disadvantages and the overall model of social stratification, with relative privileges, as we showed above. Yet, one thing is a changing distribution, another thing is the potentially changing relevance of the concept. We argue that, sociologically speaking,

this is the more relevant point as it allows to grasp aspects of the underlying stable structure (Goldthorpe, 2009) of persisting social and economic inequalities. Several authors see a declining role of occupational classifications in describing the structure of stratification in contemporary societies (Savage et al., 2013; Bagnasco 2008, 2016, Beck 2000, 2002). The argument about the "death of social class" (Clark and Lipset, 1991) or the "democratization" of social and economic risks spreading through all layers of the post-modern societies made by so-called "individualization theory" (Beck, 1992, 2013; Giddens, 1991) refers to the declining explicative power, and thus substantive irrelevance of the concept of social class. At the basis of this the inexorable erosion of classes' influence in determining socioeconomic risks (Beck, 1992, 2000, 2013, 2018; Beck & Willms, 2014; Giddens, 1991) are supposed to be recent societal changes, related to the end of fordism, the spreading of globalisation, and consequent alterations in the production of the employment system. By its very definition, occupation-based social class is strongly related to individual's economic situation, employment stability, the exposure to socioeconomic risks (Erikson & Goldthorpe, 1992; Vandecasteele, 2011; 2015; Whelan & Maître, 2010) and thus structures individuals' life chances (Goldthorpe 2002).

In this perspective, the question about a declining importance of social class becomes one about the relevance of the concept in explaining various outcomes. And the potential middle-class squeeze is reframed in whether, the traditionally "safe" middle-class occupations are losing their capacity to shelter against economic disadvantages and social risks. There is an ample literature showing that occupational class remains stably associated with a variety of economic and labour market related outcomes. We present a brief overview of some recent empirical literature.

Social Class and economic inequality

A number of empirical researches confirm a rather stable and strong association between social class and the economic situation of individuals and households (Gornick and Jantti, 2013; Grand 2013; Helland et al., 2017; Le Grand and Tahlin, 2013). There seems to be some agreement that most of the growth in wage inequality took place especially as between-class-inequality rather than at the level of detailed occupations (Kim and Sakamoto, 2008; Acemoglu and Autor, 2011; Williams, 2017a; 2017b; Zhou and Wodtke; 2019; Morgan & Tang, 2007; Williams, 2013; Mouw and Kalleberg, 2010). A recent contribution (Albertini, Ballarino, & De Luca, 2020) reports that the economic recession did not reduce, but rather increase class-stratification of income, with the working class experiencing a progressive deterioration of their earnings to the extent that authors refer to a "Fanning-out" process. Brandolini et al. also find similar results considering the Italian situation (2019). Goedemé et al. (2020) confirm that class contributes to earnings inequalities,

but report important country differences in the extent to which class stratifies earnings. The role of technological change is still a matter of discussion, but it may have generated higher, rather than lower, levels of (wage) stratification among occupational groups (Gallie, 1991; Autor at al., 2006; Goos et al., 2014; Oesch, 2013; Mouw and Kalleberg, 2010; Williams and Bol, 2018). We showed in the previous paragraph how the impact of technological innovations and robotics is heavily context-dependent: therefore, a 'one-fits-for-all' picture cannot be proposed.

The literature on poverty and material deprivation, generally confirms a constant if not increasing (Gioachin, Marx, Scherer, mimeo), class-based stratification of these risks (Layte and Whelan, 2002; Whelan and Maître, 2010; Maitre, Nolan Whelan 2012; Marx 2011; Nolan and Marx, 2009; Marx, Nolan, & Olivera, 2015; Vandecasteele, 2011, 2015). Thus, social class still emerges as a powerful predictor of the incidence and the duration of poverty or In-Work Poverty (Watson et al. 2006; Barbieri, Cutuli, Scherer, mimeo). Recently, in fact, so-called in-work poverty gained in interest, in particular as the poor were to an increasing share "working poor" (Lohmann and Marx, 2018), with a strong dependency on occupation-based social class (Barbieri et al., 2018, for Italy).

Social class and employment instability

While there has been an increasing instability of employment trajectories, this pattern is far from being generalized, but the distribution of unstable employment (contracts), low wages, as well as the related risks for discontinuous careers remain stratified by social class (side by cohorts or skill levels: Barbieri 2009; Barbieri and Cutuli, 2016). Among others, Goldthorpe and McKnight (2006) provide a review of the empirical literature that focuses on the implications that individuals' class positions have for employment-related risks, among which unemployment, and their economic consequences, in particular economic stability and prospects. The authors find overall support for the theory of class positions. Albertini and Ballarino (2019) come to the same conclusion for the stratification of life-chances. Bernardi and Ballarino (2016) show the still relevant (and persisting over the individuals' work-life) direct effect of class of origin on individuals' occupational destination, while Barbieri, Passaretta et al. (2018) remind that ascriptive and acquisitive inequality systems (like class of origin and labour market dualization) interact worsening individuals' life chances and affecting societal opportunity structures.

Unemployment (job loss) is one of the most disruptive events in employment careers and strongly related to other social risks. There is consensus that, globalization and great recession notwithstanding, this risk continuous to strongly depend on occupational class position (McGinnity and Hillmert, 2004; Lucchini and Schizzerotto, 2010; Lahtinen et al., 2018; Elias and McKnight, 2003). Although these disruptive events are accompanied by negative consequences

for all workers (and their families), evidence suggests the consequences are much harder for some social groups than for others, contributing generally to the accumulation of disadvantages over the life course (Western et al., 2012; Layte et al., 2008; Grotti and Scherer 2014).

Finally, recent works on the possible trade-offs between class and other cleavages of social inequality (Cooke, 2011) have shown how class is still at the basis of the creation of inequality when "equity"-policies are adopted in order to counteract gender unequal distribution of resources. If the interplay between gender and social class is not considered (and policy makers seldom do), gender-equity policies turn to be class-policies, thus creating economic advantages for bourgeoisie women (and men) at the expenses of working class women (Barbieri, Cutuli, Esping-Andersen, Zamberlan, mimeo 2020).

5. Final remarks

The overview presented in this paper had the aim to present the theoretical foundations of occupation based social classes, to describe the concrete measures and depict their usefulness for the analysis of social inequality and stratification. The contribution obviously does not pretend to be neither exhaustive nor does it condense into a neat and unequivocal finding on the relevance of class. To make it a comprehensive Treaty on Social Class much is lacking and it would clearly go beyond a single paper. Among the most obvious gaps are the economic consideration of class, in terms of income-based classes [treated in the positional paper on income based measure] and related mobility, as well as of the enormous literature on social mobility (either as inter- or intra-generational mobility – Bukodi and Goldthorpe 2019, Bukodi et al., 2020) and the factors influencing it – institutions *in primis*. That institutions not only shape distributional inequality but also social stratification is core finding.

Another line of reasoning lacking in this contribution (as well as in the literature!) concerns the possible emersion of a gendered model of social stratification in post-industrial societies. Given that the growth in female labour market participation of the last decades most likely constitutes the biggest transformation in occupational structures, one could expect that national or "country-cluster" specific models of class stratification have become systematically different according to gender and welfare or, say, labour market institutions. A vast amount of literature (one for all: Esping-Andersen 1993) makes us aware that the welfare-labour market arrangements generate specific gendered social hierarchies, which might affect the same social stratification and the mechanisms governing social closure – and even more so intergenerational mobility. Also, those contributions that have tried to target the possible impact of socioeconomic transformations on

the structure of nowadays-Western societies (the "middle class squeeze" hypothesis) have completely ignored the possibly gendered nature of the claimed structural changes. There is ample room for novel contributions.

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[i] Differences are intended as transient, inequalities as stable.

[ii] This approach shifts from production to consumption, from inequality to differences, from the social to the cultural sphere and from life chances to lifestyles (Crook et al., 1992).

[iii] From a methodological point of view, socioeconomic classifications face two major problems: that of validity - the degree of empirical confirmation of their key constitutive concepts - and that of relevance - the capacity to grasp the most relevant features of contemporary social hierarchy and division (Pakulski, 2005).

[iv] Maitre and co-authors found no evidence supporting the "middle class squeeze" thesis, as well as the economic polarization thesis, in Ireland. With respect to the numerical reduction of the middle class, it's mainly a matter of defining the occupational categories that have to be included in the "middle". Scholars, indeed, generally rely on arbitrary thresholds of the national median income and results fluctuate accordingly (Atkinson and Brandolini, 2013)

[v] Bagnasco leaves unclarified the issue regarding the hierarchy among these multiple inequalities, in term of their stratification capacity, that is in their "relative importance" in the creation of more or less stable structures of social inequality/ies. If this 'hierarchical' structure of stratifiers is intended as fluid, what follows is that also a coherent and stable system of social stratification will no longer be possible, with the consequence – oddly enough, not considered by B. – that social conflict itself (and moreover labor/capital conflict) will be implicitly denied.

[vi] Weber (1922) writes: " 'Stände,' in contrast to classes, are normally communally based Gemeinschaften. However, they are often of an amorphous sort. In contrast to 'class situation,' which is purely determined by the economy, we want to characterize the Stände situation as resulting from the typical integral part of life, in which the fate of men depends on a specific positive or negative social assessment of honor. This assessment of honor is tied to the common characteristics of a 'stereotypical' member of the particular Stand. Such honor can also be tied to a class situation: the differences between the classes can be combined with the differences between the Stände in numerous ways. Property as such does not always (…) generate prestige in terms of increased honor within the 'Stand' (…). In the so-called 'pure' modern democracy, where an explicitly ordered privilege of single individuals according to their Stände does not exist, it happens that only families who belong approximately to the same tax class dance with each other. But still the honor based on the 'Stand' does not necessarily need to be linked to the class situation, because such honor normally stands in stark contrast to the pretensions of 'naked' property. So, both propertied and property less people can belong to the same 'Stand' and often they do so with very perceptible consequences, no matter how precarious this 'social equality' becomes in the long run."

[vii] But see: Ranci, Beckfield, Bernardi, Parma (s.d.) The rise of economic insecurity in the EU: concepts and measures, manuscript.

viii An interesting economic contribution deals with the concept of "Permanent Income" (Friedman, 1957). It has been re-conceptualised according to the life course and intergenerational mobility perspective by DiPrete (2002). Brady et al. (2018) thoroughly discuss its operationalization.

[ix] Curiously enough, initially the EGP schema was intended as a tool to implement class analysis as a research program, and not as a theory-driven conceptual instrument.

[x] Clearly, the "micro-class" approach is deeply influenced by the normative and culturalist – thus definitely postmodernist – approach to social stratification that its proponents declare to criticize: the 'site of production' appears to be primarily a mechanism of micro-foundation of attitudes, tastes, subcultures and related behaviors – before than a material, productive, unit.

[xi] Following Goldthorpe (2016), Sociology itself, as a 'Population Science', is not intended to describe/explain micro situations. Micro-level actors' behaviors and choices can be interpreted based on rational action theory (Breen and Goldthorpe 1997; Coleman 1986), but within a micro-macro path finalized at the explanation of social aggregates/social outcomes (Coleman 1990).

[xii] In these graphs, ESeC "Lower technical" refers to ESeC class 8, thus working class. ESEC class 6 ("Lower grade technicians and Supervisors" cannot be identified in LFS, due to missing info on *supervisory position*. They are quantitatively very few (considering isco codes) and have been recoded together with the Manual workers.

[xiii] Class is by definition an aggregate concept that regards individual level position within the occupational structure. However, its relevance is often conceptualized on the household level. In fact, decades of research considered either the male position only to determine a households' class position, or applied a dominance approach considering the highest social class present in the (nuclear) family. This is why it is worth looking at class combinations among partners and their change over time. This is what we plan to do in the next future.