

Who Gains From Organizational Flexibility? Flexible Organizational Practices and Wage Inequality

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Abstract

This study explores the implications of flexible management practices for organizational wage gaps. It argues that the implementation of high-performance and non-standard employment practices is not only skill but also class-biased, favouring workers in supervisory positions. This argument is examined using matched employer–employee data from the 2011 British Workplace Employment Relations Study (WERS) survey, which uniquely includes detailed information on flexible management practices. Findings from fixed-effects models support the argument. Wage gaps are more pronounced between supervisors and rank-and-file workers in organizations implementing high-performance or non-standard employment practices, compared to those without such practices. Notably, heightened education-based wage gaps are observed in organizations adopting only non-standard practices. The results suggest that purportedly efficiency-oriented changes in organizational practices are not wage-neutral but tend to favour already well-compensated workers.

Keywords

high-performance work practices, non-standard employment, organizations, wage inequality

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Introduction

In the past few decades, the management of employees has undergone a significant change (Cappelli, 1995; Osterman, 2000). Fuelled by a growing need for organizational flexibility, many organizations have embraced two types of practices: high-performance work practices for functional flexibility (the ability to quickly and smoothly change the structure and flow of work processes) and non-standard employment practices for flexibility in employment numbers (Kalleberg, 2001). This shift has led to the emergence of the flexible firm, contrasting with the traditional bureaucratic model prevalent in post-Second World War Fordist organizations. While the bureaucratic organizational model provides stability through long-term employment and reliance on formal guiding rules to manage the working process, the flexible firm is characterized by greater employment and organizational design fluctuations.

In the current article, the following question is addressed: Do both types of flexible work practices similarly benefit (or reduce) the wages of all workers, or do they benefit highly educated workers or workers in supervisory positions more than other workers?

Managerial discussions on organizational restructuring, like Piore and Sabel (1984), portray flexible work practices as a neutral response to environmental pressures driven by globalization and technological change (Watson, 2003). This claim is in line with the organizational contingency theory (Fiedler, 1986) and the resource-based view of the firm (Barney, 1991), which focus on the role of internal and environmental pressures and resources as the main explanatory factors behind the design of organizational practice. Accordingly, the polarization of, as well as in returns to, skills evident in the labour market (Autor, 2014) should be more extensive within the reactive flexible workplaces than within the more traditional bureaucratic workplaces. Therefore, the expectation derived from the managerial approach is for higher skill-biased outcomes, defined here as the wage gaps between highly educated and less-educated employees, in organizations that apply flexible work practices.

While the resource-based view of the firm focuses on market forces as the central factors to shape organizational resource distribution, the new-structural approach in organization studies states that organizational dynamics are rarely shaped by efficiency-oriented motives alone. Power relations within the organizational social relations can shape both the applied practices and their outcomes (Cohen and Pfeffer, 1986; Pfeffer and Cohen, 1984). Studies following this approach have shown how powerful groups succeed in promoting management practices and public policies that are in their interest as being in the common interest (Fligstein, 1990; Mizruchi, 1992; Useem, 1993). Following this approach, the active promotion of flexible work practices serves the professional needs of human resource and general line managers and supervisors but does not necessarily serve the need of rank-and-file employees (Larsen and Brewster, 2003; Watson, 1977). Hence, the expectation that is derived from the new-structural approach in organization studies is that adopting flexible work practices is a class- rather than skill-biased process with classed outcomes. This means that supervisors are the ones that benefit from organizational flexibility in comparison to rank-and-file employees. The result should be higher class-based wage gaps within organizations that apply flexible work practices.

To empirically evaluate the relevance of each approach, the matched employer–employee British Workplace Employment Relations Survey (WERS) data from 2011¹ was utilized. The survey enables the measurement of both the practices of interest and the relevant individual-level wage outcomes resulting from the implementation of these practices. The WERS uniquely includes rich information on both high-performance and non-standard employment managerial practices provided by the senior manager responsible for employment relations in each sampled establishment. The structure of the matched employer–employee WERS data, therefore, provides a valuable opportunity to test cross-level interactions between organizational-level flexible practices and individual-level characteristics in setting earnings inequality. The results confirm an argument predicting class-biased outcomes of the implementation of flexible work practices. Average wages among supervisors (compared to rank-and-file employees) but not highly educated workers (compared to less-educated employees) are higher in organizations that implement flexible practices.

The current work contributes to the existing literature in two main ways. First, utilizing matched employer–employee data, the first rigorous study of the simultaneous relations between high-performance and non-standard employment practices and wage inequality is provided. Second, linking a structural approach to organizational stratification with current organizational restructuring yields important insights on the mechanisms that may underline such changes and the inequality outcomes of adopting various organizational practices. In the light of growing awareness of the crucial role of work establishments in generating income inequality (Kristal et al., 2020; Tomaskovic-Devey and Avent-Holt, 2019; Wilmers and Aepli, 2021), a better understanding of how organizational practices contribute to organizational wage inequality is a valuable contribution.

The next section describes the relevant organizational change, and the managerial practices related to it. Then, existing empirical evidence on the relations between flexible practices and wage inequality is provided, and research gaps are defined. The following section focuses on the two competing theoretical approaches towards adopting flexible work practices and the derived hypotheses concerning its wage-related outcomes.

The emergence of a flexible firm and the stratification-related outcomes

The rise of the flexible firm stems from external pressures, the institutional context in which they were dealt with, and the identity and interests of the relevant organizational actors. From the late 1980s, following increased globalization and rapid technological changes, employment relations began to change toward a more flexible mode (Atkinson, 1984; Capelli, 1995; Smith, 1997). The unstable markets demanded greater organizational flexibility than the traditional hierarchical organization could provide. At the same time, the liberalization of economic and labour markets, the decline in union power and the lack of a centralized regulation system of employment relations provided managers with almost unlimited freedom to come up and initiate organizational solutions that were guided by mainly profit-related considerations (Kochan et al., 1986; Marchington et al.,

2004). The managerial initiative resulted in the emergence of the flexible firm, characterized by the implementation of two main sets of practices: those that serve to achieve numerical flexibility and those that serve to achieve functional flexibility.

Numerical flexibility, the ability to adjust workforce size inexpensively, is achieved through non-standard employment practices like outsourcing, temporary agencies and temporary/part-time work (Atkinson, 1984; Kalleberg, 2003). These practices weaken worker ties to the organization and reduce employer responsibility. Functional flexibility, the ability to redeploy workers across tasks, is fostered by encouraging diverse skills and empowering workers to make independent decisions (Atkinson, 1984; Osterman, 1994). The core high-performance practices, such as autonomous teams, quality circles for cooperative problem solving by workers, information sharing and performance-based compensation, aim to enhance employee control over the work process for maximum utilization of knowledge and skills (Godard, 2004). The integration of both sets of practices defines the flexible firm (Kalleberg, 2001).

Empirical evidence linking flexible work practices to wages, other employment conditions or some form of inequality comes mostly from individual or workplace-level analysis. In the case of non-standard employment practices, there seems to be a unity of findings suggesting a harmful result of these practices on employees' economic outcomes. For example, Dube and Kaplan (2010) identified employees working in outsourced firms using the US Current Population Survey (CPS) data for guards and janitors over the 1983–2000 period and linked this employment status to wages. They find a wage penalty for working in an outsourced firm, controlling for measurable skill and demographic and geographic characteristics. McGovern et al. (2004) analysed representative individual-level survey data from Britain and showed that employees working in non-standard employment relations (specifically on fixed-term and part-time contract) have lower wages, no pension beyond the mandatory, less sick pay and no promotion opportunities. A recent firm-level analysis of Italian organizations showed a negative association between the share of fixed-term contracts in a firm and the average labour cost per employee, especially in low-paying firms (Cirillo and Ricci, 2020). Finally, Bellani and Bosio (2021) analysed the link between the share of temporary workers within local labour markets (defined by occupation–age–geography cells) and the average wages of permanent workers across European countries. Following previous findings, they, too, find a negative association between non-standard employment arrangements and average wages.

The findings on high-performance practices, mostly based on firm-level analysis, are much more mixed and do not clearly answer whether these practices benefit or harm workers. For example, some firm and individual-level analyses point to a positive association between some of these practices and average wages at the organization level (Bailey and Benhardt, 1997; Bailey et al., 2001; Batt, 2001; Cristini et al., 2013; Hunter and Lafkas, 2003; Osterman, 2006). For some practices, such as job rotation, either no or even a negative association was established (Batt, 2001; Black et al., 2004; Handel and Gittleman, 2004; Osterman, 1994, 2006).

A review of the research on the relationship between flexible practices and wage inequality indicates four main limitations. First, in most of the above studies, the relations between flexible practices and wage inequality are treated solely as an empirical

question and remain non-theorized. Second, flexible managerial practices are often defined through a narrow prism, including only one type of practice – high-performance or non-standard employment practices – and, even then, only a reduced form of these practices. Previous studies suggest that capturing the simultaneous adoption of the two sets of practices is important because an uneven spread of both types of practices puts into question the validity of the term ‘flexible-firm’ itself (Pollert, 1988). Third, the focus on average wages rather than more specific group-based gaps conceals inequality within organizations. When studies do examine the relationship between flexible practices and group-based wage gaps, they solely focus on gender, revealing that flexible work practices increase gender pay inequality (Drolet, 2002; Gupta and Eriksson, 2006; Smithson et al, 2004). Lastly, and related to the former point, the use of individual- or workplace-level data obstructs an analysis of the relations between managerial practices at the workplace level and inequality outcomes at the individual level. Accordingly, an alternative approach is proposed and described in the following sections.

How biased is organizational flexibility and towards whom?

According to the managerial approach to labour market analysis, the emergence of flexible employment management practices could be a neutral change that was caused by environmental changes in the economic market (Watson, 2003). Correspondingly, most of the analysis in the existing literature is performed in a prescriptive way in an attempt to find the best practice that will help achieve the highest organizational performance (Godard and Delaney, 2000). However, it has previously been established that the implementation of personnel management practices such as internalized employment relations or hiring procedures is affected by organizational-level political power relations among personnel professionals and trade unions (Cohen and Pfeffer, 1986; Pfeffer and Cohen, 1984). This does not mean that technical requirements do not affect the implementation of personnel management practices, but it is important to consider additional social and political forces. The historical context of the emergence of flexible employment practices empowered specific organizational actors, impacting wage-related outcomes and reflecting relevant power relations.

This article focuses on how flexible work practices shape wage gaps between workers with at least an undergraduate diploma and those below this level of education,² as well as the wage gaps between workers in supervisory positions and rank-and-file employees within the establishment. Two main arguments are put forward. According to the skill-biased organizational change thesis (Caroli and Van Reenen, 2001), the flexible firm should increase educational wage gaps (i.e. education here being a proxy of skill) but should not affect authority-based wage gaps. Alternatively, a competing argument can be developed – the class-biased organizational change thesis – which predicts that the flexible firm increases only authority-based wage gaps but does not change education-based gaps. This argument is based on the idea that work restructuring can occur without any changes in the demand for skills or education and be guided by managers’ fear of uncertainty and loss of control attached to distributing power to rank-and-file workers.

The skill-biased outcome of flexible work practices

Skill-biased outcomes of adopting flexible work practices may arise through two mechanisms. First, increased demand for highly educated workers in establishments that adopt high-performance work practices, and second, increased specialization of establishments leading to non-standard employment among low-educated workers.

Economists and managerial scholars view the adoption of high-performance practices as part of skill-biased organizational change (Bender et al., 2018; Bresnahan et al., 2002; Caroli and Van Reenen, 2001). Firms employing these practices tend to have higher shares of highly educated workers, likely because of increased worker autonomy and responsibility (Gallie et al., 2004). The claim that these practices enhance workers' skills lacks robust empirical support (Lloyd and Payne, 2006). It remains unclear whether the practices precede the increase in skilled workers or depend on their presence in the market. Regardless, the complementarity between high skills and high-performance practices may lead to higher average wages due to the firm-specific knowledge employees acquire and employers wish to retain (Osterman, 2006). Parallel to this, the low-educated, often young, easily replaceable employees become organizational outsiders through non-standard employment relations (Autor and Houseman, 2010; Regoli et al., 2019). Such an arrangement enables employers to reduce labour costs. Consequently, higher wage gaps by education among the remaining organizational insiders of flexible organizations, as opposed to those found in non- or less flexible work establishments, can be expected.

H1: The educational wage gaps are higher among employees of establishments adopting flexible work practices (both high-performance practices and non-standard employment practices), relative to employees of establishments that do not adopt them.

The class-biased outcome of flexible work practices

The current article offers an alternative argument – that adopting flexible work practices is more class-biased than skill-biased. This perspective relies on the idea that external changes that affect the labour market can bear class-biased outcomes. This thesis was put forward by Kristal (2013) when she showed how technological change is not only skill but rather class biased. By further eroding collective bargaining institutions, the technological change reduced the share of labour in the national income. The thesis was further extended in Kristal (2020), which focuses on the working class's access to and control of information, disclosing that computerization provides a structural basis for the further enrichment of already well-rewarded occupations through their control of and access to information.

To elaborate the class-biased approach into the analysis of the outcomes of flexible work practices implementation, Dahrendorf's (1957) authority-based definition of class is adopted. Studies following this approach show that job authority is pivotal in explaining wage inequality (Wodtke, 2016, 2017). Specifically, the authority-based definition of class adopts the notion that managerial or supervisory positions define one's class, shaping their interest group, access to organizational resources and relative power.

The class bias in the flexible firm arises from two factors: (1) the empowerment of managers and supervisors linked to high-performance practices and (2) limited promotion opportunities for workers in non-standard employment relations. Among the three actors shaping employment relations between the World Wars – the state, trade unions and managers (Baron et al., 1986) – managers were the most responsive and influential in pursuing increased efficiency and profitability (Kochan et al., 1986). This suggests that the evolution of flexible work practices predominantly reflects the interests of a specific occupational and status group within organizations. In accordance with this claim, it was established that high-performance practices empower line managers, expanding their decision-making authority in employment management (Larsen and Brewster, 2003; Taplin, 1995; Watson, 1977). The disciplinary aspect of the control system also remains in the hands of managers even in team-based industrial work (Sewell, 1998). The second bias within the flexible firm in favour for those in supervisory positions stems from the de-formalization of the work process that allows managers to make decisions based on vague criteria that are not necessarily made clear to employees. It was found, for example, that the lack of formalization in the allocation of pay according to performance evaluation results in discrimination against women, who receive less pay relative to men with similar performance scores (Castilla, 2008).

While workers in authority positions in flexible organizations may benefit more relative to rank-and-file employees in general, their privilege may be especially prominent relative to employees in non-standard employment relations. Such workers are often employed in jobs without career ladders and promotion opportunities (McGovern et al., 2004; Zeytinoglu and Cooke, 2008). Thus, in establishments that rely on non-standard employment, managerial and supervisory positions are reserved for internal, highly valued employees. Accordingly, higher wage gaps by supervisory positions in organizations that implement flexible work practices relative to similar gaps in establishments that do not implement them can be expected.

H2: The authority-based wage gaps are higher among employees of establishments adopting flexible work practices (both high-performance practices and non-standard employment practices) relative to employees of establishments that do not adopt them.

Table 1 summarizes the two competing theoretical approaches towards the adoption of flexible work practices and their wage-related outcomes.

Data

Data from the 2011 WERS survey was used for the current research. The British case is suitable for analysis for a few reasons. First, the UK has experienced a significant increase in wage inequality during the past few decades. Educational wage gaps between graduates and non-graduates have risen sharply since the 1980s as well as wage gaps between employees in the 90th and 10th wage percentiles pay gaps (Machin, 2011). The sharp union decline and the need to improve performance and competitiveness in some sectors were a fruitful ground for experimentation with new work structures and the adoption of high-performance work systems (Doeringer et al., 2003). However,

Table 1. Summary of theoretical models and hypotheses.

The nature of flexible work practices		High-performance practices	Non-standard employment practices
Skill-biased	Mechanism	Increased demand for highly educated workers	Specialization and cost reduction
	Wage-related outcome ^a	Higher education-based gaps Same authority-based gaps	Higher education-based gaps Same authority-based gaps
Class-biased	Mechanism	Managerial empowerment	Creation of low-tier jobs with no promotion opportunities
	Wage-related outcome	Same education-based gaps Higher authority-based gaps	Same education-based gaps Higher authority-based gaps

Note: ^aIn relation to establishments that do not implement the practices.

the diffusion of these practices was somewhat stalled by managers' unwillingness to delegate power and a certain level of distrust between labour and management. In contrast, due to the liberal nature of the UK labour market, the use of non-standard employment relations spread wide and quickly, resulting in dualization of the labour market and a high share of low-quality employment (Kretsos and Lucio, 2013).

The WERS is unique in its detailed description of organizational characteristics and practices and provides rich information on a sample of employees within each establishment. Therefore, the matched employer–employee nature of the data provides a valuable opportunity to test cross-level interactions between individual- and organizational-level characteristics in setting earnings inequality. Although this survey's last wave was conducted more than 10 years ago, it is the most recent data available. It remains unique in its ability to capture a wide variety of organizational characteristics. The survey population is all workplaces in Britain with five or more employees, which account for 35% of all workplaces and 90% of all employees in Britain.

Information on managerial practices was obtained from the senior manager responsible for employment relations. Once the manager's interview was over, permission was asked to distribute up to 25 questionnaires to establishments' employees who are directly employed by the establishment. If such permission was provided, employees were randomly chosen from a list provided by the senior manager. If the establishment had less than 25 employees, all were targeted to answer the questionnaire. The organizational-level response rate is 46%, and the response rate of the individual-level surveys is 50%.

Only private-sector organizations were used in the present analysis. Since the managerial approach behind the adoption of flexible personnel practices emphasizes performance, profits and cost reduction, as well as a competitive advantage, it is much more relevant to the private sector, although similar practices are often adopted in the public sector. Models were estimated using the information on 1036 establishments and 10,102 employees employed within them. The sample includes work establishments from all industries apart from agriculture, the three largest categories being manufacturing (14%), wholesale and retail trade (13%) and the health industry (13%). The average establishment size is 300 employees, ranging from five to 11,302 employees. See Appendix A for additional information on the sample work establishments.

Variables

Table 2 provides the definitions of the main independent variables – flexible organizational practices – classified into two groups: (1) high-performance practices and (2) non-standard employment practices. An additional variable – flexible organization – was computed to measure the simultaneous implementation of both types of practices.

The most complicated group of practices is that of high-performance practices. Most of the practices of interest could be identified in the survey as ‘yes’ or ‘no’ questions concerning the presence of certain practices. In the case of teamwork and job rotation, information on the share of employees affected by the practices was also available (see Table 2 for a detailed description). For these variables, implementation was defined as when at least half of the workforce was affected by the practice (the exact percent was defined by the survey question formulation, which differs between practices). For practices like information sharing, a few manifestations of the practices could be identified. For example, managers can share information on investment or staffing plans or both. In such cases, the different types of practice implementation were counted. The outcome variable was used then as a scale of the level of commitment to the practice. To create unity of measurement with other practices, the scales were then converted into dummy variables based on the distribution of responses so that a high enough level of implementation could be captured while still having a substantial number of observations within the group. For example, out of the five possible levels of information sharing, 25% of workers were employed in establishments at level 4 and another 25% in establishments at level 5. Accordingly, while the fourth level might seem like a high threshold, lowering it further would result in too large a group of employees.

Once all the single practices were identified, a decision had to be made on how to identify a more general managerial approach that fits the high-performance paradigm. Three approaches appear in the literature: a simple count of adopted practices, the use of factor analysis for identification of interrelated groups of relevant practices or counting implemented groups of practices. The first assumes that application of each of the relevant practices is universally beneficial and the higher the number of adopted practices the better the organizational results (Osterman, 1995). The second approach assumes that practices work best when there is a structural fit between them and some combinations work better than others (Laroche and Salesina, 2017). Following the second approach, latent class analysis was performed to identify work establishments that would seem to fit the high-performance model the most (analysis not presented but available upon request). However, the results were not useful as the vast majority of analysed establishments (2100 out of 2680) adopted most relevant practices to some extent. This outcome probably reflects employers’ willingness to show commitment to a popular management approach more than its strategic implementation. The current analysis therefore relies on the groups of practices identified by Laroche and Salesina (2017) and like them adopts the third approach, namely, counting the implemented groups. Assuming an additive effect to implementation of multiple groups of practices, this method captures the level of commitment to a more strategic managerial approach. The classification of practices includes the following seven groups:

Table 2. Definitions, measures and descriptive statistics of flexible work practices.

	Definition	Measures	Mean and SD	Range
High-performance practices (HPP)				
Information sharing	Information sharing with employees on a range of topics	A scale of positive responses on the following items: (1) sharing information on (a) internal investment plans, (b) financial position of the establishment and (c) the whole organization and (d) staffing plans; (2) the existence of a briefing system	0.49 (0.50)	0, 5
Performance-centred practices	Implementation of performance appraisals that are used for setting pay and training outcomes, as well as the use of variable pay schemes	A scale of positive responses on the following items: (1) the existence of performance appraisals that are tied to provision of training and pay-setting of employees; (2) indication of the use of one or more of the following pay schemes: profit-related pay or bonuses, deferred profit-sharing scheme, employee share ownership, individual or group performance-related pay or other cash bonuses	0.19 (0.39)	0, 4
Time and space flexibility	The availability of time and/or place flexible work arrangements	Dummy variable indicating the provision of at least one of the following work arrangements: working at or from home, flexitime, job sharing schemes, ability to reduce working hours, compressed hours, ability to change set working hours, working only during school term times	0.90	0, 1
Training	Extensive use of employer-provided training to employees	Dummy variable indicating more than 40% of employees participated in employer-provided training in the year prior to the survey	0.58	0, 1
Functional flexibility	Implementation of teamwork and job rotation, which provide organizations with increased flexibility in the working process	Count variable of two dummies: (1) indicating at least 60% of employees work in interdependent and autonomous teams; (2) are formally trained to perform in jobs other than their own	0.11 (0.31)	0, 2
Consultation	The involvement of employees in organizational decision making	Dummy variable indicating that employees are being consulted with before any changes or decisions are made	0.81	0, 1
Autonomy	Core employees' discretion and ability to control the pace of their work	Count variable of two dummies indicating that employees have some or a lot of control over the pace of work and/or some or a lot of discretion over how they do their work	0.52 (0.50)	0, 2
HPP count	Indication of a level to which the high-performance managerial approach is applied	Count variable of all the above	8.94 (2.70)	2–15
HPP dummy	Indication of intensive application of HPP	Dummy variable indicating a score of at least 8 in the count variable (8 being the mean value)	0.71	0, 1
Non-standard employment practices (NSEP)				
Outsourcing	Employment of outside workers in a list of organizational services	A dummy indicating outsourcing at least four of the possible services (out of 11, 4 being the mean value)	0.53	0, 1
Temporary agency employees	Reliance on temporary agencies for employment	A dummy indicating the use of temporary agency workers	0.32	0, 1
Fixed-term contracts	Reliance on fixed-term contracts	A dummy indicating employment of some share of the workers in fixed-term contracts	0.47	0, 1
NSE count	The use of non-standard employment relations	Count variable of three dummies indicating: (1) outsourcing at least four of the possible services (out of 11, 4 being the mean value); (2) the use of temporary agency employees; (3) the use of fixed-term contracts	1.31 (1.04)	0–3
NSE dummy	The use of non-standard employment relations	Dummy variable indicating a score of at least 2 in the count variable	0.40	0, 1
Flexible organization	A simultaneous implementation of both HPP and NSEP	A categorical variable resulting from the combination of HPP and NSE dummy measures suggesting: (1) the implementation of both types of practices; (2) implementation of high-performance only; (3) implementation of non-standard employment only; (4) no flexible practices	2.17 (1.09)	1–4

Note: Sample: 1036 private sector establishments, all industries except agriculture.

Source: WERS, 2011.

1. *Information sharing* – a group of practices signalling the willingness of managers to share information with rank-and-file employees.
2. *Performance-centred practices* – practices that establish monitoring of employees' performance and attachment of its result to decisions concerning training and pay.
3. *Time and space flexibility* – provision of option for flexible time or place of work.
4. *Training* – employer-provided training for a relatively high share of the organizational workforce.
5. *Functional flexibility* – represented by the flexibility of the work process itself achieved by the use of teamwork and job rotation.
6. *Consultation* – the involvement of employees in changes and decision-making.
7. *Autonomy* – the level of control and discretion employees enjoy over their work.

The resulting scale variable based on the counting of the different groups of practices indicates a score for the intensity of application – the higher the score the higher the managerial commitment to the high-performance managerial approach. Finally, a binary variable was computed, identifying organizations that scored higher than average on the counting scale (at least eight out of the possible 15 points); 71% of the analysed organizations obtained higher than average scoring.

The next group of practices includes non-standard employment relations: outsourcing, temporary help agency employees and fixed-term contracts. Establishments were defined as relying on non-standard employment relations when they employed outside workers for a higher than the average number of services, used temporary agency workers and applied fixed-term contracts for at least one employee. Here, too, a counting variable³ was first computed and then translated into a dummy variable that signals rather intense use of non-standard employment relations (scoring at least two points out of the possible three); 40% of the establishments use non-standard employment relations to a relatively large extent.

Table 3 provides the measures and descriptive statistics for other variables used in estimating the models. The dependent variable is the weekly income measured in 2011 British pounds.⁴ Information on wages (as well as other individual-level variables) is only available for directly employed workers, as only they were sampled for the survey. This limitation of the data might mean that the lowest paid workers, those who are employed by outside agencies, are missing from the analysis. Their absence might mitigate the established wage gaps.

To capture the wage gaps by education and supervisory status,⁵ dummy variables were computed to identify respondents who obtained a BA level academic degree (referred to from now on as an academic education) and those in supervisory positions. Individual-level demographic (gender, age, marital and parental status) and job (tenure, working hours, one-digit occupation and temporary employment contract) characteristics were also controlled for. As the estimated models include establishment-level fixed effects (see below), they capture both the measured and unmeasured organizational characteristics, cancelling the need for organizational-level controls.

Table 3. Other variables' definitions, measures and descriptive statistics.

Measures		Mean and SD	Range
Dependent variable			
Weekly wage	Average weekly earnings in 2011 British pounds. The original variable provides information in bands, which were computed into band mean values (e.g. if a person reported earning between 61 and 100 pounds per week, he received the value of 79.5 in the recoded variable).	461.26 (288.25)	42– 1181
Independent variables			
Academic education	A dummy variable identifying employees with a BA or higher academic education	0.31	0, 1
Supervisory position	A dummy variable indicating that the respondent supervises other employees and hence his job is defined as foreman or line manager	0.34	0, 1
Control variables			
Individual level			
Gender	A dummy variable signalling that the individual is a woman	0.50	0, 1
Age	A continuous variable (computed out of a categorical variable containing eight age categories) indicating the respondent's age	41.47 (12.24)	18.5–65
Working hours	The average weekly working hours	34.17 (9.48)	0–96
Occupation	A set of nine occupational categories measured as dummies		
Tenure	A continuous variable indicating the number of years of employment within the establishment	6.00 (5.66)	0–40
Union membership	A dummy variable indicating the individual is a member of a trade union	0.22	0, 1
Marital status	A dummy variable identifying married employees	0.68	0, 1
Children	A dummy variable identifying employees with dependent children under the age of 18 years	0.18	0, 1

Notes: Sample: 10,102 individuals employed in 1036 private sector establishments.
Source: WERS, 2011.

Method

To assess the relations between flexible work practices and wage gaps by education and supervisory position, standard hierarchical ordinary least squares (OLS) regression models with establishment-level fixed effects were estimated. The hierarchical structure of the data stems from the fact that individual workers are nested within establishments, resulting in two levels of analysis. Such models allow the estimation of within-establishment inequality while controlling for establishment-level characteristics invariant among employees of the same workplace without specifying them. Given that among the available organizational-level variables in the data only the relevant practices are of interest, fixed-effects models are parsimonious and hence preferred over models which estimate specific establishment-level coefficients.⁶

While fixed-effects models do not allow the inclusion of establishment-level variables, they do allow for inclusion of cross-level interaction terms. This is beneficial to the current analysis as it requires the interaction terms between education and supervisory status (on individual level) and organizational practices (on establishment level). See Bol and Weeden (2015), Janietz and Bol (2020) and especially Rainey and Melzer (2021) for similar types of modelling. The model is of the following form:

$$\hat{Y}_{ij} = \alpha + \beta_j + \gamma_{flexible*educ_i} + \delta_{flexible*supervisor_i} + \epsilon_{ij}$$

where $\hat{Y}_{ij}$ is the wage of employee i in organization j , α is constant and β_j is the establishment-level fixed-effects coefficient of establishment j . In other words, β_j represents the deviation of the mean wage in establishment j from the overall mean wage. $\gamma_{flexible*educ}$ is the cross-level interaction coefficient of the interaction between a dummy variable signalling the presence of the relevant flexible work practices and the dummy signalling an employee's academic education (or lack of it). $\delta_{flexible*supervisor}$ is a similar cross-level interaction term between the relevant work practices and a dummy signalling ones supervisory position. Finally, ϵ is the error term.

A note should be made concerning the limitation of the data used in the current research. While the matched employer–employee nature of the used dataset is its major virtue, the lack of information on the full workforce of each sampled organization is an important drawback. Additionally, information on work practices was only available on the organizational level. This means that while establishments where teamwork is applied can be identified, it is impossible to know whether any of the sampled workers participate in team-based work. Accordingly, the use of individual-level information on work practices and employment relations can provide an additional and more precise evaluation of the link between work practices and their wage-related outcomes. Such information is hard to obtain, and this is an important yet desired challenge for future research.

Findings

Table 4 displays employment and wage statistics based on academic education, supervisory status and implemented work practices. Organizations with both types of flexible

Table 4. Distribution of employees, weekly wage^a and wage gaps by education and supervisory status, by organizational practices and the establishment's union status.

	High-performance practices		Non-standard employment relations		Both	Overall
	Yes	No	Yes	No		
% Academic education	34%	22%	39%	24%	41%	31%
Weekly earnings – non-academic	397	346	443	336	450	383
Weekly earnings – academic	651	545	704	524	720	632
Earnings gap by education	64%	57%	59%	56%	60%	65%
% Supervisory position	34%	33%	33%	35%	33%	34%
Weekly earnings – non-supervisors	406	329	464	311	477	387
Weekly earnings – supervisors	635	516	710	515	728	607
Earnings gap by supervisory position	56%	57%	53%	65%	53%	57%
N individuals	7620	2454	4915	5159	3981	10,074
N organizations	739	297	418	618	335	1036

Notes: ^aPresented in 2011 British pounds. Sample: private sector, full- and part-time directly employed workers, aged 18–65 years. Source: WERS, 2011.

practices show a higher share of highly educated employees, aligning with the presumed demand for skilled workers in flexible workplaces. However, the share of supervisors remains consistent across different types of flexible practices, challenging the notion of flattened organizational structures in flexible firms. As to wage gaps, on a descriptive level, it seems that both types of work practices benefit highly educated workers but not supervisors. This pattern changes once individual- and establishment-level characteristics are controlled for, as presented in Table 5.⁷

Starting with the base model (model 1), as might be expected, academic education and supervisory position are related to higher average earnings as is evident from the positive and statistically significant coefficients. Given the dependent variable's categorical nature, the wage gap's precise size cannot be established since it is calculated using average values of wage bands from the original survey question. Accordingly, we will focus on the direction and statistical significance of the coefficient in interpreting the model results.

Once cross-level interactions with flexible organizational practices are included (models 2–4), it is evident that high-performance work practices benefit supervisors more than rank-and-file employees ($\beta = 28.62, p < 0.001$), while non-standard employment relations benefit both educated employees and supervisors ($\beta = 29.33, p < 0.01$, and $\beta = 56.11, p < 0.001$, accordingly). Model 5 presents the interaction coefficient between a measure of simultaneous implementation of both types of flexible work practices with education and supervisory status, in relation to the implementation of only one type of practice or none at all. Since both coefficients are positive and statistically significant, it can be concluded that flexible work organizations are characterized by higher wage gaps between educated and non-educated workers and higher wage gaps by supervisory position. Hence, in relation to the study's hypotheses, findings that are presented in Table 5 lead to the conclusion that while the implementation of high-performance work practices is only class-biased, the implementation of non-standard work practices is both class- and skill-biased.

A more nuanced analysis of the detailed work practices within each group is presented in Table 6 and enables better understanding of the driving force behind the general trends. Table 6 presents the interaction coefficients between each of the detailed practices within the general flexible approach with both academic education and supervisory position. Starting with high-performance practices and academic education, it is evident that the dummy measure of this practice group obscures the fact that employer-provided training benefits the highly educated more than those without an academic degree. High-performance work establishments are indeed known for the great emphasis on employee training (Sung and Ashton, 2005; Whitfield, 2000). However, this interaction alone is insufficient to create a more general, skill-biased trend.

As to supervisory positions, the class-biased association between these practices and wages stems from implementing performance-centred practices and increased employee autonomy. This suggests that supervisors of autonomous employees are actually those who benefit most from employees' empowerment (in terms of average wages). The focus on performance evaluations and attachment of pay to performance also seems to provide supervisors with a channel to extract additional rents in their favour. This might seem counter-intuitive at first glance as increased employee autonomy might suggest more

Table 5. Ordinary least squares regression estimation of weekly earnings with establishment-level fixed effects – interaction coefficients between flexible work practices, academic education and supervisory position.

	Model specifications				
	1	2	3	4	5
Academic education	75.27*** (4.306)	48.01*** (9.771)	73.74*** (4.287)	53.93*** (9.756)	60.25*** (5.596)
Supervisory position	95.49*** (3.953)	95.46*** (3.948)	43.20*** (7.870)	44.88*** (7.882)	72.54*** (4.911)
Cross-level interactions					
HPP*Academic		9.517 (10.09)		5.293 (10.09)	
NSE*Academic		36.85*** (8.138)		29.33*** (8.148)	
HPP*Supervisor			29.34*** (8.171)	28.62*** (8.196)	
NSE*Supervisor			58.87*** (6.978)	56.11*** (7.014)	
Both HPP and NSE*Academic					30.81*** (8.133)
Both HPP and NSE*Supervisor					55.19*** (7.117)
(Omitted: one type only or no flexible practices at all)					
N individuals	10,074	10,074	10,074	10,074	10,074
N establishments	1036	1036	1036	1036	1036
R ²	0.481	0.491	0.495	0.495	0.494

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. HPP: high-performance practices; NSE: non-standard employment. Sample: private sector, full- and part-time directly employed workers, aged 18–65 years. The dependent variable is ln average weekly earnings in 2011 British pounds. Other controls: gender, age and age squared, working hours and working hours squared, tenure, marital status, children, temporary employment contract, occupation and union membership. Table 5 presents findings from the ordinary least squares regression estimation of weekly earnings with establishment-level fixed effects. The model includes relevant individual-level control variables, as well as dummies for academic education and supervisory position. The findings on the control variables (shown in Appendix B) are as expected: women (especially married) and temporary workers earn on average less than men and permanent employees. Age and working hours are positively related to average earnings. Individual-level union membership was not found to have a significant statistical effect on wages.

Source: WERS, 2011.

equalized power relations between workers and supervisors. However, if the driving force of the spread of high-performance work practices was the will of personnel managers to shape their position within the organization into a professional one, then these findings can be interpreted as part of professional power accumulation. Abbott (1988)

Table 6. Ordinary least squares regression estimation of weekly earnings with establishment-level fixed effects – interaction coefficients between detailed flexible work practices, academic education and supervisory position.

	Academic education		Supervisory position	
	Interaction coefficient	SE	Interaction coefficient	SE
High-performance practices				
Information sharing	−7.363	(8.827)	−7.405	(7.530)
Performance-centred practices	−1.112	(9.895)	25.86***	(8.890)
Time and space flexibility	−4.035	(21.64)	15.69	(14.17)
Training	15.02*	(8.448)	6.493	(7.192)
Functional flexibility	−9.849	(13.28)	1.843	(11.50)
Consultation	−6.159	(10.94)	−5.288	(9.399)
Autonomy	4.722	(8.191)	32.34***	(7.005)
Non-standard employment practices				
Outsourcing	2.640	(8.699)	38.31***	(7.341)
Temporary agency employment	26.07***	(9.077)	19.44***	(7.756)
Fixed-term contracts	16.16*	(8.901)	41.01***	(7.480)
N individuals	10,074		10,074	
N establishments	1036		1036	

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Sample: private sector, full- and part-time directly employed workers, aged 18–65 years. The dependent variable is ln average weekly earnings in 2011 British pounds. Other controls: gender, age and age squared, working hours and working hours squared, tenure, marital status, children, temporary employment contract, occupation and union membership.
Source: WERS, 2011.

states that incumbents of a profession can establish their superiority by capturing the role of the specialist who defines the problem at hand, as well as the expert who decides whether the provided solution is appropriate. The ability of supervisors in high-performance establishments to evaluate the performance of autonomous workers and attach rewards to it may fit this mechanism of power accumulation. The supervisors of autonomous workers thus become the professionals of management while their autonomous supervisees become subordinate in their relative worth.

Moving on to non-standard employment practices, it seems that temporary employment (both through outside agencies and inside fixed-term employment contracts) is the driver of the skill-biased outcome of their implementation. In the context of class-biased outcomes, outsourcing also becomes important. This implies that the higher authority-based wage gaps among organizational insiders are the outcome of the loose organizational ties of the non-standard employees.

Lastly, the possible correlation between academic education and supervisory status was considered. Table 7 shows the interaction coefficients between different combinations of academic education and supervisory status and the two types of flexible work practices. Relative to rank-and-file employees without academic education, supervisors

Table 7. Ordinary least squares regression estimation of weekly earnings with establishment-level fixed effects – interaction coefficients between detailed flexible work practices and combinations of academic education and supervisory position.

	High-performance practices	Non-standard employment practices
Academic education, supervisory position	8.978	78.48***
Academic education, rank and file	21.58*	32.56***
No academic education, supervisory position	33.39***	42.59***
No academic education, rank and file	Omitted	Omitted
R^2	0.502	
N individuals	10,074	
N establishments	1036	

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Sample: private sector, full- and part-time directly employed workers, aged 18–65 years. The dependent variable is ln average weekly earnings in 2011 British pounds. Other controls: gender, age and age squared, working hours and working hours squared, tenure, marital status, children, temporary employment contract, occupation and union membership.

Source: WERS, 2011.

without academic education and educated rank-and-file employees benefit from high-performance work practices. In contrast, highly educated supervisors do not. All three of the non-omitted groups benefit relative to the non-educated rank-and-file workers from the implementation of non-standard employment. From the analysis of detailed practices (not presented here due to space constraints but available upon request), it is evident that highly educated supervisors benefit from all types of non-standard employment relations and to some extent from the provision of training, information sharing and increased work discretion. Academic rank-and-file workers benefit from the presence of temporary agency workers (non-standard employment) and flexible time and space arrangements (high-performance practice). Non-educated supervisors benefit from all types of non-standard employment relations as well as performance-centred practices and increased employee discretion. The fact that non-educated supervisors benefit from high-performance work practices but educated supervisors do not, reinforces that in the case of these practices authority is more important than education.

Conclusions

This article has focused on the association between flexible organizational practices – high-performance practices and non-standard employment relations – and earnings inequality within organizations. As organizations are the primary units in which earnings are generated and distributed, their practices are an important factor in shaping inequality. Indeed, the evidence presented demonstrates that flexible organizational practices are related to higher education-based as well as authority-based inequalities within workplaces.

Existing literature proposes a complementarity between high-performance work practices and employees' education (Bender et al., 2018; Bresnahan et al., 2002; Caroli and

Van Reenen, 2001). It is implied that this complementarity should result in a bias – the increased demand and value of the work performed by educated employees can lead to wage benefits reserved for this group of workers alone, leaving the wage levels of the less educated workers much lower. However, the current findings show higher education-based wage gaps in establishments which rely on temporary work rather than in establishments that apply high-performance work practices. This suggests that when an education-based bias exists in flexible work establishments, it is related more closely to the differentiation between organizational insiders and outsiders rather than to performance-related factors.

In contrast to the efficiency-oriented approach towards organizational flexibility, the current article proposes an alternative argument – that the adoption of flexible work practices is more class- rather than skill-biased. The findings support this claim. Both the use of non-standard and high-performance work practices relate to higher authority-based wage gaps between supervisors and rank-and-file employees. Interestingly, in the case of high-performance practices, increased employees' autonomy and performance-focused practices drive this bias in wages. This suggests that decreased formalization and higher discretion in flexible organizations provide workers in authority positions with more opportunities to benefit themselves.

Maintaining the class-based power relations within the workplace is a constant challenge faced by managers. In the context of employee empowerment, one must remember that line managers are often limited by both financial constraints and employees' resistance to change (Edwards and Collinson, 2002). Thus, in the process of translating top management's vision to actual practice performed by line managers, a gap between the rhetoric and the practice is created. However, it was previously established that managerial initiative for job redesign could result in the upgrading of job quality in terms of employees' autonomy, among other things (Findlay et al., 2016). Thus, the class-biased outcome of adopting flexible work practices is not inevitable and can be mitigated given managers' willingness to develop suitable strategies.

The current findings suggest that in addition to an array of institutional changes such as the decline in union power, market liberalization, financialization and globalization, as well as deterioration of labour-related law enforcement (Kristal and Cohen, 2017), flexible work practices may also have a role in the growing wage inequality in general and the empowerment of the managerial profession specifically. Since the current study is based on a cross-sectional analysis, it cannot be claimed that the adoption of flexible work practices is the reason behind class-biased wage outcomes. However, the findings fit the power and conflict-based approach towards industrial relations and further emphasize the importance of analysing authority class groups in the study of labour market inequality.

In light of the presented findings, a few points for future research are proposed. First, the mechanisms through which supervisors obtain higher wages within the flexible firm could be further explored. Supervisors' pursuit of professionalization was suggested here as one such mechanism, but other mechanisms could also be relevant. For example, Wilmers and Zhang (2022) find that jobs defined as pro-social pay on average lower wages to highly educated workers. Skilled workers agree to lower wages in return for the opportunity to make a positive social impact. The chance to exercise autonomy at the

workplace may work in similar ways. While educated workers may agree to lower wages in return to higher job autonomy, the job definition of the supervisor included autonomy to begin with but now the supervisor's job becomes more complex, thus enabling him/her to demand higher returns to his/her work. Another possibly fruitful strand of research in the area might be to include gender and race in the analysis of inequality in flexible firms. For example, given the differences and changes in the access of racial and gender groups to managerial jobs (Shams and Tomaskovic-Devey, 2019), the inclusion of an intersectional approach in the analysis of wage inequality within flexible firms could provide interesting insights.

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Supplemental material

Supplemental material for this article is available online.

Notes

1. 2011 is the latest version of the WERS. Previous waves of the survey were conducted in 1980, 1984, 1990, 1998 and 2004. The previous waves cannot be used for analysis of the current article since the samples and income measures vary considerably between them.
2. The undergraduate degree was chosen as a cut-off point due to the well-known phenomenon of vast expansion of the supply of workers obtaining a college degree that, surprisingly, was not accompanied by a decrease in the college wage premium. Blundell et al. (2022) hypothesize that in the UK context this process is at least partially explained by the way in which firms adopt differentiated production structures as an answer to technological changes.
3. The findings on the dummy measures of each type of practice are presented in Table 6 and the findings on the count measures can be found in Appendix B.
4. Since wages are measured using a categorical variable, the original values were used for estimation of the models. In additional models (not shown), we use log values of wages as the dependent variable. The findings are similar to those presented in Tables 5 and 6. For a more intuitive interpretation of the findings the wage categories set by the survey were recoded into average values of each category. The bottom wage category was set at 42 pounds (to keep a similar difference between the bottom category of 0–61 and the value of 79.5). The top wage category was set as 1181 to keep the trends of 20% difference between the top wage categories (set at 585.5, 734.5 and 934.5). The use of different top and bottom values provide very similar results, both on descriptive level and within the estimation of the models.
5. We estimated similar models using a dummy variable signalling employment in the managerial occupational group instead of a supervisory position. The findings are similar to those presented in Tables 5 and 6. Since all managers have a supervisory component in their work, but not all supervisors are necessarily classified as managers, the use of supervisory position

is more appropriate given that it still contains the authority component, crucial to our theoretical claim.

6. As can be seen from Appendix C, the fixed and random effects models provide very similar findings. Given that random effects models require a strong list of establishment-level control variables, relying on the fixed-effects models is more parsimonious and hence preferable.
7. Table 5 presents only the coefficients of interest. For a description of the full model 5 please see Appendix B.

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