# Hiring intentions at the intersection of gender, parenthood, and social status. A factorial survey experiment in the UK labour market

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Extant literature points to the gender, parenthood, and social status of job applicants as crucial factors influencing employers' hiring preferences and behaviours. However, little is known about whether and to what extent the intersection of these attributes leads to specific forms of hiring discrimination. This study aims to fill this research gap by examining whether labour market (dis)advantages related to gender, parenthood, and social status occur in an additive or interactive relationship. We conducted a factorial survey experiment in which more than 2,500 UK-based individuals with recruiting experience rated the profiles of fictitious candidates for various job vacancies. We found significant and substantial discrimination against mothers, indicating the existence of a cumulative disadvantage between being a woman and having children, while high-status candidates were more favourably positioned, albeit with noteworthy differences depending on how social status was signalled. Most interestingly, the motherhood penalty was significantly reduced (up to almost half) for high-status candidates, suggesting a compensatory effect of signalling a high status. This novel evidence in the British context highlights the importance of examining the intersection of different dimensions of discrimination and inequality.

### Introduction

Individuals' labour market allocation significantly affects their life chances and societal efficiency and equality. Since recruiters tend to serve as labour market gatekeepers, their decisions regarding a candidate's suitability could potentially eradicate or reproduce existing inequalities. Several theoretical perspectives and empirical studies have shown that recruiters' evaluations are not solely based on candidates' qualities and human capital but also on personal attributes unrelated to the applicant's work performance, thus pointing to discriminatory practices (e.g. Benard and Correll, 2010; Azmat and Petrongolo, 2014).

Therefore, it is unsurprising that hiring has long been a subject of research on the mechanisms of inequality, with numerous studies suggesting that recruiters' discriminatory behaviours are determined by a candidate's ascribed and achieved characteristics (Neumark, 2018). Gender, parenthood, and social status appear to be crucial aspects affecting recruiters' decision-making. Considering these attributes independently, gender has been repeatedly shown to trigger discriminatory behaviours. However, existing studies are ambiguous about the direction of such gender effects (Galos and Coppock, 2023). Additionally, parenthood status may exacerbate recruiters' discrimination against female candidates (Benard and Correll, 2010). Finally, recruiters tend to favour candidates displaying markers of higher social status (Rivera, 2015).

Nevertheless, little is known about how recruiters respond to different combinations of these personal attributes. Are the (dis)advantages related to one characteristic in an *additive* relationship with those related to another, or are they in an *interactive* relationship, meaning that an accumulation of (dis)advantages or compensatory mechanisms are in place? The few studies that have addressed the joint impact of gender and social status (often referred to as class)<sup>1</sup> on hiring discrimination have focussed exclusively on the United States with contradictory results (Rivera and Tilcsik, 2016; Thomas, 2018). This literature also tends to ignore parenthood as a vital amplifier of gender effects.

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In sum, research on whether and how gender, parenthood, and social status intersect to determine hiring discrimination is still limited.

To address this gap, we drew on an original factorial survey experiment in which UK-based individuals with recruiting experience evaluated the profiles of fictitious job applicants. Experimental manipulation of the various signals of theoretical interest ensured valid causal testing of discriminatory intentions, and the reliance on a large sample of recruiters enhances the external validity of this study. In contributing to a better understanding of the determinants of social inequalities in the UK labour market, we provide more recent experimental evidence on social status-based discrimination in the British context (thus adding to previous works, e.g. Jackson, 2009), and we expand the knowledge about intersecting forms of discrimination.

#### **Theoretical background**

The hiring process is crucial in determining individuals' future labour market outcomes (Bills, 2003; Barbieri and Gioachin, 2022). However, unlike other occupational aspects, such as wage bargaining or job promotion, hiring is characterised by an inherent information asymmetry, as recruiters have limited information about job applicants. The economic literature has argued that the lack of comprehensive information about a candidate's future job commitment and performance is the fundamental condition triggering discriminatory behaviour. According to the literature on statistical discrimination (Phelps, 1972; Arrow, 1973), recruiters are more likely to rely on indirect or 'probabilistic' signals (Fossati, Wilson and Bonoli, 2020) when direct signals of an applicant's work productivity are missing or unclear. Indirect signals tend to coincide with an individual's group belonging, such as gender, parenthood, or social status. Such personal characteristics of job applicants may further trigger preferences or aversions in recruiters and culminate in discriminatory behaviours-a phenomenon known as taste-based discrimination (Becker, 1957).

Given the centrality of the hiring setting for individuals' future labour market trajectories and outcomes and its exposure to discriminatory heuristics, we discuss below relevant theoretical perspectives and previous literature that have highlighted whether and why recruiters might discriminate on the basis of an applicant's gender, parental status, and signalled social status. The first section is dedicated to the individual role of each of these personal characteristics for outcomes in the hiring process, while the second section focuses on the intersectional relationship that these characteristics have with each other. In particular, we first review the literature on the multiplicative relationship between gender and parenthood, which have often been considered together in studies of labour market discrimination, and then we discuss how and why social status may (or may not) be a third interactive term.

### Main effects

Gender, parenthood, and the signalled social status of job applicants or employees have all emerged as determining factors in the decision-making of recruiters or employers. Taken individually, gender has repeatedly been shown to trigger discriminatory behaviour, with women generally being more disadvantaged in the hiring process compared to men, even when human capital and work-related characteristics are considered (Azmat and Petrongolo, 2014; González, Cortina and Rodríguez, 2019). One reason for this is the existence of gender stereotypes that equate women with communal qualities, which are particularly relevant when it comes to caring responsibilities and the domestic production sphere, and which are perceived as contrasting with the agentic capacities required in the workplace (Cuddy, Fiske and Glick, 2008; González, Cortina and Rodríguez, 2019; Strinić, Carlsson and Agerström, 2021). Furthermore, the theory of statistical discrimination suggests that discrimination against women is driven by employers' observations that women are, on average, less committed to their work and less productive than men (Phelps, 1972). This can be partially explained by their motherhood and other related (gendered) childcare responsibilities, although discrimination against women can be found even before they transition to motherhood (Zamberlan and Barbieri, 2023). Despite the large body of literature supporting the idea that women are generally more disadvantaged than men in the hiring environment, it should be noted that recent empirical research has highlighted non-negligible heterogeneity in the effects of gender on hiring opportunities across occupations (Kübler, Schmid and Stüber, 2018; Galos and Coppock, 2023) and national contexts (Birkelund et al., 2022).

Parental status has often been considered in studies focussing on gender discrimination. The reason for this is that having children might increase the perceived communal characteristics (related to nurturance and care) of an individual (Ridgeway and Correll, 2004) and may be a signal of orientation towards the family sphere as opposed to the work sphere (Hakim, 2000; Gioachin and Zamberlan, 2024). Furthermore, the right to take parental leave or time off, along with the childcare responsibilities that having children entails, especially if they are young, clash with the 'ideal worker' norm (Correll, Benard and Paik, 2007; Benard and Correll, 2010), which demands a continuous working career and sustained commitment to work. Notably, this argument is inherently gendered, as the persistent gendered division of labour, with women as the primary carers, makes the impact of parenthood on labour market outcomes particularly adverse for mothers and nil, or even reversed, for fathers (Correll, Benard and Paik, 2007; Benard and Correll, 2010; Hipp, 2020). Parenthood as an amplifier of the gender effect is discussed in more detail in the following section on the intersectional relationship between these personal characteristics.

Coming to the third and final personal trait considered, social class, social status, and socioeconomic position are all essential determinants of distributional and intergenerational inequalities (Weeden et al., 2007). Socioeconomically privileged individuals often benefit from advantageous economic, cultural, and network-based resources throughout their education and labour market trajectories (Bourdieu, 1979). As Rivera (2012) points out, class- and status-related disparities also emerge in hiring, which is not only a process of skill sorting but also cultural matching between candidates, recruiters, and a firm.

Existing experimental studies have generally followed a cultural approach when operationalising social class, which stresses the multidimensionality of class belonging (Bourdieu, 1979) and focuses on cultural resources and preferences that characterise different social strata (Savage et al., 2013). In contrast, structural (or neo-Weberian) approaches clearly distinguish between class and status (Chan and Goldthorpe, 2007), with the former term indicating the (dis-)advantages emerging from employment relations and the latter pointing to a socially-recognised hierarchy based on individuals' ascribed attributes or their 'social honour'. When recruiters screen CVs or conduct job interviews, they cannot easily detect objective class clues in the form of employment relationships. However, recruiters can more easily infer an individual's social status based on their ascribed traits, such as their name (which reflects their background of origin), as well as their tastes, cultural consumption, and lifestyle markers, elements that strongly correlate with social class (of destination) (Jæger and Breen, 2016). These factors also represent the roots of group membership and the related mechanisms of social closure (Weber, 1904). Employing these concepts, most existing studies have relied on names and surnames, as well as markers of cultural consumption to effectively measure multifaceted aspects of social status rather than occupational class. In our study, we follow the neo-Weberian distinction between class and social status and use the latter term when dealing with ascribed traits (names and surnames) and lifestyle markers.

Markers of social status confer competence expectations (Correll and Ridgeway, 2003; Ridgeway and Fiske, 2012), with individuals displaying a higher social status being perceived as not only more competent and committed but also as having superior soft social skills (Fiske and Markus, 2012; Rivera and Tilcsik, 2016). These perceptions may motivate recruiters to favour job applicants with a higher social status. The available evidence on this subject is limited and comes from qualitative and experimental studies concerning recruiters' discriminatory judgements based on status-related cultural traits in upper-level and/or elite occupations in the United States (Rivera, 2012, 2015; Rivera and Tilcsik, 2016; Galos, 2024). In the European context, Jackson (2009) performed a field experiment in professional and managerial job positions in the United Kingdom and found that combinations of candidates' high social status signals had a positive effect on employers' callback rates.

#### Additive or interactive effects?

So far, we have discussed evidence on the main effects of gender, parenthood, and signalled social status on labour market outcomes. But what are the employment chances for individuals with different combinations of these characteristics? Do the (dis)advantages associated with one characteristic *add* to those associated with another, or are they in an *interactive* relationship, such that the effect of one characteristic systematically differs across values of another personal attribute?

In discussing these intersectional dynamics, we build upon the terminology and theoretical reflections at the foundations of the literature on stratification (Merton, 1968; Bernardi, 2014). According to this strand of research, two different-though not necessarily mutually exclusive (see, e.g. Erola and Kilpi-Jakonen, 2017)-situations can emerge from the interaction of two or more personal traits. Given a source of advantage or disadvantage (e.g. social status), which, in an additive manner, would exert the same effect among advantaged and disadvantaged social groups (e.g. men and women, respectively), we can speak of a *multi*plicative effect or accumulation of (dis)advantages (see DiPrete and Eirich, 2006) if this factor results in greater advantages for the advantaged and greater disadvantages for the disadvantaged group, thus widening the gap between them. Conversely, if this potential source of advantage leads to greater gains for the disadvantaged group, thus narrowing the gap between the advantaged and disadvantaged, it is possible to speak of a *compensatory* effect.

The literature adopting an intersectional perspective to the study of social inequalities tends to focus on personal characteristics such as gender, race, or ethnicity (e.g. Browne and Misra, 2003) and is largely based on the US context (for an exception in the European setting, see Di Stasio and Larsen, 2020). Research on whether and how gender, parenthood, and social status intersect to determine labour market inequalities in general and hiring discrimination in particular is still limited, and the few existing studies have produced conflicting results. Against this background, our contribution is to theoretically consider and empirically test whether an interactive relationship between gender and parenthood, and then gender, parenthood, and social status, can be expected. We begin by examining the multiplicative relationship between gender and parenthood, two personal characteristics that are often considered together in studies of labour market discrimination, as parenthood is generally expected to amplify gender effects in this context. We proceed by laving the theoretical foundations for the inclusion of social status to the interaction between gender and parenthood and the test of whether it has a compensatory effect.

# The multiplicative relationship of gender and parenthood

Why should gender and parenthood have an interactive rather than additive relationship? Status characteristics theory (Ridgeway, 2011) highlights the salience of stereotypes associated with specific individual characteristics. For instance, both being a woman and having children are characteristics generally associated with empathetic and caring traits and, thus, communal capacities (Ridgeway and Correll, 2004; Benard and Correll, 2010; Strinić, Carlsson and Agerström, 2021). At the same time, being female and having children are stereotypically associated with low agentic capacities and competence, which are crucial in the work environment. Given that the status characteristics of gender and parental status are linked to similar stereotypes, they may be in a relationship of 'amplified congruence' with one another (Pedulla, 2018), whereby having children amplifies the negative consequences of being a woman in the recruitment setting.

A similar prediction can be made on the basis of statistical discrimination theory (Phelps, 1972; Arrow, 1973). According to this perspective, the interaction between gender and parental status is essential for understanding labour market inequalities between men and women. Due to the persistent gendered division of housework and childcare, women, especially mothers, experience more frequent career interruptions and higher absenteeism than men. Mothers thus represent the category of workers with the most uncertain returns in terms of human capital accumulation, work commitment, and job performance. Therefore, all else being equal, recruiters are more likely to discriminate against mothers in hiring than against childless women and fathers.

These mechanisms should explain why parenthood is generally found to have a detrimental effect on labour market outcomes, which is particularly strong for women (González, Cortina and Rodríguez, 2019; Hipp, 2020), thereby creating a situation of cumulative disadvantage for mothers. Nevertheless, the evidence remains mixed (Benard and Correll, 2010; Bygren, Erlandsson and Gähler, 2017), which motivates an explicit examination of the consequences of the intersection between gender and parenthood in the hiring setting.

In line with the idea of a relationship of cumulative disadvantage between the characteristics of gender and parental status (each amplifying the effect of the other) and consistent with statistical discrimination theory, we expect a statistically significant interaction between gender and parental status, as outlined in our first intersectional hypothesis:

H1: Parenthood is more detrimental to women's chances of callback and hiring than to men's.

# Gender, parenthood, and social status: a tale of compensatory advantage?

While the interaction between gender and parental status has often been the subject of sociological research, albeit with mixed results, less attention has been paid to what happens when social status is also taken into account. Adopting the compensatory advantage framework (Bernardi, 2014), high social status may mitigate the adverse effects of being female, which is expected to be amplified by motherhood status, on recruiters' discrimination and the applicant's hiring chances since individuals from more privileged backgrounds are generally less adversely affected by disadvantageous traits, conditions, and events (Erola and Kilpi-Jakonen, 2017).

The compensatory effect exerted by social status can be explained by gender-specific meanings of status. Women tend to participate in more high-status cultural activities than men (Bihagen and Katz-Gerro, 2000) and, consequently, are more often stereotypically associated with highbrow culture (Christin, 2012), which would support a stronger positive effect of high-status signals for women. Another explanation relates to the potentially less detrimental effect that having a child may have on the career of women from more advantaged backgrounds, as opposed to women from disadvantaged backgrounds. Previous research has highlighted the existence of a Matthew effect in the use of childcare services, whereby children from more advantaged families (as well as their mothers) tend to benefit more from such services (Pavolini and Van Lancker, 2020). Higher-educated mothers have also been shown to be better able to mobilise economic resources to ensure continued attachment to the labour market (Ruppanner et al., 2021). Thus, when assessing

the employability of applicants, recruiters might expect mothers signalling higher social status to have better means of balancing family and work responsibilities than mothers signalling lower social status.

In line with these perspectives, Thomas (2018) observed the presence of positive discrimination towards women (but not towards men) who signal their belonging to a higher social status when applying for middle-income jobs in the United States. Accordingly, our first hypothesis on the intersectional impact of gender, parenthood, and social status on hiring chances states that:

H2a: When applying for a job vacancy, mothers signalling a higher social status are less likely to suffer from recruiters' discrimination than mothers signalling a lower social status.

In contrast with this expectation, there are reasons to believe that displaying high social status does not provide any compensatory advantages to women, especially mothers. Gender inequalities in the division of unpaid work between couples cut across class divisions and appear particularly pronounced for individuals with a higher social standing (Yavorsky et al., 2023). This translates into high-status women being more strongly associated (in terms of actual care burdens and societal perceptions) with the domestic and family sphere than low-status women. Thus, markers of high status might signal lower work orientation and commitment for women, especially for mothers (Rivera and Tilcsik, 2016; Gioachin and Zamberlan, 2024), thereby maintaining or even reinforcing the extent of recruiters' discrimination against them.

Additionally, the perception of greater work competence and reliability associated with high social status may violate the stereotype of mothers being caring and empathetic. Following status characteristics theory, violating stereotypes related to gender and parenthood may result in a penalty against social groups with 'dissonant' personal traits, as could be the case for women—especially mothers—with a high social status in the job market.

Existing evidence in the US supports this view. For example, Rivera (2015) and Rivera and Tilcsik (2016) have documented a lack of advantages for women signalling upper social status when applying to professional firms in the United States. In contrast to the previous hypothesis, we formulated the following hypothesis regarding the absence of a compensatory effect:

H2b: When applying for a job vacancy, mothers signalling a higher social status are equally as likely to suffer from recruiters' discrimination than mothers signalling a lower social status.

#### Occupational heterogeneity

Existing research has highlighted the crucial role of occupational characteristics in reinforcing or buffering employer and recruiter discrimination. Role congruity theory (Eagly and Karau, 2002; Diekman and Goodfriend, 2006) postulates that recruiters are particularly attentive to the potential 'match' between candidate characteristics and the features of the occupational position, favouring applicants who fit the job best.

According to this perspective, the predominant gender in an occupation is a salient characteristic when evaluating candidates. Gender stereotypes prescribe normative roles for men and women, which include occupations considered suitable for individuals of a given gender (Fiske, Cuddy and Glick, 2007; Cuddy, Fiske and Glick, 2008). Therefore, recruiters tend to favour the gender of job applicants who stereotypically fit the job best. This perspective has been empirically supported in several experimental studies (and corroborated by the meta-reanalysis of Galos and Coppock, 2023).

Extending the concept of role congruity to the domain of social status, cultural, and social network traits 'fitting' a given occupational culture likely represent an advantage in the hiring process. This is especially true in upper-level occupations, which feature formal and informal dynamics of social closure and in-group favouritism (Friedman and Laurison, 2020).

# The context: social inequalities in the United Kingdom

Although a cross-sectional, single-country study does not enable the identification of causal macro-micro relationships, contextualising the observed levels and mechanisms of discrimination can contribute to our understanding of the conditions under which discriminatory preferences and behaviours are more likely to emerge.

The United Kingdom features a liberal economy with a residualistic welfare state (Esping-Andersen, 1990) in which individuals and families primarily rely on services provided by the market to handle their social and care needs. This market-based arrangement widens disparities related to labour market participation, performance, and ascribed and achieved social standing. In particular, social class is a significant determinant of individuals' labour market outcomes and life chances in British society (Goldthorpe and McKnight, 2006). Existing research has also highlighted a strong degree of social immobility, with relatively low instances of exchange between social groups at the top and bottom of the class structure (Bukodi et al., 2015). With an institutional setting that reproduces social divisions between individuals and families across generations, the

United Kingdom represents a relevant context to study the mechanisms of social inequality and discrimination based on social status markers. Most importantly for the present study, previous research has shown that social class and monetary resources strongly predict leisure behaviour and lifestyle in the country (Katz-Gerro and Sullivan, 2010; Roberts, 2010).

Gender inequalities in the UK's labour market appear to be more moderate than in other European countries with conservative welfare states (Esping-Andersen, 1990). Women show comparatively higher employment rates, which may have partially eroded traditional gender stereotypes. Moreover, the predominant types of skills required in the British labour market are general skills which, by being more portable across employers and firms, do not generate additional disadvantages for mothers (in particular, in the form of employer statistical discrimination, see Estévez-Abe, 2005), who generally have higher turnover rates (mostly related to childbirth and care obligations) and are perceived as having more uncertain work productivity. However, the persistence of gendered roles in the private sphere, exemplified by the UK modified male breadwinner work-family type (Altintas and Sullivan, 2017), might counteract the positive consequences of a more widespread female labour force participation and lower statistical discrimination against women and mothers.

#### Experimental setting

To empirically test our hypotheses, we designed and pre-registered an online factorial survey experiment targeting individuals with recruiting experience residing in the United Kingdom who were asked to evaluate fictitious job candidates for one (out of four) job vacancies. To enhance the study's external validity, we relied on a large sample of individuals with recruiting experience, statistically accounted for their actual experience, and addressed the (mis)match between the experimental job vacancies and the occupational sector in which respondents had recruiting experience.

#### Experimental and analytic sample

We sent vignettes presenting the attributes of fictitious job applicants to UK-based respondents through Prolific, an online platform designed for survey recruitment that has the advantage of providing a large number of participants, especially in the British context, which can be selected by researchers based on available pre-screening information. In this study, the eligibility criteria were that respondents were not students when the survey was administered and had professional hiring experience. To ensure that respondents had actual recruiting experience and to obtain relevant details, we also included four filter questions at the beginning of the survey (following Mari and Luijkx, 2020), asking respondents whether they had (either in their current or in a previous job) experience in different tasks. Specifically, we asked: (i) Have you ever taken part in any phase of the recruitment process, such as screening CVs or job interviews?; (ii) Have you ever been responsible for hiring or firing employees?; (iii) Have you ever been entitled to set or influence the rate of pay received by employees?; and (iv) Have you ever had an influence or decided on the promotion of other employees? The answer options were 'Yes, in my current job', 'Yes, in one of my previous jobs', and 'No'. Respondents could choose more than one answer per question so that we could determine whether they had recruiting experience both in their current and past jobs. Respondents who answered that they did not have experience in any of the four areas were excluded from the survey. Additionally, we included an attention check that, if failed, led to immediate exclusion from the survey (further details on the experiment's design are presented in Section B of the Supplementary Material).

A total of 2,948 recruiters passed the filter questions and attention check, thereby fully completing the survey. However, we eliminated respondents (N = 53)whose response times were either too fast (survey duration <1 per cent = 2.83 minutes) or too slow (duration >99 per cent = 20.02 minutes). Among the remaining respondents, we excluded those (N = 324) showing constant answer behaviour, namely, those who selected the same value for both dependent variables for all vignettes.<sup>2</sup> Finally, we excluded respondents (N = 9) who provided answers of dubious quality, namely, those who gave a low callback score (less than 4) but a high hiring score (more than 7) to at least one vignette, and respondents (N = 61) with missing values on variables of interest. The final analytic sample comprised 2,501 recruiters who evaluated eight vignettes each, leading to 20,008 answers. Supplementary Table S1 presents the respondents' sociodemographic and occupational characteristics, while Supplementary Table S2 compares these characteristics with those of recruiters from different United Kingdom representative samples. Notably, the characteristics of our sample of respondents were very similar to those of managers, recruiters, and supervisors in representative samples of the UK population.

#### Fictitious job vacancies

Recruiters were asked to evaluate the profiles of fictitious job applicants for one (randomly selected) of four job vacancies: human resource manager, architect, sales assistant, and carpenter. The four occupations were chosen because they cover the possible combinations of gender composition (male- or female-dominated) and

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Treatment condition	Levels	Operationalisation			
(dimension)					
Gender	Male	First name: Edward, Charles, Gary, Kevin			
	Female	First name: Camilla, Lucinda, Stacey, Donna			
Parental status	Childless	Childless			
	With children	Has two children; the youngest is three years old			
Social status (1)	Elite background	First name and surname: Edward/Charles/Camilla/ Lucinda + Acheson-Gray/Bevans-Brown/Bartle-Jones/Ashford-Smith			
	Non-elite background	First name and surname: Gary/Kevin/Stacey/Donna + Roberts/Brown/ Wilson/Taylor			
Social status (2)	Highbrow hobbies	Plays the violin, practices tennis, goes sailing, is a member of a theatre company			
	Non-highbrow hobbies	Hip-hop dance, plays snooker, listens to rap music, plays videogames on an E-Sports team			

occupational level (high or medium/low), allowing us to explore potential heterogeneity in our main results along these lines. Further details about the occupations selected are included in Section B of the Supplementary Materials. Rather than allowing occupation to vary within respondents, as is the case with the treatments of main interest, each recruiter was assigned to only one job vacancy in order to make the evaluation task simpler. As a result, the occupational treatment varies between, but not within, respondents. With the aim of having a comparable number of responses for each occupation, we ensured that each job vacancy appeared a balanced number of times (although there are small differences between occupations due to data cleaning). Before presenting the vignettes to respondents, a concise description of the tasks required for the occupation (based on real-life job vacancies advertised on online platforms) was provided.

#### Treatments

To provide a task as realistic as possible, respondents were asked to imagine they worked in a company in which a job vacancy for a specific occupation was open, and they were responsible for evaluating the profiles of job candidates that were already screened by an employment agency and synthesised in summary tables. We informed respondents that all job candidates for a given vacancy were suitable in terms of required education and work experience. This was crucial because of our specific interest in testing the effects of job candidates' probabilistic signals (Spence, 1973; Fossati, Wilson and Bonoli, 2020) on recruiters' hiring intentions; therefore, it was important to maintain characteristics (such as education and previous work experience) that were directly linked to work productivity fixed. As for the tabular format, it has been proven to perform as well as, or even better than, the text format (Auspurg and Hinz, 2014).

Vignettes contained information on candidates' gender, parental status, social status, age, citizenship, education, and unemployment experience. The signals of theoretical interest that varied in the vignettes concerned the fictitious job applicants' gender, parental status, and social status, whose operationalisation is presented in Table 1. Job candidates' gender (male or female) was signalled by their first name. To ensure that names unambiguously signalled a given gender to respondents, we checked the most common names for boys and girls from the Office of National Statistics (2022). It should be noted that the final first name choices were based on their gender and status (see the subsection related to social status).

Parental status was signalled by stating in the vignette that the job applicant either had no children or two children, the youngest being three years old. By doing so, we could differentiate between job applicants with and without family responsibilities.

Different theoretical perspectives on social class and status were reflected in multiple conceptualisations and measurements in the existing literature (Weeden and Grusky, 2005). Ensuring that respondents observed plausible information and clear signals of individuals' social standing was crucial for the present study. Providing information about job applicants' parental occupation or relying on classifications and rankings (Erikson and Goldthorpe, 1992) would have rendered the setting unrealistic. Moreover, while some previous studies (Jackson, 2009) employed the prestige of the university attended as a signal of social status, Rivera and Tilcsik (2016) noted that differences in educational prestige may also lead to variations in perceived human capital, which confounds the trigger of discriminatory

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intentions and behaviours. In our study, we signalled social status by drawing upon everyday social and cultural constructions of status and considered two different status signals separately, as they might exert various effects on callback and hiring intentions.

The first social status marker inserted in the vignettes was the candidate's first name and surname. Names operate as signals for various background characteristics in a variety of different cultural contexts (Broad, 1996). Because they are chosen by (first names) or inherited from (surnames) one's parents, names can be clear and unambiguous signals of one's background of origin. In the British context, double-barrelled surnames are usually equated with elite social backgrounds. We relied on previous research conducted in the United Kingdom (particularly Jackson, 2009) to retrieve first names and surnames signalling an elite or non-elite social background.

The second way we signalled social status was through the candidates' hobbies. As they are chosen and afforded by the individual, hobbies and cultural activities are more likely to reflect not only background socialisation but also the class of the destination. We chose highbrow and non-highbrow hobbies based on existing research using similar validated social status markers (Rivera and Tilcsik, 2016; Thomas, 2018; Fossati, Wilson and Bonoli, 2020) and British reports on social background differences in extracurricular activities (Donnelly et al., 2019).

To create a more realistic scenario and avoid social desirability bias, we included more dimensions than those of primary interest in the vignettes. The citizenship of the job applicant was included as a fixed dimension, with all candidates having British citizenship. The age of the job candidate was also included and varied randomly from 33 to 35 years old. For the aim of our research, it was crucial that candidates did not substantially differ with respect to their age as it may have signalled differences in potential fertility, possibly leading recruiters to discriminate against younger women (Zamberlan and Barbieri, 2023) or older applicants (Tinsley, 2012).

We also included information on the educational level and field of the job applicants. Educational information was consistent with each job vacancy; therefore, there was no variation in the educational level or field within the same job. Fictitious job applicants for the low-skilled positions of sales assistant and carpenter were stated to have received their General Certificate of Secondary Education (GCSE), while candidates for the architect and human resource manager positions each had a master's degree in architecture and sociology, respectively.

Finally, we included extra information on time spent unemployed (two levels: whether the job applicant had been looking for a job for 3 or 12 months). Although we ensured orthogonality of the unemployment dimension with the other treatments, this is a theoretical domain which goes beyond the scope of the current contribution and it is therefore not exploited in the analyses (although included in all models). The validity of each treatment was tested beforehand with experts on experimental designs and the British context.

#### Design

Considering our explicit interest in the interactions between attributes, we favoured an experimental design that ensured complete control over the orthogonality of the dimensions and levels and through which main and interaction effects could be unambiguously estimated.

Each respondent was presented with job applicants for only one (randomly selected) job vacancy. Within each of the four jobs considered, we experimentally varied five dimensions with two levels each. Therefore, the total universe of vignettes within each job was equal to 32. A vignette's universe of limited size had the advantage of enabling coverage (in terms of respondents' answers) of the entire universe with no need to fraction it. We partitioned the total vignette population into four decks of eight vignettes each, which appeared to respondents in random order. This represented an appropriate number of vignettes for avoiding fatigue effects (Auspurg and Hinz, 2014). To decide which vignettes to assign to each deck, we followed a confounded factorial design (Atzmüller and Steiner, 2010) and carefully planned the confounding structure. In practice, the eight vignettes in each deck were selected so that all dimension levels were present the same number of times and all possible combinations (i.e. twoway interactions) were equally present in the deck. This structure also ensured that most three-way interactions were covered the same number of times in each deck.<sup>3</sup>

#### Dependent variables

For each fictitious job candidate, respondents were asked to indicate on a scale from 0 to 10 (where 0 indicated 'not likely at all' and 10 'very likely') how likely they would be to (1) invite the candidate for a faceto-face interview (callback) and (2) hire the candidate (hiring). Recruiters were given little information about the work-related attributes of job applicants, a setting that we expected would lead to asking for more information through a callback. Since the intention to hire represented a stronger statement, we expected recruiters to rely more firmly on the job candidates' characteristics in this case. Supplementary Figure S1 shows the distribution of responses to the two questions and confirms the expectation that respondents tended to give higher values to callback more often than to hiring.

#### Methods

We accounted for the nesting of answers given to the different vignettes within respondents by performing random-intercept multilevel linear models (vignettes clustered into respondents). Standard errors were double-clustered at the respondent and occupation levels for models with occupations pooled and clustered at the respondent level for models separated by occupation.

We relied on results from multilevel regressions including (i) all vignette dimensions (when the interest concerned main effects) and (ii) the two- or threeway interaction of interests (when the aim was to test the intersection between treatments). We included a series of variables to increase the precision of the estimates, namely, the type of device used, the date and time of survey completion, its duration, and the order of appearance of each vignette. We controlled for respondents' hiring experience by including four variables containing information retrieved from the filter questions regarding which type of hiring experience recruiters had, and we inserted a variable capturing whether the job being randomly assigned to the respondent matched the sector in which they had recruiting experience. We also included respondents' gender, age, educational level, number of children, occupation, and parental social class. Finally, although randomly varied and with a narrow range, we included the age of the fictitious job applicants as an extra precaution and, although orthogonal to the other treatments, the duration of unemployment.

The dependent variables were standardised to ensure a more straightforward interpretation of the coefficients, which are presented in the form of average marginal effects (AME). For the three-way interaction, we also presented predicted values with the dependent variables in their original 0–10 scale.

### Findings

#### Main effects

Figure 1 presents the AMEs of all the treatments of interest on callback and hiring intentions overall and by occupation (i.e. job vacancy). The effect sizes were slightly more prominent in the case of hiring than recruiting intentions, as expected.

Gender (i.e. being a woman) had no statistically significant effect on the probability of receiving a callback and a substantially small (-0.01 standard deviations) negative effect on the probability of recruiters' positive hiring intentions. Interestingly, this overall negligible effect appears to have been driven by the two upperlevel occupations of human resource manager and architect. However, being of female gender did have a positive, statistically significant effect in the case of sales assistant, a low-level, female-dominated occupation. Being a woman affected the probability of being positively evaluated by British recruiters by around 0.05 standard deviations. The opposite was observed in the case of carpenter, a low-level but strongly male-dominated occupation. In this case, being a woman had a negative effect of around -0.10 standard deviations. In sum, a significant effect of gender was observed only in low-level, highly gendered occupations, whereas no gender discrimination was detected for the higher-level occupations. A similar result was found in an audit study conducted by Yavorsky (2019), in which discrimination against female job applicants



Figure 1 Average marginal treatment effects, overall and by occupation. Standardised dependent variables. *Note*: Full regression results are presented in Supplementary Table S3



**Figure 2** Intersection between gender and parenthood. Average marginal treatment effects, overall and by occupation. Standardised dependent variables. *Note*: The estimates of penalties and the gender difference between penalties in the left-hand graph refer to the results for hiring. Regression results for the combinations of gender and parenthood for the overall sample are presented in Supplementary Table S4

in male-dominated and masculinised jobs was found only in working-class occupations.

Being a parent of small children emerged as a relevant driver of discrimination for all job vacancies, with a negative effect of -0.12 standard deviations on hiring intentions and -0.09 standard deviations on callback intentions. Recruiters' discriminatory intentions were particularly strong in low-level job vacancies, with AMEs ranging between -0.18 and -0.14 for the sales assistant position and between -0.13 and -0.11 for the carpenter. Such a strong effect of parenthood status may be because having children entails a leave period and higher absenteeism due to childcare duties. With a lack of precise signals of work commitment and productivity of job applicants, having children (or not) may, therefore, become a proxy of work experience and gain strong relevance compared to the other treatments.

Finally, noteworthy differences were observed between the two social status markers. Candidates' first name and surname did not affect recruiters' callback or hiring intentions for all job vacancies. Conversely, a clear positive effect of having highbrow hobbies was consistently observed. The effect of signalling a high social status through highbrow hobbies was equal to around 0.05 standard deviations for callback and 0.07 standard deviations for hiring intentions.

# The cumulative disadvantage of being a woman and having children

Having examined the main effects of the treatments of interest, we now turn to their interactions. Our first

multiplicative hypothesis concerned the interaction between gender and parental status, the results of which are presented in Figure 2. In order to present the results in a straightforward manner and provide a complete overview of the penalties of interest, we present the AMEs for fathers, childless women, and mothers, taking childless men as the reference category (as this should theoretically be the preferred category in the recruitment setting). In the overall graph, we have also provided information on the size of the penalty for fathers in relation to childless men and mothers in relation to childless women (the penalty for fathers and the penalty for mothers, respectively), as well as the gender difference between the fatherhood and motherhood penalties. For each penalty or gender difference, we also reported the z-statistic and the P-value, which indicate whether it was significantly different from zero at conventional levels.

Following the idea of an amplified congruence between the status characteristics of gender and parental status and the prediction derived from statistical discrimination theory that mothers are the least preferred group of workers in the hiring process, we hypothesised that having children would be more detrimental to women's chances of callback and hiring than to men's (H1). In other words, we expected a cumulative disadvantage between being a woman and having children. This expectation found empirical support. First, both being a woman and a man with children exerted a statistically significant negative effect. The penalty in hiring for mothers was around -0.15 standard deviations, while that for fathers was around -0.09 standard deviations. Second, the gender difference between the two penalties was statistically significant. The negative effect of being a mother appears to have been particularly pronounced in the carpenter occupation, the low-level, male-dominated occupation. Instead, childless women appear to have been slightly favoured compared to childless men, a finding driven by the assessment of candidates for the vacancy of sales assistant, a low-level female-dominated occupation. These findings confirm the idea that gender discrimination may be better understood by looking at the gender composition of occupations (Galos and Coppock, 2023), as women are particularly disadvantaged in male-dominated sectors, but not necessarily in female-dominated sectors.

#### The compensatory effect of social status

Finally, Table 2 presents the results of the interaction between signals of gender, parenthood, and social status expressed through names and hobbies. Interestingly, looking at the interaction coefficients, it can be seen that the penalty for mothers (but not for fathers) was significantly reduced for those with a name and surname that signalled high social status. Specifically, the penalty was reduced by about 42 per cent (100 \* (0.05/-0.12)) for callback chances and about 25 per cent (100 \* (0.04/-0.16)) for hiring chances. This finding is particularly noteworthy because although names and surnames did not yield a substantive and statistically significant main effect as markers of social status, they exerted a partial compensation effect on the motherhood penalty, which partially supports H2a.

In contrast, highbrow hobbies as a high-status marker yielded no statistically significant interaction effect with gender and parenthood, thus leading us to reject H2a in the case of hobbies and support H2b instead. We also observed that fathers seemed to suffer a slightly worse penalty in terms of hiring chances if they displayed highbrow as opposed to non-highbrow hobbies, as indicated by the slightly statistically significant negative interaction coefficient.

Finally, Figure 3 complements the interpretation of the results presented above by showing the predicted values for the different combinations of gender, parenthood, and social status signals. The first result that stands out is the systematically higher ratings in the case of callback as opposed to hiring. This observation, once again, suggests that in the context of limited information about work-related attributes of applicants, recruiters are particularly inclined to ask for more information through a callback while being less generous when it comes to their stated intention to hire. Looking at the interaction of interest, that is, the difference between candidates with non-elite and elite names in the distance between predicted callback/ hiring values of childless respondents and parents, this difference was visibly reduced for women in the case of elite names/surnames as markers of high social status. In other words, the labour market chances of mothers are not so different from those of childless women when women signalling high social status are considered.

#### Summary and discussion

Understanding the multiple dimensions of discrimination in the labour market is a desirable goal from many points of view. Individuals belong and signal their belonging to multiple social groups, and the role of certain characteristics may change when viewed in combination with others. In light of this context, an effective inquiry into labour market discrimination requires theoretical perspectives and empirical strategies attentive to the intersection of different personal attributes. Our aim with this study was to provide an original contribution to the literature investigating discrimination based on gender, parenthood, and social status by placing particular emphasis on the intersection between these personal attributes. To do so, we designed an online factorial survey experiment in which we manipulated the gender, parenthood, and social status of fictitious job applicants and administered it to people with recruiting experience in the United Kingdom.

We found a substantial and statistically significant incidence of recruiters' discriminatory intentions against mothers, thus corroborating the hypothesis of a cumulative disadvantage between being a woman and having children. This finding follows the notion of an amplified congruence (Pedulla, 2018) between the status characteristics of gender and parental status and supports the prediction derived from statistical discrimination theory that mothers are the least preferred group of workers in the hiring process (Phelps, 1972; Arrow, 1973). This observation is also consistent with previous research in other national contexts (Oesch, Lipps and McDonald, 2017; González, Cortina and Rodríguez, 2019). Moreover, signalling a higher social standing (through lifestyle markers, such as one's hobbies) led to positive discrimination in all job vacancies, adding to existing evidence from the US context (Rivera, 2012, 2015; Galos, 2024).

Most importantly, our findings shed light on the interactive effect of gender, parenthood, and social status, a topic that has been largely neglected in existing studies. Our empirical results allowed us to partially corroborate the compensation hypothesis for the name/surname marker and the additive hypothesis for the hobby marker. Regarding the partial compensatory effect of elite names and surnames, this status marker reduced the motherhood penalty in hiring by about 42 
 Table 2
 Intersection between gender, parenthood, and social status. Average marginal treatment effects. Standardised dependent variables

	Names/Surnar	nes	Hobbies	
	Callback AME (std. err.)	Hiring AME (std. err.)	Callback AME (std. err.)	Hiring AME (std. err.)
Gender/parenthood (base: childless men)				
Fathers	-0.06***	-0.08***	-0.06***	-0.07***
	(0.02)	(0.02)	(0.01)	(0.01)
Childless women	0.03*	0.04**	0.01	0.01
	(0.02)	(0.02)	(0.02)	(0.02)
Mothers	-0.12***	-0.16***	-0.10***	-0.14***
	(0.01)	(0.01)	(0.02)	(0.02)
Social status—name (base: non-elite name)		× ,	х У	, , , , , , , , , , , , , , , , , , ,
Elite name	-0.01	0.01		
	(0.02)	(0.02)		
Fathers # Elite name	-0.01	-0.02		
	(0.03)	(0.03)		
Childless women # Elite name	-0.02	-0.05		
	(0.03)	(0.03)		
Mothers # Elite name	0.05***	0.04**		
	(0.01)	(0.02)		
Social status—hobby (base: non-highbrow hobby)	к <i>У</i>	× ,		
Highbrow hobby			0.05***	0.07***
			(0.02)	(0.02)
Fathers # Highbrow hobby			-0.01	-0.03*
			(0.01)	(0.02)
Childless women # Highbrow hobby			0.02	0.02
			(0.03)	(0.03)
Mothers # Highbrow hobby			-0.00	0.01
			(0.03)	(0.03)
SD (respondent level)	0.81	0.78	0.81	0.78
	(0.01)	(0.01)	(0.01)	(0.01)
SD (vignette level)	0.51	0.56	0.51	0.56
	(0.01)	(0.01)	(0.01)	(0.01)
Intercept	0.69	-0.16	0.72	-0.15
	(0.70)	(0.27)	(0.70)	(0.27)

P < 0.01; P < 0.05; P < 0.1.

*Note*: *N* = 20,008 (2,501 respondents).

per cent in the case of callbacks and 25 per cent in the case of hiring, thus being of substantial relevance. The finding of a heterogeneous presence of the compensatory effect of social status depending on how it was signalled is particularly noteworthy because the influence of social status, as indicated by names and surnames, turned out to partially compensate for the negative effects of gender and parenthood while the main effect

was null. This finding underlines the importance of considering the intersection of various dimensions of discrimination in order to fully understand how different systems of inequality and discrimination affect individuals' employment and life chances.

Interestingly, this last result aligns with some (Thomas, 2018) but departs from other previous experimental evidence concerning discrimination



# **Names/Surnames**

**Figure 3** Intersection between gender, parenthood, and social status. Predicted values. *Note*: Results from random-intercept multilevel models with dependent variables in the original 0-10 scale. N = 20,008 (2,501 respondents)

among recruiters based on the intersection of gender and social status. In particular, Rivera and Tilcsik (2016) found high-status women to be more disadvantaged than high-status men when competing for elite jobs in the United States. However, our study differed from Rivera and Tilcsik's in many respects, including the context under investigation, the experimental design, and the markers of social status used. Beyond study-specific characteristics, these divergent results call for a more explicit investigation of whether and to what extent institutional contexts matter.

In our survey experiment, we chose four occupations that varied in their occupational level and gender composition, thus covering the matrix between these two relevant occupational characteristics. However, the high-level occupations of human resource manager and architect are more gender-neutral compared to the low- or medium-level occupations of sales assistant and carpenter, which are clearly more gendered. This partial overlap between occupational level and gender composition made it difficult to precisely test occupation-sensitive hypotheses. Furthermore, the selection of only a few specific occupations complicated the generalisation of our findings to different occupations. Although we provide novel exploratory evidence on occupational heterogeneity in hiring discrimination, future studies could explore this issue in more detail.

Another relevant domain that our experimental data did not allow us to test concerns the discrimination mechanisms at play. While we discussed statistical and taste-based discrimination, the lack of experimental manipulation of the amount of information about candidates' work productivity and the number of survey items explicitly investigating the perceived likeability and competence of each candidate made it impossible for us to unambiguously distinguish between these two discrimination mechanisms. The original contribution of our study lies in the novel evidence it provides for the interactive effects of different personal attributes, but future studies could further analyse the specific discriminatory mechanisms at play when examining additive versus interactive effects.

Finally, studies based on online platforms with a pool of self-selected candidates may raise concerns about the non-representativeness of the sample and, thus, the limited external validity of the findings. However, descriptive statistics reassured us that the recruiters participating in our online experiment resembled the population of interest (see Supplementary Table S2). If anything, our respondents were slightly better educated, which might lead us to underestimate the extent of discrimination in hiring intentions, thereby stressing the seriousness of recruiters' biases in their hiring preferences even more.

With this contribution, we have provided novel experimental evidence on the main and interactive effects of gender, parental status, and different signals of social status on recruiters' hiring intentions in the UK labour market. Hopefully, a growing body of research will shed additional light on what other dimensions of stratification are in an additive or interactive relationship, the contexts in which they operate, and the mechanisms at play.

### Notes

- 1. In accordance with prior research (Chan and Goldthorpe, 2007), in this contribution we use 'status' to connote cultural markers signaling an individual's positioning in the social hierarchy, instead of their occupational class.
- 2. As the comparison between Supplementary Figures S1 and S2 illustrates, the answers given by this group of respondents are not distributed differently from those given by respondents in the final analytic sample.
- The only combinations that remained confounded with the set effect (Kirk, 1995) were three-way interactions of no theoretical relevance between (i) sex, social status (hobby), and unemployment, and (ii) social status (name), social status (hobby), and parental status.

# **Supplementary Data**

Supplementary data are available at ESR online.

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## **Data availability**

The data underlying this article will be shared on reasonable request to the corresponding author.

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