Article:
Avgoustaki, A and Bessa, I orcid.org/0000-0003-2984-746X (2019) Examining the link between flexible working arrangement bundles and employee work effort. Human Resource Management, 58 (4). pp. 431-449. ISSN 0090-4848

https://doi.org/10.1002/hrm.21969

EXAMINING THE LINK BETWEEN FLEXIBLE WORKING ARRANGEMENT BUNDLES AND EMPLOYEE WORK EFFORT

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Acknowledgements
Understanding Society is an initiative funded by the Economic and Social Research Council and various Government Departments, with scientific leadership by the Institute for Social and Economic Research, University of Essex, and survey delivery by NatCen Social Research and Kantar Public. The research data are distributed by the UK Data Service UK Data Service. The authors would like to thank Hans Frankort and Kostas Kalogeropoulos for the constant support. We also thank Kerstin Alfes, Eleni Stavrou, Christina Ierodiakonou and Almudena Cañibano, for their contribution and suggestions, as well as the two anonymous referees for their invaluable feedback. This study was part of a research grant from the Spanish Ministry of Economics and Competitiveness (research grant ECO2012-33308).

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ABSTRACT

Empirical evidence regarding the link between flexible working arrangements (FWAs) and work effort is mixed, with literature showing that some practices are linked to more while others to less work effort. In this study, we argue that this discrepancy may be due to the existence of different types of FWA bundles with potentially distinct effects on work effort. Using *Understanding Society*, a British national survey, and building on theories related to social exchange, the study examines the link between *employee-centered* and *employer-centered* FWA bundles, and work effort. The study further tests whether these relationships differ depending on employees' family responsibilities. Based on a sample of 13,834 employees, results show that both employee- and employer-centered FWA bundles are negatively associated with work effort, and findings for the latter bundle are more pronounced. These negative associations are somewhat stronger for employees with fewer family responsibilities. We infer that employees appear to use employee-centered FWAs for their intended purpose, that is, to balance life and job demands, while they might perceive employer-centered FWAs as unfair, resulting in less work effort in an attempt to restore fairness.

Keywords: flexible working arrangements, social exchange theory, bundles, intensive work effort, extensive work effort

Introduction

Many organizations have turned their attention to flexible working arrangements (FWAs), such as flexitime, job sharing, and work from home (Kelly & Moen, 2007; Kossek & Lautsch, 2018). FWAs are commonly used as a tool to enable employee flexibility, with the objective to improve well-being, work–life balance, and firm performance (Anderson, Coffey & Byerly, 2002; de Menezes & Kelliher, 2011; Ortega, 2009; Schieman, Milkie & Glavin, 2009). Despite the proliferation of FWAs, however, evidence regarding how FWAs are associated with employee outcomes remains mixed. Some studies find that FWAs are associated with better well-being (Almer & Kaplan, 2002; Gajendran & Harrison, 2007; Glass & Finley, 2002) and higher productivity and performance (Baltes, Briggs, Huff, Wright & Neuman, 1999; Bloom, Liang, Roberts & Ying, 2015; Perry-Smith & Blum, 2000), yet others suggest that the link between FWAs and firm performance is at best absent (Bloom, Kretschmer & Van Reenen, 2011) and the link to employee outcomes possibly negative. For example, FWAs have been associated with low job quality (McGovern, Smeaton & Hill, 2004; Stavrou, 2005; Wilson, Brown & Creagan, 2008) and increased work effort (Kelliher & Anderson, 2010).

One employee outcome that has attracted considerable interest among scholars in the human resource management (HRM) and economics literature (Burchell & Fagan, 2004; Green, 2001; Kelliher & Anderson, 2010) is the effort employees expend at work, both in terms of work intensity and overtime. Work effort is important from the employee's point of view because it has implications for their well-being and career progression (Avgoustaki & Frankort, 2018). Perhaps as a consequence, work effort has become a prime focus of literature on the employee-level implications of FWAs. Indeed, empirical evidence regarding the link between FWAs and work effort has started to accumulate, yet here too evidence remains mixed regarding how FWAs

and work effort are related: Some studies show that FWAs are associated with more work effort (Bloom et al., 2015; Kelliher & Anderson, 2010), while others find the reverse (Avgoustaki, 2016; White, Hill, McGovern, Mills & Smeaton, 2003).

In the face of such equivocal evidence, we identify and aim to address two issues that have remained underexplored in literature on the implications of FWAs for employee work effort. First, prior research has tended to examine one or a small number of FWAs and their relation to work effort. However, firms commonly expose employees to multiple related FWAs (Bloom et al., 2011; Pas, Peters, Doorewaard, Eisinga & Lagro-Janssen, 2011; Piasna, 2018; Stavrou, 2005). Thus, focusing on only a subset of such practices might be problematic because employees likely respond to the bundle of combined FWAs rather than individual practices in a vacuum. This is important because bundles of practices can produce effects that are distinct from the individual practices comprising the bundle (Ichniowski, Shaw & Prennushi, 1997), a key point made by the strategic HRM (SHRM) literature (Delery, 1998; Huselid, 1995; MacDuffie, 1995). Bundle effects can derive from the fact that human resource practices may strengthen or weaken one another, and so understanding the combined aggregate effects of such relations requires a focus on bundles of practices.

Second, although one might conceive of FWAs as comprising a single bundle, such an approach does not consider the possible existence of different types of FWAs. Prior research has categorized FWAs broadly into two types: *employee-centered FWAs* and *employer-centered FWAs* (Alis, Karsten & Leopold, 2006; Chung & Tijdens, 2013; Stavrou, 2005). *Employee-centered FWAs* are those practices that primarily serve employees' interests, whereas *employer-centered FWA*s are of greater primary interest to employers. As such, these two types of FWA likely fall into two separate bundles of internally consistent practices and, because in the first

instance they serve the interests of either employees or employers, the two FWA types might have distinct effects on employee work effort. A focus on two FWA bundles seems important, therefore, because it allows the different bundles to have their own implications for work effort—implications which may be distinct.

Consequently, in this study we ask the following question: *How are employee-centered and employer-centered FWA bundles associated with employee work effort?* Building on the SHRM literature, we develop the idea that FWAs fall into separate, composite bundles with potentially distinct effects on work effort. To develop our hypotheses, we draw on theories related to social exchange, which for both FWA bundles provide competing predictions regarding how they are linked to employee work effort. One key principle underpinning social exchange theories is the act of reciprocation (Akerlof, 1982), in which employees may perceive employee-centered FWAs as a gift, and this is likely to result in additional work effort in exchange. Yet, if employees feel entitled to these practices or regard them as a norm, then such practices might no longer be perceived as a gift in need of reciprocation (de Menezes & Kelliher, 2017). In that case, employees might use employee-centered FWAs for their intended purpose, that is, to facilitate their needs and balance life and job demands, resulting instead in less work effort. FWAs can also be employer-centered when introduced as cost-containment strategies in order to reduce labor cost while enhancing efficiency, which is likely to result in increased work effort. Yet, employees might express doubt or perceive unfairness (Spector & Fox, 2002) regarding the provision of employer-centered FWAs. As such they might not reciprocate but instead respond with counterproductive work behavior, such as reduced work effort.

We test these predictions using wave 2 (2010–2012) of *Understanding Society*, a national survey conducted in the UK. This data set contains detailed information about FWAs at the

individual level and allows us to control for a broad set of individual-level and firm-level characteristics. These data also allow us to examine whether the family responsibilities of employees, as proxied by gender, marital status, and the number of children, moderate the role of FWAs in shaping work effort.

Our study contributes to the SHRM literature by elevating the analysis of the implications of FWAs from the individual practice to the level of two different types of FWA bundles. The basic distinction we propose between bundles of employee- and employer-centered FWAs, and how these relate to work effort, has the potential to advance an understanding of the implications of FWA bundles for work effort. Conceptually, the basic distinction between employee-centered and employer-centered FWAs allows us to elucidate the different mechanisms through which either bundle of FWAs can affect work effort. Empirically, the distinction allows the two different bundles to have effects of their own. We also contribute to the literature by adopting an individual-level perspective, which addresses the need to consider outcomes more proximate to the practices of interest, that is, employee work effort rather than firm performance. Finally, in light of prior research on the role of family responsibilities as potential moderators (e.g., Kelly et al., 2008; Konrad & Mangel, 2000), we assess the differences in these relationships according to the idiosyncratic family responsibilities of employees.

Conceptual background

FWA types

FWAs are working practices that allow more control with regard to *where*, *when* and *how* work is done (Chung & van der Horst, 2018; de Menezes & Kelliher, 2017; Kossek & Lautsch, 2018), such as flexitime, compressed hours, and work from home. Building on this definition, Kossek

and Lautsch (2018) further add the dimensions of *how much* work is done, referring to practices such as part-time, term-time, and job sharing (Chung & van der Horst, 2018), and *for how long* work is done, referring to practices such as parental or sick leave.

Prior research has identified different criteria according to which it theoretically categorizes the different dimensions of FWAs. De Menezes and Kelliher (2017) distinguish between formal and informal FWAs, where FWAs are offered either based on formal organizational policies or negotiated or discussed informally between the employee and the employer. Fagan (2004) uses predictability as another criterion, based on which she identifies three categories of FWAs. First, *unstructured* FWAs are those where employees have limited control, and therefore less predictability, over their schedule and the numbers of hours worked. Second, *autonomous* FWAs are those where employees have some control, and therefore more predictability, regarding their working time. Finally, *structured* FWAs are those which include non-standard yet more predictable hours, giving employees more control over their working hours when compared to unstructured FWAs. The latter type implies a coexistence of mutual benefits for employees and employers, for example part-time work.

A criterion for the categorization of FWAs that stands out in extant literature, and is of particular interest to the current paper, is to *whom* FWAs might be of primary interest. Based on this criterion, the literature divides FWAs into employee-centered and employer-centered practices (Chung & Tijdens, 2013; Hill et al., 2008; Piasna, 2018). *Employee-centered FWAs* are those practices that primarily serve employees' interests, giving them some control and allowing them to balance work and family or other non-work responsibilities. Such practices include but are not limited to telework, home-based work, and flexitime. Alternatively, *employer-centered FWA*s are of greater primary interest to employers. The practices aim to allow firms to achieve

greater labor flexibility in order to respond to business demands, for example those related to cost-cutting/efficiency motives, fluctuations in demand or seasonality, and over- or under-staffing. Such practices include job sharing, weekend work, and compressed work (Chung & Tijdens, 2013; Kossek & Ruderman, 2012; Stavrou & Kilaniotis, 2010).

Despite some differences, most categorizations identified in prior research refer to or overlap with the basic distinction between flexibility primarily serving employee needs versus flexibility primarily serving employer needs (Chung & Tijdens, 2013; Pas et al., 2011). For example, the categorization of autonomous versus unstructured FWAs (Fagan, 2004) is similar to the employee- versus employer-centered categorization. Although the distinction between employee- and employer-centered FWAs reflects that inevitably different FWAs are initially of greater interest to employers or employees, it is of course possible that they do generate mutual benefits. For example, while employer-centered practices are in the first instance oriented to offering benefits to employers, that does not mean they threaten employee benefits, and vice versa. Equally, it is possible that practices oriented to benefit employers may have negative implications for employees (Boxall & Macky, 2009; Godard, 2001; Guest, 2017). Therefore, the "for whom" conceptual distinction allows for, but does not automatically imply, mutual benefits for employees and employers.

In this study, we follow the "for whom" criterion in order to distinguish between types of FWA bundles, and we develop the theoretical mechanisms through which each may be related to employee work effort.

FWAs, bundles, and work effort

FWAs have been associated with employee work effort, yet often with conflicting results (Kelliher & Anderson, 2010; White, Hill, McGovern, Mills, & Smeaton, 2003). In the literature, work effort is manifested in two dimensions: intensive and extensive. The former refers to the intensity of work, defined as "the rate of physical and/or mental input to work tasks performed during the working day" (Green, 2001, p. 56). The latter refers to the number of hours spent at work, such as the frequency at which an employee works overtime (Avgoustaki, 2016) or the number of working hours (Green, 2001). For example, some studies show evidence associating remote working and reduced hours with more extensive and intensive work effort (Bloom et al., 2015; Kelliher & Anderson, 2010), while others find that flexitime has weak or negative associations with extensive work effort (Avgoustaki, 2016; White et al., 2003). And yet other studies show that employees with more flexibility to set their own hours tend to intensify their work and/or work longer periods when compared to employees with fixed hours (Beckmann, Cornelissen & Kräkel, 2017; Lott & Chung, 2016; Putnam, Myers & Gailliard, 2014).

Lack of consensus in prior research may partly be due to the fact that the main focus has been on one or a small number of individual FWAs. Studying FWAs in isolation might be problematic as it neglects how organizations may actually use such practices. Prior research suggests that FWAs are often given in bundles, where an FWA bundle is defined as a group of interrelated practices that promote work flexibility (Bloom et al., 2011; Konrad & Mangel, 2000; Perry-Smith & Blum, 2000). Thus, concentrating on one or a few FWAs and omitting others that companies use likely provides inconclusive or spurious results. Indeed, SHRM literature has long argued that the grouping of "interrelated and internally consistent human resource practices" (MacDuffie, 1995, p. 198) is important because the resulting bundle may capture effects on employee or firm performance that cannot be captured by focusing solely on individual practices

(Chadwick, 2010; Chadwick, Super & Kwon, 2015; Delery & Doty, 1996; Huselid, 1995; Ichniowski et al., 1997). Therefore, a more appropriate unit of analysis than the individual practice may be the bundle of FWAs.

The bundle approach is based on the notion that human resource practices may be additive or complementary, so that the adoption of one practice is more or less effective when adopted in combination with one or more other human resource practices (Batt, 2002; Delery, 1998; Dyer & Reeves, 1995; Huselid, 1995; Koch & McGrath, 1996; Marchington & Grugulis, 2011; Subramony, 2009). As such, the bundle approach can reveal the degree to which the effects of FWAs on employee outcomes build upon or detract from each other. For example, if remote working has a positive association with work effort while flexitime a negative association, then the bundle approach will help uncover the combined, aggregated effect of these practices. This is crucial given that employees likely respond to the bundle of combined FWAs rather than individual, isolated practices.

At the same time, because different types of FWAs exist, it is possible that such practices fall into distinct bundles rather than a single bundle. Indeed, prior research suggests that human resource practices in general and FWAs in particular may be categorized into different bundles, to the extent that there is a theoretical basis for distinguishing practices by their type (Chung & Tijdens, 2013; Guest, Conway & Dewe, 2004; Subramony, 2009). A two-type approach based on whether FWAs primarily facilitate employees' or employers' interests can potentially identify distinct effects on employee outcomes. Therefore, differentiating between employee- and employer-centered FWA bundles will help generate a clearer understanding of FWAs and their effects on work effort. For example, Bloom et al. (2011) find no association between a single FWA bundle, which included both employee- and employer-centered FWAs, and firm

performance. One possible explanation is that employee-centered and employer-centered FWAs have effects that cancel out one another, which suggests the need to distinguish theoretically and empirically between distinct types of FWA bundles.

In what follows, we thus build on the SHRM literature by focusing on bundled FWAs and we extend this focus by distinguishing between two different types of FWA bundles. We also complement the literature by moving from the dominant focus on firm-level outcomes towards assessing the individual-level implications of bundled practices for work effort. Such an individual-level focus is important because FWA bundles have their effects in the first instance on individual employees, rather than on firm outcomes. For this reason, SHRM research has on several occasions stressed the importance of focusing on more proximal and individual-level outcomes (Kelly et al., 2008; Paauwe, 2009; Wright & Nishii, 2004). To establish such a focus and develop the underlying theoretical mechanisms connecting FWA bundles to individual work effort, we draw from more microlevel theories. Specifically, we invoke theories related to social exchange (gift exchange and psychological contract theories) and related arguments from the job stress literature to theorize and predict how employee-centered and employer-centered FWA bundles can be linked to employee work effort.

The link between employee-centered FWAs and work effort

The literature provides different but overlapping explanations regarding the link between FWAs and work effort. The most prominent explanations derive from theories related to social exchange, that is, gift exchange and psychological contract theories (see Kossek & Lautsch, 2018), which are also the focus of this study.

Social exchange theory is concerned with the obligations that are generated through a series of exchanges between parties (Blau, 1964; Emerson, 1976). Exchanges often occur between employees and the organization; they are typically not negotiated, but instead implicit (Cropanzano & Mitchell, 2005). The exchange process begins when one party makes a "move" and the other party reacts, and so exchanges are usually seen as contingent on rewarding reactions from others. In other words, the receiver (e.g., an employee) is somehow obliged to provide something in return to the giver (e.g., an employer) (Gouldner, 1960). This back and forth process creates feelings of reciprocity, whereby one party is likely to match goodwill and helpfulness toward the other party.

Related arguments are presented in gift exchange theory (Akerlof, 1982), according to which the provision of benefits or "gifts" is an inducement that is part of an exchange that enhances employee effort and performance. According to the theory, gifts can take the form of above-market wages or other benefits, which the employee is willing to return or reciprocate with the gift of effort or performance above the norm. Arguments of both social and gift exchange theories are further reflected in the psychological contract theory, which equally discusses the rule of reciprocity and expectations between employees and employers. More specifically, it states that a psychological contract comprises a set of beliefs about what each party is expected or entitled to receive, and obligated to give, in exchange for another party's contributions (Levinson, Price, Munden, Mandl & Solley, 1962; Rousseau, 1989; Schein, 1965). The promises made by the employer can be either implicit or explicit and the content may vary from tangibles, such as pay and benefits, to less-tangible aspects, such as trust or loyalty.

Although at the most basic level the exchange relationship is typically understood as an exchange of wages for effort, more recent accounts suggest that other aspects, such as FWAs,

may too form the basis of the exchange (de Menezes & Kelliher, 2017; Vidyarthi, Chaudhry & Liden, 2014). Today, employee-centered FWAs are very relevant benefits or "gifts" provided by the employer (Cañibano, 2018; Roehling, Cavanaugh, Moynihan & Boswell, 2000). Employee-centered practices can help employees acquire more autonomy and facilitate control over the time and location of work. For example, work from home and flexitime are associated with the emergence of work–life balance initiatives (Lewis, Gambles & Rapoport, 2007; Tietze & Nadin, 2011) and may allow employees to meet personal and work goals simultaneously.

In summary, in social and gift exchange theories, flexibility is an inducement that is part of a social exchange that enhances motivation and performance (Kossek & Ruderman, 2012), while the psychological contract theory views flexibility more as an implicit expectation many employees have of employers in return for loyalty, commitment, and hard work (Levinson et al., 1962). Regardless of whether flexibility is induced or expected, both theories have similar implications. Employees may perceive flexible practices tailored to them as a form of gift, that is, a favorable treatment or a positive move, from the employer, introduced to accommodate their needs. That benefit or gift will create a sense of reciprocity on the part of the employee, which is likely to result in additional work effort, a behavior that is valued by the employer (Osterman, 1995). Illustrative findings show that employees who perceive having more flexibility to set their own hours tend to intensify their work and/or work longer periods when compared to employees with fixed hours, and the mechanism behind this is often reciprocal behavior (Beckmann et al., 2017; Lott & Chung, 2016; Putnam et al., 2014). Similarly, there is documented evidence that remote workers tend to exert both intensive and extensive work effort in return for access to such practices (Kelliher & Anderson, 2010).

Based on the rule of reciprocity, we suggest that although employee-centered FWAs are mainly designed to facilitate employees and help them reach a more satisfactory work–life balance, they can in fact result in increased work effort. Therefore, we expect that:

Hypothesis 1a. *Employee-centered FWAs are positively associated with employee work effort.*

However, social and gift exchange theories imply that when FWAs become the norm, they are no longer perceived as a gift or an incentive for more effort (de Menezes & Kelliher, 2017). A related argument is conveyed in the psychological contract theory, proposing that if employees feel entitled to FWAs or if such practices become a right built into the employee−employer psychological contract, then such practices might not be perceived as a benefit anymore (Putnam et al., 2014). Employees with a strong sense of entitlement are more likely to show low motivation and engagement and therefore are less likely to show reciprocity (Stavrou & Ierodiakonou, 2016). Consequently, any positive association between employee-centered FWAs and work effort will weaken. This is in line with some existing evidence which suggests that there is no relationship between schedule flexibility and extensive work effort (Avgoustaki, 2016).

This may even imply a negative relationship between employee-centered FWAs and work effort. When employees perceive such practices as the norm, they might actually use them for their intended purpose, that is, to facilitate employee needs and balance life and job demands. Therefore, it is possible that such practices might not encourage intensive work effort or overtime work and so they might result in less work effort. This view is supported in prior research, which has identified FWAs as a workplace solution to work intensification (Kossek, Lewis & Hammer, 2010). As an example, White et al. (2003) show that employee-centered

FWAs such as flexitime (personal choice over starting and finishing times) reduce extensive work effort. Thus, we expect that:

Hypothesis 1b. *Employee-centered FWAs are negatively associated with employee work effort.*

The link between employer-centered FWAs and work effort

FWAs may be of interest not only to the employee but also to the employer as a workplace solution to improve cost efficiency and enhance competitiveness (Tsui, Pearce, Porter & Tripoli, 1997). However, at the same time they may put pressure on employees to supply more effort and achieve higher performance. For example, employees might have to supply more work in less time, or more unpaid work, by working overtime or prolonging their working hours. Empirical evidence associates employer-centered FWAs, such as reduced hours, with greater intensive and extensive work effort (Kelliher & Anderson, 2010; Sigala, 2005). The mechanism behind this positive association is that employees often have to complete the same amount of work or tasks assigned prior to the reduced schedule. Similarly, research on on-call professionals shows that employees having flexibility via part-time work frequently experience longer and uneven hours (Golden & Geisler, 2007). More recent evidence reveals a similar pattern where certain employer-centered FWAs, such as job sharing, can lead to increases in work intensity and overtime (Eurofound, 2015). In line with prior research, we expect that:

Hypothesis 2a. *Employer-centered FWAs are positively associated with employee work effort.*

Compared to employee-centered FWAs, employer-centered FWAs are, in the first instance, oriented towards the benefit of the employer. As such, they might be less favorable or

less attractive to the employee and can even be perceived as unfair (see Beauregard, 2014). Social and gift exchange theories suggest that, in situations where employees express doubt or perceive unfairness regarding the provision of FWAs by employers, they might not reciprocate. Instead, they are more likely to respond with counterproductive work behavior, which are employee behaviors that harm organizations or its employees (Spector & Fox, 2002). These are manifested via reduced work effort, such as arriving late, leaving work early, or taking more or longer breaks, among others, and emerge as an attempt to restore equity in the exchange relationship between the employee and the employer (Adams, 1965).

The job stress literature (e.g., Penney & Spector, 2005) introduces similar arguments by suggesting that initiatives perceived as unfair can be considered as job stressors and so may result in negative employee emotions, such as stress or disappointment. Negative emotions are followed by counterproductive work behavior as a means for employees to cope with a stressor. Employees may decide to slow down productivity, reduce quality or quantity, and evade their regular work duties. Counterproductive work behavior, in extension, reduces any physical or psychological employee reactions such as emotional exhaustion (Krischer, Penney & Hunter, 2010). Although limited, evidence indeed suggests that employees who work under employer-centered FWAs, such as reduced hours, report lower levels of organizational commitment and hence might be less willing to put in additional effort (Kelliher & Anderson, 2010; Steffy & Jones, 1990). Therefore, it is possible that employees might respond with less work effort in an attempt to restore balance or "repair" the perceived unfairness, which leads to the following hypothesis:

> ***Hypothesis 2b.*** *Employer-centered FWAs are negatively associated with employee work effort.*

Family responsibilities

Prior research has reported significant differences in the use of FWAs. Therefore, it is possible that the hypothesized relationships may be stronger or weaker under certain conditions. One crucial reason that such practices are used differently among employees is their family responsibilities (Allen, Johnson, Kiburz & Shockley, 2013; Higgins, Duxbury & Johnson, 2000; Kelliher, Richardson & Boiarintseva, 2018; Ortega, 2009; Wood, de Menezes & Lasaosa, 2003). For example, Golden (2009) suggests that married employees and employees with young children make greater use of FWAs, especially for childcare reasons. Female employees are also more likely to use FWAs because the majority of family and caring tasks are often done by women (Konrad & Mangel, 2000). Bloom et al. (2011) explain that women with family responsibilities tend to take more leaves of absence and, when back at work, tend to seek out flexible practices in order to respond to family needs. Smithson, Lewis, Cooper and Dyer (2004) also emphasize the prevalence of flexible practices among female employees and particularly among female employees with young children at home.

Yet, ten Brummelhuis and van der Lippe (2010) report that greater access to FWAs is more appreciated mainly by single and childless employees, while Golden (2001) reports some mixed results regarding family responsibilities and the use of FWAs; married employees have more flexibility but women seem to have less flexibility than men. Ortega (2009) further presents some mixed results. He shows that male employees have more flexibility than women, while number of children and being the main carer or having a larger household (both implying greater family responsibilities) seem not to be associated with flexibility.

If the use of FWAs is more prevalent among certain categories of employees, such as married or female employees, then a more pronounced relationship between FWAs and work effort may be more likely for married rather than single employees as well as for females than males. Given that the evidence is mixed, we cannot make clear predictions about how the hypothesized relationships will be stronger or weaker depending on employees' family responsibilities. However, it is reasonable to expect that family responsibilities act as potential moderators. Thus, we hypothesize that:

> ***Hypothesis 3.*** *The relationship between employee- and employer-centered FWAs and work effort will be moderated by family responsibilities.*

Methods

Data and sample

Our analysis is based on *Understanding Society*, a large household panel survey carried out in the United Kingdom, funded by the Economic and Social Research Council (Buck & McFall, 2012). The survey is administered in a stratified random sample of approximately 40,000 households drawn from 2,640 postal sectors and gathers data through face-to-face interviews and self-completed online questionnaires. It covers topics such as unemployment, income, health, labor force entries and exits, and retirement. This survey has been used in prior research, for example by Chung and van der Horst (2018), to study women's employment patterns and the use of flexitime and teleworking, and by Wheatley (2017) to study employee satisfaction and FWAs.

Information on the working conditions and arrangements of UK citizens is mainly included in waves 2 and 4. Particularly, the survey includes questions on whether FWAs are available to the employee, if requested, and separate questions on whether the employee actually uses them. Therefore, by design, the survey removes concerns regarding conceptual conflation of

these concepts (McNamara, Pitt-Catsouphes, Brown & Matz-Costa, 2012). In this study, we focus on wave 2, carried out between January 2010 and December 2012. This specific wave has not only a plethora of questions on FWAs but also on work effort and both work and worker characteristics. It includes information on 39,942 households, out of which 30,428 participated, based on a response rate of 76.8 per cent in Great Britain and 81.9 per cent in Northern Ireland. For the purposes of the study we imposed a few sampling rules. From the original data, we excluded all employees below the age of 16 and above 69 years old, as well as extreme values of overtime (overtime > 50 hours) and commuting time (commuting time > 180 minutes). These restrictions and the differences in response rates across variables left a final usable number of 13,834 individuals, all employed.

Measures

Dependent variables, intensive and extensive work effort, are measured in the spirit of prior literature (e.g., Green & McIntosh, 2001; Kristensen, Bjorner, Christensen & Borg, 2004). The variable *intensive work effort* is captured via two alternative measures: job strain and job tension. Job strain is proxied with a question that asks respondents to indicate whether they have recently felt constantly under strain. Responses are measured on a four-point scale (where 0 = not at all; 1 = no more than usual; 2 = rather more than usual; 3 = much more than usual). Job tension is measured with a question that asks respondents to indicate (thinking of the past few weeks) how much of the time their job has made them feel tense. Responses are measured on a five-point scale (where 0 = never; 1 = occasionally; 2 = some of the time; 3 = most of the time, and 4 = all of the time). The variable *extensive work effort* is captured via overtime and working hours. The former variable measures the number of overtime hours an employee works in a normal week

and the latter the total number of hours normally worked per week. These are indicators of the same underlying construct (Dembe, Erickson, Delbos & Banks, 2005). Nevertheless, they potentially capture different aspects of extensive work effort: working hours can capture extreme work effort while overtime can capture work outside the individual's normal working hours.

Understanding Society, wave 2, includes 10 items related to FWAs. The items ask respondents to indicate whether they currently work in any of the following FWAs: *temporary work*, *part-time work*, *job sharing*, *compressed schedule*, *annualized hours*, *term-time work*, *flexitime work*, *work from home*, *other flexible work*, and *informal flexible work*. Most of these variables are dichotomous and take the value of 1 if used by the employee, and 0 otherwise. Part-time work takes the value of 1 if the employee is working part-time and 0 if the employee is working full-time. One exception is the variable informal flexible work, which is measured on a three-point scale (where 0 = no, 1 = sometimes, and 2 = yes) with a question regarding whether the respondent (aside from any formal FWA) is able to vary his or her working hours on an informal basis. Given that we aim to group FWAs into meaningful bundles, the variable is converted into a dummy (where 0 = no and 1 = sometimes or yes) in order to measure variables that will be bundled together in the same scale.

We capture employee family responsibilities with three variables: *gender*, *marital status*, and *number of children under 18 years old*. Gender (where 0 = male and 1 = female) is a proxy for family responsibilities because there is extensive evidence showing that such responsibilities are concentrated more heavily on women than on men, and women seem to spend considerable time taking care of housework, children, or elderly household members (Konrad & Mangel, 2000; Ortega, 2009). We also use more direct measures of family responsibilities. One such measure is employee marital status (where married or living with partner = 1 and 0 = not married

or living with partner), and also number of children under 18 years old, using fixed effects for four categories: no children, one child under 18 years old, two children under 18 years old, and three or more children under 18 years old.

We control for a large number of employee and firm characteristics that may confound associations between FWAs, work effort, and family responsibilities. Prior research suggests that certain FWAs might be particularly relevant not only for employees with high family responsibilities but also for employees who face long commutes to work (Bloom et al., 2015). So, we control for *commuting time* with a question that measures how much time (in minutes) it usually takes for the employee to get to work each day, door to door. We also control for employee *age* (in years), and *education* (where 0 = no qualification, 1 = other qualification or GCSE etc., 2 = A-level etc., 3 = other higher level or degree).

Furthermore, we control for whether an employee has a *second job* with a question that asks respondents to indicate, "Do you currently earn any money from a second job, odd jobs, or from work that you might do from time to time, apart from any main job you have?" (where 0 = no and 1 = yes), and *job security* with a question that asks, "How likely do you think it is that you will lose your job during the next 12 months?" measured on a four-point scale (where 0 = very unlikely and 3 = very likely). In addition, we control for *union presence* with a question, "Is there a trade union, or a similar body such as a staff association, recognized by your management for negotiating pay or conditions for the people doing your sort of job in your workplace?" (where 0 = no and 1 = yes), and *firm size* (where 0 = 1-2 employees, 1 = 3-9 employees, 2 = 10-24 employees, 3 = 25-49, 4 = 50-99, 5 = 100-199, 6 = 200-499, 7 = 500-999, and 8 = 1000 or more employees).

Finally, we control for *occupation* and *industry* fixed effects. Based on the National Statistics Socio-economic Classification (NS-SEC 8 classification) we included fixed effects for seven occupational categories. Also, based on the UK Standard Industrial Classification of Economic Activities 2007 (UK SIC 2007) we included fixed effects for twelve industries[1] defined at the one-digit level.

Results

Table I presents mean and standard deviations for all variables included in our models. Table II presents the correlations among the intensive and extensive work effort measures, FWA measures, and control variables, while excluding occupation and industry dummies to conserve space.

[Insert Tables I and II about here]

The main analysis of this study is conducted in three steps. First step, and prior to creating the bundles, we test the relationship between each individual FWA and the dependent variables. Second step, we create the FWA bundles via confirmatory factor analysis (CFA) and run a series of regression analyses to assess their relationship to intensive and extensive work effort. Last step, we examine the moderating role of family responsibilities by introducing the interaction terms of employee- and employer-centered FWAs with gender, marital status, and number of children under 18 years old.

The relationship between individual FWAs and types of work effort

The variables job strain and job tension, which capture intensive work effort, are inherently ordered multinomial-choice variables, and thus we estimate ordered logit models (see Greene, 2003, pp. 736–740). In the case of extensive work effort variables, overtime is an overdispersed count variable ($\mu = 3.246$; $\sigma = 30.552$), suggesting that negative binomial regression would be appropriate for addressing the problem of overdispersion. In addition, working hours is a continuous variable suggesting that Ordinary Least Squares (OLS) would be appropriate in our estimates.

[Insert Table III about here]

The overall results presented in Table III show that the relationship between individual FWAs and different types of work effort does not follow a clear pattern in all cases. Instead, it varies depending on the specific flexible practice used by the employee and the type of work effort. For example, employees who have either temporary or part-time work are less likely to experience either intensive or extensive work effort, while home-workers are more likely to experience either type of work effort (Models 1-4). However, the variable informal flexible practices is negatively linked to intensive work effort, yet positively linked to one dimension of extensive work effort, specifically working hours (Model 4). The reverse holds for job sharing, which is positively linked to intensive work effort and negatively to extensive work effort. Specifically, Model 2 shows that employees who use job sharing are more likely to experience job tension, although the coefficient is marginally significant, but report fewer working hours, as illustrated in Model 4. In other cases, such as annualized hours, we find no evidence of a link to work effort, as the coefficients are not statistically significant.

With regard to moderators, we find that gender has a positive relationship with job strain and job tension, whereas it has a negative relationship with overtime and working hours. Thus, women are more likely to experience intensive work effort, yet less likely to experience extensive work effort, relative to men. In contrast, marital status is only associated with working hours as indicated in Model 4. These results demonstrate that married employees work more hours compared to single employees. Also, employees with more children under 18 years old, although having higher job strain, report less overtime and fewer working hours than employees with fewer or no children under that age.

Moving to the control variables, Models 2 to 4 suggest that the more minutes employees spend in commuting, the higher the likelihood of experiencing job tension and overtime and the more hours they spend at work. Older employees are less likely to experience job tension and overtime than younger employees, yet they report more working hours. Also, employees with higher education levels have a higher likelihood of experiencing greater work effort of any type. Employees with a second job work fewer hours and employees with more job security are less likely to experience intensive work effort but more likely to work overtime. Moreover, employees in unionized workplaces seem more likely to experience job tension and overtime and employees in larger firms also seem more likely to experience job tension while reporting more working hours.

The relationship between FWA bundles and types of work effort

In the next step, we use the "for whom" criterion to designate different bundles. We use the ten FWAs available in the data set and perform a Confirmatory Factor Analysis (CFA)[2] to find the best fit with regard to how bundles should be defined. The measurement model shows an

outstanding fit (number of observations 13,834), based on the following goodness-of-fit tests: RMSEA = 0.02, CFI = 0.96, TLI = 0.94 (Bagozzi & Yi, 2012).

From this model, two bundles of FWAs emerged: one with employee-centered FWAs, that is, term-time work, flexitime work, work from home, other flexible work, and informal flexible work; and another with employer-centered FWAs, that is, temporary work, part-time, job sharing, compressed schedule, and annualized hours. Although, based on the CFA, part-time work belongs to the employer-centered FWA bundle, we decided to include it separately in the models, for two reasons. First, theoretically it is not always clear whether part-time work is an employee- or an employer-centered flexible practice (Albion, 2004; Buddelmeyer, McVicar & Wooden, 2015; Kalleberg, 2001, 2003). Second, preliminary empirical analysis shows a very strong association between the bundle of employer-centered FWAs and work effort when the variable part-time work is in the bundle. This practice seems to dominate the bundle effect and overshadows the potential effects of the remaining practices in the bundle. Therefore, we decided to exclude the variable from the bundle and estimate its coefficients separately.

Because our data were collected from a single source, prior to our analysis we considered steps to limit potential effects associated with common method variance. Following prior research (Podsakoff, MacKenzie, Lee & Podsakoff, 2003), we relied on the survey design and conducted Harman's single-factor test to examine common method variance in our study. First, by design, the *Understanding Society* survey satisfies a number of established procedural remedies in terms of minimizing scale item ambiguity, social desirability bias in item wording, and balance of positive and negative items. In addition, the main variables of interest (i.e., intensive and extensive work effort and FWAs) are separated in the survey and are measured on different scales. We also conducted Harman's single-factor test (Podsakoff et al., 2003) as a

diagnostic for common method variance, which involves a CFA where all variables are allowed to load onto one general factor. We ran four separate tests, one for each dependent variable, and the models exhibited extremely poor fit in all cases (Job strain: RMSEA = 0.06, CFI = 0.17, and TLI = -0.13; Job tension: RMSEA = 0.06, CFI = 0.19, TLI = -0.11; Overtime: RMSEA = 0.06, CFI = 0.30, TLI = 0.05; Working hours: RMSEA = 0.06, CFI = 0.50, TLI= 0.32), especially when compared to our measurement model. Thus, we infer that common method variance is unlikely to be a concern in our analyses.

The two bundles derived from the CFA were subsequently used to test the relationship between each of the bundles and work effort. We operationalized the bundles using the additive approach (Batt, 2002; Chadwick, 2010; MacDuffie, 1995). This approach enables an estimation of whether, on aggregate, the relationship between types of FWAs and work effort is positive or negative. Therefore, it allows us to examine whether FWAs build upon or detract from each other in determining work effort. To facilitate comparison of the effect sizes, we standardized the FWA bundles prior to estimation.

[Insert Table IV about here]

Table IV presents the main effects of employee- and employer-centered FWAs, the moderators, and control variables. All models include fixed effects for occupations and industries. Starting from left to right, Models 5 and 6 on intensive work effort show that employee-centered FWAs have a negative yet non-significant relationship with job strain and a negative and highly significant relationship with job tension, keeping all else constant. Specifically, we find that the odds of higher job tension decrease by 9.1 per cent (i.e., a multiplicative factor of exp[-0.09] = 0.91) for each unit increase in employee-centered FWAs. In

addition, employer-centered FWAs have a negative and significant relationship with both dimensions of intensive work effort, keeping everything else constant. Specifically, the odds of higher job strain decrease by 9.7 per cent and the odds of higher job tension decrease by 9.1 per cent for each unit increase in employer-centered FWAs.

Furthermore, Models 7 and 8 on extensive work effort indicate that employee-centered FWAs have a negative yet non-significant relationship with overtime and a negative and highly significant relationship with working hours, all else being constant. Specifically, a one-unit increase in employee-centered FWAs is associated with about a sixth of an hour less (-0.17) in weekly working hours. Also, the employer-centered FWAs have a negative and significant relationship with overtime and working hours, all else being held constant. In particular, the odds of overtime decrease by 9.7 per cent for each unit increase in employer-centered FWAs, and a unit increase in employer-centered FWAs is associated with just under an hour less (-0.88) in weekly working hours. Persistently, part-time work presents negative coefficients on both intensive and extensive work effort.

Overall, the results are in line with Hypotheses 1b and 2b. Hence, they are more consistent with the idea that employees might perceive employee-centered FWA practices as the norm, which is less likely to encourage more work effort. With respect to employer-centered FWAs, the evidence resonates more with the counterproductive work behavior argument, which suggests that employees are more likely to respond with less work effort in an attempt to restore balance or "repair" perceived unfairness (Adams, 1965; Beauregard, 2014; Spector & Fox, 2002). Results do not provide support for Hypothesis 1a, which speculates that employee-centered FWAs will result in increased work effort, as an act of reciprocation. Results also do not support Hypothesis 2a, which advocates that employer-centered FWAs put pressure on

employees as they are often introduced as a workplace solution to improve cost efficiency and enhance competitiveness, and therefore can lead to increases in work effort.

It is important to emphasize that our conceptual arguments and empirical strategy do not preclude the possibility that both mechanisms (reciprocation versus entitlement/norm) underlie the effect of employee-centered FWAs on work effort, nor do our analyses force one of the mechanisms to dominate. Indeed, if both mechanisms had effects of similar magnitude, then the association between employee-centered FWAs and work effort would simply produce a coefficient indistinguishable from zero. The fact that we find evidence of a negative and significant association suggests that the dominant mechanism is that employees might feel entitled to such practices or perceive them as the norm and so they use employee-centered FWAs for their intended purpose, that is, to balance life and job demands. A similar logic holds for the mechanisms underlying employer-centered FWAs (employer pressure versus perceived unfairness): the fact that we find evidence of a negative and significant association between employer-centered FWAs and work effort suggests that the dominant mechanism is that employees perceive such practices as unfair, resulting in less work effort in an attempt to restore fairness.

Tests of moderating effects of family responsibilities

In the final step of the analysis we examine whether the marginal effects of FWAs are larger or smaller given the presence of certain factors reflecting employee family responsibilities, that is, gender, marital status, and the number of children under 18 years old in the household. To simplify interpretation of the results, we estimate linear rather than nonlinear models and we present our findings in Table V.

[Insert Table V about here]

First, we test the moderating role of gender on the relationship between each type of FWA bundle and each type of work effort. In the majority of cases, the interaction terms are not significantly different from zero. One exception is the coefficient in Model 10, which shows that the interaction term between employee-centered FWAs and gender is negative and significant. This finding indicates that employee-centered FWAs reduce job tension more in women than in men, with a one-unit increase in employee-centered FWAs reducing job tension in women by 0.08 units, yet in men by 0.03 units, all else being constant. Another exception is the coefficient in Model 11, which shows that the interaction between employer-centered FWAs and gender is positive, nevertheless marginally significant. This shows that such practices decrease overtime more in men than in women. In particular, we find that a one-unit increase in employer-centered FWAs reduces overtime in men by 16 minutes[3] (-0.26 hours), yet in women by only 6 minutes (-0.10 hours).

Next, we examine the moderating role of marital status. In Model 14, results show that employer-centered FWAs are associated with a higher likelihood of job tension for employees who are married compared to single employees. Specifically, a one-unit increase in employer-centered FWAs reduces job tension in single employees by 0.08 units, yet in married employees by only 0.02 units. Also, in Model 16 we find higher working hours for employees who are married compared to single employees. In particular, we find that a one-unit increase in employer-centered FWAs reduces working hours in single employees by 1 hour and 7 minutes (-1.12 hours), yet in married employees by only 46 minutes (-0.76 hours). None of the interaction

terms between employee-centered FWAs and marital status on either intensive or extensive work effort are statistically significant.

Finally, we examine the moderating role of children under 18 years old. We interact the three dummies of the variable children under 18 years old with each type of FWA bundle and introduce their interaction terms in the models. Models 18 and 20 show positive and significant interaction terms between employer-centered FWAs and employees with one child under 18 years old. In Model 18, the result implies that a unit increase in employer-centered FWAs increases job tension in employees with one child by 0.03 units, yet in the omitted category – employees have no children – it decreases by 0.05 units. In Model 20, the result implies a unit increase in employer-centered FWAs decreases working hours in employees with one child by 28 minutes (0.47 hours), yet in employees with no children by 57 minutes (0.95 hours). In addition, Model 20 shows a positive and significant interaction term between employee-centered FWAs and two children under 18 years old. This result shows higher working hours for employees with two children under 18 years old, compared to employees with no children. In detail, a unit increase in employee-centered FWAs increases working hours in employees with two children under 18 years old by approximately 11 minutes (0.18 hours), yet in employees with no children by approximately 13 minutes (0.22 hours).

Although the effect sizes are not all substantial, overall results provide some evidence for Hypothesis 3 regarding the moderating role of family responsibilities. Most of the moderating effects are detected in the relationship between employer-centered FWAs, rather than employee-centered, and work effort. These findings show that such practices induce relatively less work effort from employees with fewer family responsibilities than employees with more family responsibilities.

Discussion

In this study, we use national UK data to examine the relationship between employee- and employer-centered FWA bundles and employee work effort. We also examine whether the idiosyncratic family responsibilities of employees moderate the link between the two types of FWA bundles and work effort. After controlling for a number of individual and firm-level characteristics, we find a negative association between employee- and employer-centered FWAs, respectively, and both intensive and extensive work effort. In addition, family responsibilities appear to play a minor moderating role, mainly in the relationship between employer-centered FWAs and either type of work effort. In particular, when exposed to employer-centered FWAs, women, married employees, and employees with more children under 18 years of age experience higher levels of work effort. By contrast, family responsibilities by and large do not moderate the relationship between employee-centered FWAs and either type of work effort, although women under employee-centered FWAs seem to experience less job tension than men. These findings offer a number of theoretical and methodological advancements in the (S)HRM literature in general, and literature on flexible work and employee work effort in particular, as discussed below.

First, conceptually and methodologically we highlight the importance of examining FWAs as bundles as well as distinguishing between different types of bundles. Our findings are in line with SHRM research, which argues that systems or bundles of interrelated practices may cause effects that cannot be captured by focusing solely on individual practices (Bloom et al., 2011; Delery & Doty, 1996; Huselid, 1995; Ichniowski et al., 1997). Results concerning the relationship between flexitime and work from home on the one hand, and work effort on the

other, are an illustrative example. Consistent with previous studies which consider flexitime an employee-friendly practice that allows better work–life balance (Lewis et al., 2007; Tietze & Nadin, 2011), flexitime here is negatively associated both with intensive and extensive work effort. Contrary to flexitime, work from home is positively associated to both types of work effort. This contradicts prior research that suggests work from home is also an employee-friendly practice associated with less job tension (Lewis et al., 2007; Tietze & Nadin, 2011). When examined in bundles, these two practices are grouped under the employee-centered FWA bundle, which links negatively to work effort. This finding indicates that although when studied separately, different FWAs may have different effects, on balance they reduce work effort, reflecting the importance of examining FWAs in combination to identify how bundled interrelated FWAs consistently link to increased or decreased work effort.

We further highlight that a focus on types of FWA bundles seems important because it allows the different bundles to have their own implications for work effort. The two-type approach adopted here, distinguishing employee- and employer-centered FWA bundles, helps us identify how different bundles are related to more or less work effort, which also allows us to elucidate the different mechanisms through which either bundle affects work effort. Our findings confirm a negative link between the bundle of employee-centered FWAs and work effort, contradicting prior research which argues that such practices will induce more employee work effort as an act of reciprocation (Kelliher & Anderson, 2010). We infer that bundled employee-centered FWAs appear to be taken for granted and are perceived neither as an act of "goodwill" coming from the employer that needs to be returned, nor as a gift to employees in exchange for more work effort (de Menezes & Kelliher, 2017; Putnam et al., 2014). This is an important result because it advances existing knowledge on FWAs by suggesting a normalization of FWAs

within working environments (Kossek et al., 2010). More broadly, the result implies that employee-centered FWAs, when used in a bundle, are in fact serving their actual purpose, as they seem to be used to facilitate and improve employees' work–life balance.

Furthermore, our findings confirm a negative link between the bundle of employer-centered FWAs and work effort, contradicting the argument that such practices are cost-containment strategies designed to put pressure on employees, which would instead result in increased work effort. This evidence points to the idea that employees are more likely to respond to bundled employer-centered FWAs with counterproductive work behavior, which is manifested through less work effort, possibly in an attempt to restore balance or "repair" perceived unfairness related to such practices (Beauregard, 2014). This finding is consistent with recent evidence suggesting that employees may have negative perceptions regarding employer-centered FWAs, due to the poor job quality connected to such practices (Buddelmeyer et al., 2015; Eurofound, 2015; Kalleberg, Reskin & Hudson, 2000). If increased work effort is a desired outcome and a proxy for firm performance (Pas et al., 2011), then the negative link found suggests that, from a strategic point of view, such flexible practices may be suboptimal.

A second contribution of our study is to the SHRM literature, as it connects FWAs as bundles to outcomes more proximal to individual employees than firm performance. Particularly, the literature explains that FWAs may not directly affect aggregate workplace outcomes but should in the first instance have more individual-level implications. By focusing on these individual-level outcomes, and in particular employee work effort, we are able to provide a more granular picture regarding the implications of bundled FWAs for employees, while we are also in a better position to separate the likely mechanisms through which different types of FWA bundles are related to such outcomes.

As a final contribution, our findings suggest that employees with fewer family responsibilities, when exposed to bundles of FWAs, are putting in less work effort when compared to employees with more family responsibilities. The results are consistent with some prior research on family responsibilities and the use of FWAs, which suggests that the evidence sometimes contradicts the mainstream idea that employees with family responsibilities might benefit more by these practices (Padavic, Ely & Reid, 2019). One interpretation for such findings may be that employees with more family responsibilities have a stronger need to maintain their job and so may feel relatively less able to afford a reduction in work effort.

Implications

Our findings raise implications regarding the use of FWAs both for employers and employees. Offering employee-centered FWAs in bundles might better facilitate work–life balance because it appears to reduce work intensity and long hours. This result has further implications. Given that employee well-being is tied to work effort (Avgoustaki & Frankort, 2018; Sánchez, 2017), employees will be better off using such practices. Indirectly, employers will be better off too, as employees with improved well-being are more likely to be productive and less likely to quit their jobs (Anderson, Coffey & Byerly, 2002). Our findings also imply that offering a bundle of employer-centered FWAs may not achieve cost efficiency through enhanced work effort. Employer-centered practices are often perceived to be contingent forms of employment that regularly imply inferior working conditions (Bessa & Tomlinson, 2017; McGovern, Smeaton & Hill, 2004; Schneider & Harknett, 2019). As such, they are likely to be perceived as unfair and can lead to counterproductive work behavior, manifested via less work effort, which may in turn imply lower productivity and firm performance. Challenges for both managers and policymakers

include identifying and promoting practices that improve work–life balance in particular and well-being in general, but also firm productivity and financial performance.

Limitations and future research

Despite our study's contributions, it faces some limitations inherent particularly in the nature of the data used in our analysis. These may provide opportunities for future research. First, although prior research has identified FWAs as one microlevel antecedent of work effort, given that we rely on cross-sectional data we cannot easily establish the causal ordering of effects, nor can we confirm the effects of FWAs on work effort for long periods of time. Future research based on longitudinal designs would be valuable as it could improve the understanding of causality. Also, such data can potentially capture chronic work effort and examine how the longer-term use of FWA bundles affects employee work intensification.

Another potential limitation is that data are based exclusively on employee self-reports and therefore might be susceptible to biases associated with common method variance (Podsakoff, MacKenzie, Lee & Podsakoff, 2003). Given that the study focuses on employee work effort and their use of FWAs, we believe that employees are appropriate respondents, and self-reporting is generally viewed as a reliable method for measuring work effort (Avgoustaki, 2016). Indeed, self-reported answers do not automatically lead to issues associated with common method variance (Spector, 2006) and we find no evidence of common method bias in our results. Nevertheless, future research could combine data from across multiple sources (e.g., employees and employers) to examine the use and consequences of bundled FWAs.

Moreover, prior research has reported that employee-centered FWAs may benefit lower-level employees the most whereas employer-centered FWAs may hurt them the most, due to

"involuntary income and benefits loss" (Kossek & Lautsch, 2018). Although we control for a number of occupational categories, we do not focus on heterogeneity across occupational groups. Future research could examine whether the negative relationships found in this study, between employee- and employer-centered FWA bundles and types of work effort, replicate across occupations. Also, prior research suggests that FWAs and work outcomes could differ for employees who are also carers (ten Brummelhuis & van der Lippe, 2010). Even though this study examines the moderating role of family responsibilities, it does not differentiate between kinds of responsibilities, such as responsibility for children and responsibility for the elderly. Future research could examine the moderating role of different kinds of responsibilities. Finally, although our findings are based on a large, nationally representative sample in the UK and complement prior qualitative and smaller-scale studies, they may not easily generalize outside this context. Future research could study FWA bundles and work effort in the contexts with different labor market conditions and institutional factors.

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Table I. Summary statistics (N=13,834)

Variable	Mean	Std. Dev.	Min	Max
Job strain	1.02	0.73	0	3
Job tension	1.41	1.03	0	4
Overtime	3.22	5.49	0	50
Working hours	30.79	10.73	1	96
Temporary work	0.07	0.25	0	1
Part-time work	0.34	0.47	0	1
Job sharing	0.02	0.15	0	1
Compressed schedule	0.02	0.14	0	1
Annualized hours	0.02	0.13	0	1
Term-time work	0.07	0.26	0	1
Flexitime work	0.16	0.37	0	1
Work from home	0.05	0.22	0	1
Other flexible work	0.06	0.23	0	1
Informal flexible work	0.69	0.46	0	1
Employee-centered FWAs	1.03	0.77	0	5
Employer-centered FWAs	0.13	0.35	0	3
Gender	0.63	0.48	0	1
Marital status	0.71	0.45	0	1
No children	0.71	0.45	0	1
One child under 18 years old	0.14	0.34	0	1
Two children under 18 years old	0.12	0.32	0	1
Three or more children under 18 years old	0.04	0.19	0	1
Children under 18 years old	0.29	0.45	0	1
Commuting time	25.66	21.09	1	180
Age	40.62	12.41	16	69
Education	2.10	0.94	0	3
Second job	0.08	0.27	0	1
Job security	2.33	0.76	0	3
Unionization	0.56	0.50	0	1
Firm size	4.24	2.39	0	8
Large employers and higher management occupations	0.05	0.23	0	1
Higher professional occupations	0.08	0.27	0	1
Lower management and professional occupations	0.32	0.47	0	1
Intermediate occupations	0.17	0.38	0	1
Lower supervisory and technical occupations	0.07	0.25	0	1
Semi-routine occupations	0.21	0.41	0	1
Routine occupations	0.09	0.28	0	1

Agriculture, forestry, and fishing; Mining and quarrying	0.00	0.07	0	1
Manufacturing	0.08	0.27	0	1
Electricity, gas, steam and air conditioning; Supply, water supply, sewerage, waste management and remediation activities; Construction	0.03	0.18	0	1
Wholesale and retail trade	0.14	0.35	0	1
Transportation and storage	0.03	0.18	0	1
Accommodation and food service activities	0.05	0.22	0	1
Information and communication	0.03	0.17	0	1
Financial and insurance activities; Real estate activities; Professional, scientific and technical activities	0.10	0.30	0	1
Administrative and support service activities	0.03	0.18	0	1
Public administration and defence, compulsory social security; Education	0.25	0.43	0	1
Human health and social work activities	0.20	0.40	0	1
Arts, entertainment and recreation	0.04	0.20	0	1

Table II. Correlations (N=13,834)

Variable		1	2	3	4	5	6	7	8	9	10	11	12	13
1	Job strain	1.00												
2	Job tension	0.36	1.00											
3	Overtime	0.07	0.14	1.00										
4	Working hours	0.03	0.16	0.18	1.00									
5	Temporary work	-0.03	-0.08	-0.05	-0.19	1.00								
6	Part-time work	-0.02	-0.11	-0.19	-0.75	0.11	1.00							
7	Job sharing	0.01	0.01	-0.02	-0.11	0.01	0.07	1.00						
8	Compressed schedule	0.02	0.02	-0.01	0.06	-0.01	-0.05	0.00	1.00					
9	Annualized hours	0.00	0.01	0.01	0.05	-0.01	-0.05	0.01	0.02	1.00				
10	Term-time work	0.00	-0.02	0.02	-0.12	0.04	0.04	0.07	-0.03	0.00	1.00			
11	Flexi-time work	0.03	0.00	-0.04	0.10	0.01	-0.14	0.01	0.03	-0.03	-0.09	1.00		
12	Work from home	0.04	0.03	0.10	0.12	-0.01	-0.10	-0.02	0.04	0.00	-0.04	0.11	1.00	
13	Other flexible work	0.01	0.01	0.03	0.03	0.01	-0.04	0.01	0.01	0.00	-0.03	0.00	0.06	1.00
14	Informal flexible work	-0.02	-0.04	0.01	0.10	-0.01	-0.07	-0.01	0.04	-0.01	-0.19	0.19	0.13	0.12
15	Employee-centered FWAs	0.02	-0.02	0.03	0.11	0.01	-0.14	0.02	0.04	-0.02	0.16	0.60	0.42	0.38
16	Employer-centered FWAs	0.00	-0.04	-0.05	-0.14	0.71	0.07	0.44	0.41	0.36	0.04	0.01	0.00	0.02
17	Gender	0.04	0.05	-0.11	-0.30	0.00	0.29	0.06	-0.01	-0.06	0.13	-0.06	-0.08	-0.05
18	Marital status	0.00	0.01	0.02	0.09	-0.12	-0.05	0.03	0.03	0.01	0.03	0.02	0.06	0.01
19	Children under 18 years old	0.04	0.01	-0.09	-0.25	-0.04	0.27	0.09	0.00	-0.02	0.14	-0.03	-0.02	0.01
20	Commuting time	0.03	0.06	0.09	0.18	0.00	-0.15	-0.01	0.04	0.00	-0.08	0.06	0.18	0.03
21	Age	-0.01	-0.01	-0.03	0.05	-0.14	0.00	0.02	0.02	0.02	0.06	0.02	0.02	0.01
22	Education	0.07	0.10	0.15	0.18	0.03	-0.16	0.00	0.03	0.01	0.05	0.08	0.13	0.03
23	Second job	0.00	-0.01	0.00	-0.09	0.04	0.07	0.02	0.01	0.01	0.05	0.00	0.00	0.04
24	Job security	-0.09	-0.08	0.07	0.06	-0.18	-0.05	-0.02	-0.02	-0.01	0.01	-0.06	-0.01	0.00
25	Unionization	0.04	0.07	0.03	0.10	-0.05	-0.09	0.01	0.03	0.04	0.12	0.09	-0.04	-0.06
26	Firm size	0.03	0.07	0.06	0.21	-0.05	-0.18	-0.05	0.03	0.03	-0.07	0.12	0.07	-0.04
		14	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**
14	Informal flexible work	1.00												
15	Employee-centered FWAs	0.70	1.00											
16	Employer-centered FWAs	0.00	0.03	1.00										

17	Gender	-0.10	-0.08	0.00	1.00									
18	Marital status	0.04	0.07	-0.05	-0.05	1.00								
19	Children under 18 years old	-0.03	0.01	0.00	0.45	0.12	1.00							
20	Commuting time	0.08	0.11	0.01	-0.12	0.03	-0.09	1.00						
21	Age	-0.02	0.02	-0.08	0.01	0.25	-0.07	0.00	1.00					
22	Education	0.06	0.14	0.04	-0.05	0.04	0.01	0.18	-0.12	1.00				
23	Second job	0.01	0.04	0.04	0.00	-0.02	-0.02	-0.01	0.00	0.04	1.00			
24	Job security	0.01	-0.02	-0.15	0.00	0.02	0.00	-0.04	-0.02	0.01	-0.02	1.00		
25	Unionization	-0.08	0.01	-0.01	0.07	0.08	0.07	0.02	0.14	0.13	0.01	-0.02	1.00	
26	Firm size	0.04	0.06	-0.03	-0.08	0.07	-0.03	0.16	0.06	0.17	-0.05	-0.01	0.40	1.00

Note: All correlations above |0.020| are significant at or beyond p=0.01.

Table III. Results of ordered logit, negative binomial and OLS models: Individual FWAs predicting intensive and extensive work effort (N=13,834)

	Ordered Logit Models		**Negative Binomial Model**	**OLS Model**
	Intensive Work Effort		**Extensive Work effort**	
	Job Strain	**Job Tension**	**Overtime**	**Working Hours**
Variable	**Model 1**	**Model 2**	**Model 3**	**Model 4**
Temporary work	-0.33***	-0.62***	-0.23***	-3.95***
	(0.07)	(0.07)	(0.08)	(0.24)
Part-time work	-0.07*	-0.41***	-0.56***	-14.65***
	(0.04)	(0.04)	(0.04)	(0.14)
Job sharing	0.10	0.17	0.12	-3.82***
	(0.11)	(0.11)	(0.12)	(0.38)
Compressed schedule	0.16	0.08	-0.16	0.80**
	(0.11)	(0.11)	(0.13)	(0.39)
Annualized hours	0.04	0.00	0.05	0.01
	(0.13)	(0.12)	(0.14)	(0.45)
Term-time work	-0.05	-0.18***	0.08	-2.64***
	(0.07)	(0.07)	(0.08)	(0.24)
Flexi-time work	0.08*	-0.13***	-0.25***	-0.81***
	(0.05)	(0.04)	(0.05)	(0.16)
Work from home	0.22***	0.05	0.36***	0.67**
	(0.08)	(0.07)	(0.08)	(0.27)
Other flexible work	0.08	0.10	0.18**	-0.46*
	(0.07)	(0.07)	(0.08)	(0.25)
Informal flexible work	-0.13***	-0.21***	-0.01	0.37***
	(0.04)	(0.04)	(0.04)	(0.13)
Gender	0.14***	0.29***	-0.13***	-1.41***
	(0.04)	(0.04)	(0.05)	(0.14)
Marital status	-0.03	-0.01	-0.04	0.47***
	(0.04)	(0.04)	(0.04)	(0.13)
Children under 18 years old	0.12***	-0.04	-0.19***	-0.74***
	(0.04)	(0.04)	(0.05)	(0.15)
Commuting time	0.00	0.00**	0.00***	0.02***
	(0.00)	(0.00)	(0.00)	(0.00)
Age	-0.00	-0.00***	-0.01***	0.01**
	(0.00)	(0.00)	(0.00)	(0.01)
Education	0.08***	0.09***	0.15***	0.16**
	(0.02)	(0.02)	(0.02)	(0.07)
Second job	0.03	-0.04	0.10	-1.17***
	(0.06)	(0.06)	(0.07)	(0.21)
Job security	-0.25***	-0.25***	0.12***	0.05
	(0.02)	(0.02)	(0.02)	(0.08)
Unionization	0.05	0.11***	0.10**	0.07
	(0.04)	(0.04)	(0.04)	(0.14)
Firm size	0.00	0.02***	0.01	0.12***
	(0.01)	(0.01)	(0.01)	(0.03)
Occupation/ Industry	*Yes*	*Yes*	*Yes*	*Yes*

Pseudo R2	0.013	0.023	0.016		
Log-Likelihood	-14839.49	-18985.47	-27339.30		
Wald x^2	379.72	909.12	898.41		
R^2					0.62

Notes: Levels of significance: *** p<0.01, ** p<0.05, * p<0.1. Regression coefficients are reported, with standard errors in parentheses. "Yes" means that the regression includes 7 occupation dummies and 11 industry dummies.

Table IV. Results of ordered logit, negative binomial and OLS models: FWA bundles predicting intensive and extensive work effort (N=13,834)

	Ordered Logit Models		Negative Binomial Model	OLS Model
	Intensive Work Effort		Extensive Work effort	
	Job Strain	Job Tension	Overtime	Working Hours
Variable	**Model 5**	**Model 6**	**Model 7**	**Model 8**
Employee-centered FWAs (z-score)	-0.00	-0.09***	-0.00	-0.18***
	(0.02)	(0.02)	(0.02)	(0.06)
Employer-centered FWAs (z-score)	-0.04**	-0.09***	-0.03*	-0.90***
	(0.02)	(0.02)	(0.02)	(0.06)
Gender	0.14***	0.28***	-0.13***	-1.53***
	(0.04)	(0.04)	(0.05)	(0.14)
Marital status	-0.02	0.01	-0.03	0.55***
	(0.04)	(0.04)	(0.04)	(0.13)
Children under 18 years old	0.14***	-0.01	-0.17***	-0.83***
	(0.04)	(0.04)	(0.05)	(0.15)
Part-time work	-0.10**	-0.43***	-0.57***	-14.77***
	(0.04)	(0.04)	(0.04)	(0.14)
Commuting time	0.00	0.00**	0.00***	0.02***
	(0.00)	(0.00)	(0.00)	(0.00)
Age	-0.00	-0.00**	-0.01***	0.01***
	(0.00)	(0.00)	(0.00)	(0.01)
Education	0.08***	0.08***	0.15***	0.12
	(0.02)	(0.02)	(0.02)	(0.07)
Second job	0.04	-0.03	0.11*	-1.24***
	(0.06)	(0.06)	(0.07)	(0.21)
Job security	-0.24***	-0.24***	0.13***	0.11
	(0.02)	(0.02)	(0.02)	(0.08)
Unionization	0.06	0.12***	0.09**	0.06
	(0.04)	(0.04)	(0.04)	(0.14)
Firm size	0.00	0.02**	0.00	0.16***
	(0.01)	(0.01)	(0.01)	(0.03)
Occupation/ Industry	*Yes*	*Yes*	*Yes*	*Yes*
Pseudo R-squared	0.011	0.021	0.015	
Log-Likelihood	-14860.08	-19026.38	-27366.98	
Wald x^2	338.55	827.29	843.05	
R^2				0.62

Notes: Levels of significance: *** p<0.01, ** p<0.05, * p<0.1. Regression coefficients are reported, with standard errors in parentheses. "Yes" means that the regression includes 7 occupation dummies and 11 industry dummies.

Table V. OLS models for intensive and extensive work effort, moderated by gender, marital status, and children under 18 years old (N=13,834)

	Intensive Work Effort		Extensive Work effort	
	Job Strain	Job Tension	Overtime	Working Hours
Variable	**Model 9**	**Model 10**	**Model 11**	**Model 12**
Employee-centered FWAs (z-score)	0.01	-0.03*	-0.03	-0.15
	(0.01)	(0.01)	(0.07)	(0.09)
Employer-centered FWAs (z-score)	-0.01	-0.04***	-0.26***	-0.79***
	(0.01)	(0.01)	(0.08)	(0.09)
Gender	0.05***	0.16***	-0.37***	-1.53***
	(0.02)	(0.02)	(0.11)	(0.14)
Employee-centered FWAs x Gender	-0.02	-0.05***	-0.08	-0.04
	(0.01)	(0.02)	(0.09)	(0.12)
Employer-centered FWAs x Gender	0.00	-0.01	0.16*	-0.17
	(0.01)	(0.02)	(0.09)	(0.12)
	Model 13	**Model 14**	**Model 15**	**Model 16**
Employee-centered FWAs (z-score)	-0.01	-0.04**	0.03	-0.24**
	(0.01)	(0.02)	(0.09)	(0.11)
Employer-centered FWAs (z-score)	-0.02**	-0.08***	-0.14*	-1.12***
	(0.01)	(0.01)	(0.08)	(0.10)
Marital status	-0.02	0.00	-0.03	0.55***
	(0.01)	(0.02)	(0.11)	(0.13)
Employee-centered FWAs x Marital status	0.01	-0.02	-0.15	0.10
	(0.01)	(0.02)	(0.10)	(0.13)
Employer-centered FWAs x Marital status	0.01	0.06***	-0.04	0.34***
	(0.01)	(0.02)	(0.10)	(0.12)
	Model 17	**Model 18**	**Model 19**	**Model 20**
Employee-centered FWAs (z-score)	-0.00	-0.05***	-0.07	-0.22***
	(0.01)	(0.01)	(0.06)	(0.07)
Employer-centered FWAs (z-score)	-0.01*	-0.05***	-0.21***	-0.94***
	(0.01)	(0.01)	(0.05)	(0.07)
Children under 18 years old	0.05***	-0.01	-0.45***	-0.82***
	(0.02)	(0.02)	(0.12)	(0.15)
Employee-centered FWAs x Children under 18 years old	-0.00	-0.01	-0.04	0.15
	(0.01)	(0.02)	(0.10)	(0.13)
Employer-centered FWAs x Children under 18 years old	0.00	0.04**	0.13	0.16
	(0.01)	(0.02)	(0.10)	(0.13)
Controls	Yes	Yes	Yes	Yes

Notes: Levels of significance: *** p<0.01, ** p<0.05, * p<0.1. Regression coefficients are reported, with standard errors in parentheses. Controls are commuting time, age, education, second job, job security, unionization, firm size, 7 occupation dummies, and 11 industry dummies. Models 9 - 12 include also controls for marital status and children under 18 years old, Models 13 - 16 include also controls for gender and children under 18 years old, and Model 17-20 include also controls for gender and marital status.

Notes

[1] The industry dummies were initially nineteen; however, due to high multicollinearity, we grouped some industries, thus creating twelve rather than nineteen industries.

[2] Given the nature of variables used (i.e., dichotomous variables), CFA is performed in Mplus, as suggested by Muthén and Muthén (1998).

[3] The effects are calculated as [β_{bundle}*1 + $\beta_{bundle*moderator}$ *1*1] for employees with more family responsibilities and [β_{bundle}*1 + $\beta_{bundle*moderator}$ *1*0] for those with fewer family responsibilities.