WORK–NONWORK BALANCE SUPPORTS, JOB DEMANDS, JOB CONTROL, SUPPORTIVE MANAGEMENT AND WELL-BEING

Stephen Wood*, School of Management, University of Leicester, University Road, Leicester LE1 7RH
s.j.wood@le.ac.uk

Kevin Daniels, Employment Systems and Institutions Group, Norwich Business School, University of East Anglia, Norwich Research Park, Norwich NR4 7TJ
Kevin.Daniels@uea.ac.uk
Tel: +44 (0)1603 591180

Chidiebere Ogbonnaya, Eastern Academic Research Consortium, Faculty of Social Sciences, University of East Anglia, Norwich Research Park, Norwich NR4 7TJ
C.Ogbonnaya@uea.ac.uk
Tel: +44 (0)1603 597237

*** Corresponding author**

Use of work–nonwork supports and employee well-being: the mediating roles of job demands, job control, supportive management and work–nonwork conflict

This paper examines the impact of the use of work–nonwork supports on well-being. It first develops hypotheses regarding how a reduction in job demands, and an increase in both job control and supportive management may explain this relationship. We then test these hypotheses using data from Britain's Workplace Employee Relations Survey of 2011. The research reveals that the use of work–nonwork supports has a positive association with job control and supportive supervision. These in turn mediate a relationship between the use of supports and three dimensions of employee well-being, job satisfaction, anxiety–contentment, and depression–enthusiasm, some of the effect being through reducing work-to-nonwork conflict. Use of work–nonwork supports is, however, also positively associated with job demands, but this effect of use on job demands does not affect well-being. Since job autonomy and supportive supervision are major mediators, and have a direct influence on work–nonwork conflict and well-being, policy should focus on integrating job quality and work–life balance issues.

Keywords: Work–nonwork supports, well-being, Job demands, job control, supportive management, job design

Introduction

Organizational supports intended to help employees improve their work–nonwork balance have become increasingly prominent over the past twenty-five years, with some national governments setting minimum standards for employers' provision of such supports (Galinsky & Johnson, 1998; Milliken, Martins, & Morgan, 1998; Osterman, 1995; Wood, De Menezes, & Lasaosa, 2003). These supports typically offer either substitutes for childcare, such as

crèches, or working arrangements that provide for flexibility in the timing and location of work, such as home-working. The arrangements may extend beyond childcare to elder care, and can provide benefits beyond reducing work–family interference; time may be freed for employees to enjoy more leisure, regardless of whether they have caring commitments.

Nonetheless, the assumption remains that the raison d'être of work–nonwork supports is 'to decrease the conflict between work and family demands' (Hammer, Neal, Newsom, Brockwood, & Colton, 2005, p. 799), and their use is expected to have positive effects on the well-being of employees. The public and academic discussion of work–nonwork supports has reflected this and has focused on their role in helping parents juggle the demands of 'care and domestic obligations' (Trask, 2017, p. 3). Work–nonwork supports may also play a significant role in the work domain. In line with the Job Demands–Resources (JD-R) model (Bakker & Demerouti, 2007; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Hoeven & Zoonen, 2015), work–nonwork supports are a resource which may facilitate reductions in the job demands on individuals and increases in the other resources available to the employee.

Job demands are those physical, psychological, social or organizational aspects of the job associated with adverse health and well-being impairments; so any decrease in these is likely to promote well-being through reducing psychological strain. Time pressures are a particularly important component of job demands that are most likely to be attenuated through the use of work–nonwork supports. Job resources in contrast stimulate employees' personal growth and improve their well-being, partly by allowing employees the opportunity to cope better with job demands (Bakker & Demerouti, 2007). Much of the literature on JD-R theory (and more broadly job design) has followed the extended Karasek model (Johnson & Hall, 1988; Karasek & Theorell, 1990; Karasek, Triantis, & Chaudhry, 1982) and highlights the importance of job control and supportive management as core resources for the well-being and motivation of employees. In this paper, we concentrate on these and explore whether job demands, job control

and supportive management may explain any benign influence that work–nonwork supports may have on employee well-being.

A recent meta-analysis by Butts, Casper, and Yang (2012) explored the extent to which work–nonwork supports helped employees reduce their work–nonwork conflict and how this might have a positive effect on employee outcomes. Butts et al. found (p. 1) that use of work–nonwork supports had 'modest effects' on three work attitudes – job satisfaction, affective commitment and intention to quit – and that work–family conflict did indeed mediate this relationship. However, the extent to which this link was explained by changes in the demands and resources of employees was not tested. This reflected the way in which the majority of the work–nonwork supports studies included in Butts et al.'s (2012) meta-analysis examined the effects of work–nonwork supports in isolation from the job resources and demands that may influence employee well-being and work–nonwork conflict (e.g. Brough, O'Driscoll, & Kalliath, 2005; Eaton, 2003; Hammer et al., 2005; for an exception see Thompson & Prottas, 2005).

This omission of job characteristics such as job demands, job control and supportive management, which for convenience we will collectively call the Karasek variables or triad, may be significant for two main reasons. First, these characteristics may represent confounding factors that are correlated with employee outcomes and with the use of work–nonwork supports. The Karasek triad has not only been dominant in predicting well-being but also in predicting work–nonwork conflict (Frone, Russell, & Cooper, 1992; Voydanoff, 2004; Wood & Michaelides, 2016). If job demands, for example, are not controlled for, the modest (or non-existent) relationship found in many studies may be underestimating the relationships between use of work–nonwork supports and employee outcomes. The relationship may be subject to a suppressor effect, whereby the positive effect of using a practice is cancelled out by the negative effect of high work demands.

The second, and more important reason for including the Karasek variables in analysis of work–nonwork supports is that they may play a role in explaining how these supports affect employee outcomes – they may mediate the relationships that Butts et al. (2012) identify. More specifically, we hypothesize that the relationship between the use of work–nonwork supports and well-being is at least partially explained by the role such supports play in reducing job demands and increasing both job control and perceptions of supportive management. The JD-R model recognizes workers' ability to exercise job control over their job and their perceptions of management's supportiveness towards them as general resources. In this paper, we show how they might have specific consequences in the work–nonwork interface. Through affecting job demands, job control, and supportive management, work–nonwork supports may increase employee well-being, but may also play a role in reducing work–nonwork conflict and hence mediate the link between the use of work–nonwork supports and work–nonwork conflict. Since we test these mediated paths, our study also adds potentially significant mediational links in the chain that Butts et al. (2012) explored.

The paper has three objectives. First, to assess Butts et al.'s (2012) finding that the use of work–nonwork supports is positively associated with employee outcomes when job demands, job control and supportive management are controlled for. We focus on employee well-being as the employee outcome, and specifically on one of Butts et al.'s (2012) outcomes – job satisfaction – and two other measures – anxiety–contentment and depression–enthusiasm. Second, to test whether job demands, job control and supportive management mediate the relationship between the use of work–nonwork supports and employee well-being. Third, to examine whether some of these mediating effects might also explain the indirect relationships between use of supports and well-being via family–work conflict – that is that job demands, job control and supportive management mediate the relationship between the use of supports and family–work conflict.

We first introduce the theory behind these questions and the formulation of our hypotheses, and then report a study that tests them using secondary data from a large national survey of employees, Britain.s 2011 Workplace Employment Relations Survey (2011 WERS). The study simultaneously investigates the effects of the use of work–nonwork supports on three measures of well-being – job satisfaction, anxiety–contentment and depression–enthusiasm – and explores the role of the Karasek variables and work–nonwork conflict in explaining the indirect relationships between work–nonwork supports and employee well-being.

The research makes four main contributions to addressing some of the gaps in past research. First, it extends Butts et al.'s (2012) analysis by developing a set of complementary hypotheses regarding the effect of work–nonwork supports on well-being that are firmly embedded in the wider employee well-being literature, and tests whether Butts et al.'s results withstand the inclusion of the Karasek triad as controls, and whether the inclusion of work–family conflict as a mediator of the use of the supports–attitudes relationship needs to be supplemented with other mediators and in particular the Karasek triad. Second, our analysis overcomes a key deficiency of past studies – that the work–nonwork/family and job-design literatures have not been sufficiently integrated – and in so doing adds to understanding of the potential role of work–nonwork supports as instruments of human resource management. Third, the results make a significant contribution to the evidence base on the effects of the use of work–nonwork supports, as they reveal the extent to which such supports do indeed have an effect on employees' well-being through increasing their job control and perception that management is supportive. Fourth, the dataset that we use covers the full range of occupations across the British economy. It thus contrasts with most studies in the work–family area, which have limited sample sizes and are often unrepresentative, many being confined to married personnel. This large and heterogeneous dataset provides the high statistical power required for examining multiple direct and mediated paths, and allows more confident generalization of findings

compared to smaller, more homogeneous samples. Framing the study in terms of the work–nonwork dichotomy also overcomes a further concern that past studies have focused too closely on the family and cohabitants to the neglect of single person households and nonwork activities beyond the family or home (Parasuraman & Greenhaus, 2002).

Theoretical background and hypotheses

Terminology

Organizational supports intended to aid work–nonwork balance are typically referred to as family-friendly, work–family or work–life supports or policies, or simply family-responsive interventions (Bagger & Li, 2014; Hammer et al., 2005; Lewis, Anderson, Lyonette, Payne, & Wood, 2017; O'Driscoll et al., 2003: Roehling, Roehling, & Moen, 2001). Such nomenclature reflects the focus on work and family in the literature on the work–nonwork interface (Demerouti, Martínez Corts, & Boz, 2013). It also reflects the initial aim of these supports: that they should be resources to help reduce the burdens of childcare. The rhetoric surrounding them largely remains centred on caring for children, but increasingly their use may extend to elder care and concerns beyond caring; thus, terms such as work–life balance supports or initiatives have increasingly come into vogue. There are, however, problems with this terminology – for example, if taken literally it implies work is not part of life. For this reason, we prefer the term 'work–nonwork balance supports'; for convenience, we will abbreviate this to 'work–nonwork supports'.

Our focus is on the work–nonwork supports that are increasingly placed under the label of flexible working arrangements (UK Government, 2017; Van Wanrooy et al., 2013, p. 113), which include flexitime, job-sharing, compressed hours and home working. But we use the label work–nonwork supports rather than the increasingly popular flexible working practices

since this may be misleading, as some of these practices focus on the length of work time or time spent in or outside the workplace and are not solely (or at all) concerned with providing employees with more temporal flexibility or control over working time (Nijp, Beckers, Geurts, Tucker, & Kompier, 2012). They may not then increase flexibility for employees. Equally they may not increase employers' flexibility, and titling them flexible working practice simply reflects their divergence from what is (or was in the past) taken to be 'standard' employment, or an assumption that they offer employees more choice.

We will also use the label 'work–nonwork conflict' (Demerouti et al, 2013; Shamir, 1983; Sturges & Guest, 2004; Wiley, 1987), rather than the more commonplace 'work–family conflict' (Frone et al., 1992; Grandey, Cordeiro, & Michael, 2007; Greenhaus & Beutell, 1985) or 'work–home conflict' (Bacharach, Bamberger, & Conley, 1991; Geurts, Krompier, Roxburgh, & Houtman, 2003). This is to allow for the possibility that the effects of the supports go beyond simply aiding caring to include avoiding interference in leisure (Tsaur, Liang, & Hsu, 2013), which may in turn improve recovery from work demands (Sonnentag, 2012) and hence reduce work–nonwork conflict. The more inclusive term also avoids treating parenting as the main nonwork activity, associating work–family conflict with women (Leslie & Manchester, 2011), or any biasing towards married and partnered people. As our focus is on work–related well-being, following the matching theory of the effects of work or nonwork factors on work-related well-being (Amstad, Meier, Fasel, Elfering, & Semmer, 2011; Bryon, 2005), we concentrate on a specific form of work–nonwork conflict, work-to-nonwork conflict, in which work-related factors interfere with the pursuit of non-work activities. We thus formulate our hypotheses in these terms.

We define the Karasek triad as follows. 'Job demands' are requirements to expend physical or psychological effort that are associated with role requirements, expectations and norms (Karasek & Theorell, 1990; Voydanoff, 2004). Examples of job demands include time

pressures and difficult work. 'Job control' (or job autonomy) is concerned with the degree of discretion employees have in their job. Typically, it covers discretion over how and when tasks are executed (Jackson, Wall, Martin, & Davids, 1993). 'Supportive management' is generally taken to be an employee-centred style of leadership that contrasts with a task-oriented style, although the two approaches need not be mutually exclusive. Indeed, line-managers, when making judgements about whether to allow workers to use formal work–nonwork supports, or to aid their work–nonwork integration through informal methods, may take into account the effect (positive or negative) that such actions may have on task performance. In the work–family literature, some studies have focused on a general concept of supportive management or supervision, while others have concentrated on a specific form – support of employees' work–family needs (Allen, 2001; O'Driscoll et al., 2003). In this study, we treat the specific concern for employees' work–nonwork balance as a facet of the more general supportive management approach, and thus incorporate this concern into our measure of supportive management. The elements of supportive management are typically highly correlated – as they are in our data – and we test the theory that the effect of the use of work–nonwork supports extends beyond management's support for employees' needs outside of work to a generalized perception of its consideration for workers.

In our study, we concentrate on employee well-being and not the wider set of employee outcomes that Butts et al. (2012) include in their meta-analysis, such as affective organizational commitment and intention to quit. Consistent with the view that subjective well-being comprises affective experience and summative assessments of satisfaction (Diener, 1984), we focus on employees' job satisfaction – employees' evaluation of their jobs – and job-related affective well-being, defined following the circumplex model on the two dimensions of anxiety–contentment and depression–enthusiasm (Warr, 2007).

Work–nonwork supports and employee well-being

Even if work–nonwork supports, unlike flexitime, do not provide flexibility over working time, they are assumed to provide employees more temporal flexibility or control over the level of working time, either directly or through the location of work (Allen, Johnson, Kiburz, & Shockley, 2013; Beckers, Kompier, Kecklund, & Härmä, 2012; Nijp et al., 2012). As with part-time working or job sharing, work–nonwork supports help employees to reduce hours of work and to free up time for caring, household or leisure activities. Their use may have a direct effect on well-being through enabling employees to more readily create stable household routines (Moen & Wethington, 1992; Morehead, 2001) and develop more consistent and coherent patterns to their lives. Supporting this Halpern (2005) found evidence that employees who were able to alter their working arrangements to suit their personal lives were less likely to report stressful patterns of work. This may mean that employees are able to manage their family obligations and prevent spillover into the work domain, which could otherwise interfere with their work tasks and ability to cope with job demands (Ghislieri, Gatti, Molino, & Cortese, 2017; Hammer et al., 2005; Hoeven & Zoonen, 2015). Using work–nonwork supports may also allow people to choose to work when they have the 'best possible resources and support' and to 'flee from particularly stressful work situations' (Ala-Mursula, Vahtera, Linna, Pentti, and Kivimäki, 2005, p. 851). In line with self-determination theory, any enhanced control over working time may also have positive well-being effects by providing an opportunity for greater self-determination (Beckers et al., 2012, p. 292).

In addition, work–nonwork supports may influence employee well-being indirectly through reducing work-to-nonwork conflict. Allen et al. (2013, p. 349) argue that such supports enhance the discretion employees have 'to determine the way to allocate time, attention and energy resources into [the work] domain versus the [nonwork] domain'. This may enable them not only to have a more optimal normal schedule but also to better cope with divergences from this schedule. For example, the use of work–nonwork supports provides flexibility over unexpected

or disruptive events that make juggling work and nonwork activities more onerous (Montgomery, Panagopoulou, Peeters, and Schaufeli, 2009). Any flexibility offered in the use of work–nonwork supports also plays a role in diminishing the energy needed to manage one's nonwork obligations. For example, flexitime and job sharing arrangements may be used to vary the start and end times of the work day, in order to coordinate work and nonwork demands such as dropping children off at school or attending to an elderly parent. Such flexibility allows employees to maximize recovery time and gain increased satisfaction and contentment from work. In these terms, work–nonwork supports are simply specific supports with either a unique direct effect on employee outcomes after controlling for job demands, control and supportive management or an indirect effect through work-to-nonwork conflict, as in Butts et al.'s (2012) model. We thus test the following hypothesis, controlling for the Karasek triad, in order to assess if Butts et al.'s findings are robust:

Hypothesis 1: The use of work–nonwork supports is positively associated with employee well-being, and this relationship is partially mediated by a significant reduction in work-to-nonwork conflict.

If Hypothesis 1 is supported, it implies that use of work–nonwork supports does create sufficient time flexibility or increased non-working time to positively influence well-being – that such supports enable people to fulfil demands in a more optimal way. However, even if the hypothesis is supported, there may be additional ways in which work–nonwork supports affect well-being, through reducing job demands and enhancing perceptions of job control or supportive management. Alternatively, if the use of work–nonwork supports is not initially correlated with well-being, this may reflect the way that one or more of the Karasek triad mediates the relationship. We will now outline our theoretical arguments on how each element of this triad – demands, control and supportive management – might mediate a work–nonwork supports–well-being relationship.

Work–nonwork supports and job demands

First, we consider the relationship involving job demands, which in both the JD-R model and work–family literature have a negative relationship with well-being. We expect a negative relationship between work–nonwork supports and job demands. While work–nonwork supports allow employees to better accommodate the demands associated with their work and personal lives, they may also aid this through decreasing their work demands. In particular they may reduce the pressures on the time and energy of their users. This may happen through a variety of processes.

First, through employees having a greater control over their time scheduling they are less likely to get behind on their work and hence experience time pressures. This should prevent the build-up of workload by enabling workers to both prioritize and complete core work tasks rather than engage in peripheral activities. Illustrative of this, Halpern (2005) found that by offering time-flexible policies, employers reduced the number of failures to meet deadlines. Second, the use of work–nonwork supports may mean that employees have fewer unexpected interruptions both from work colleagues and from their family and other outside-work relationships: thus their time pressures are reduced and the energy sapping effects of these will be less prevalent. Reducing such interruptions was found in research by ter Hoeven and van Zoonen (2015) to be the only significant type of change in job demands that reduced well-being. Third, supports may reduce the impact on time pressures and energy levels of extra-job factors, for example through reducing commuting times through homeworking or travelling outside rush hours, or offsetting the effects of the work pressures of employees' partners on their fatigue (documented in Watanabe, Torii, Shinkai, and Watanabe, 1993, and suggested by Chatterjee, Clark, Martin and Davis, 2017). Homeworking illustrates the combined effects of these processes well, but they are not confined to this type of work–nonwork support. Being able to work at home one day a week may provide a release from interruptions, the stresses of

workplace politics and a long commute, and enable the employee to concentrate on specific – perhaps urgent – tasks.

Finally there is a perhaps more subtle way in which we might hypothesize that work–nonwork supports will reduce job demands. The very act of using the supports encourages an active coping strategy and the process of opting to use them may in fact be the starting point in the development of such a strategy. Such a coping strategy is in Weigl et al.'s (2010) terms a personal resource that increases employees' self-efficacy and ability to craft their jobs in ways that reduce qualitative job demands and energy depletion (Wrzesniewski & Dutton, 2001). It may also prevent the spillover from the nonwork domain into the work domain that reduces the intensity of job demands. Kelloway, Gottlieb, and Barham (1999) show how coping with family responsibilities without the aid of work–nonwork supports exacerbates time pressures at work.

By reducing both the reality and perceptions of job demands or work intensity, the use of work–nonwork supports will, following JD-R theory, improve employees' well-being. We expect that such reduction will in particular lower employees' experience of energy depletion and hindrance stress, and thus test whether concurrent demands mediate the relationship between supports and well-being:

Hypothesis 2a: The use of work–nonwork supports is positively associated with well-being, and this relationship is mediated by job demands.

A strong current in the recent work–nonwork literature focuses on the mediation of the job demands–well-being (or stress) relationship by work-to-nonwork conflict. It argues that recovery from energy depletion caused by excessive job demands cannot always be completed in the workplace, and that work-related activities at home or demands within the family can constrain recovery from job demands, resulting in work-to-nonwork conflict (Geurts et al.,

2003; Sonnentag & Fritz, 2014; Wood, Michaelides, & Totterdell, 2013). However, the possible role of work–nonwork supports in reducing job demands, which have been identified as a key determinant of work-to-nonwork conflict, has not been included in this recent strand of research. We thus extend the chain in Hypothesis 2a to include the mediation role of work-to-nonwork conflict in the job demands–well-being relationship thus:

Hypothesis 2b: The use of work–nonwork supports is positively associated with well-being, and this relationship is mediated first by a reduction in job demands and in turn by a reduction in work-to-nonwork conflict.

Work–nonwork supports and job control

In addressing the relationship between work–nonwork supports and job control we distinguish job control – concerned with discretion over when and how tasks will be performed, including setting priorities – from discretion over the location and timing of work. These are often combined or conflated in discussing and measuring the control effects of work–nonwork supports (e.g. ter Hoeven & van Zoonen, 2015). The use of supports, as we have seen, may have a direct effect on well-being through reducing the length of time worked in total or spent in the workplace, but we argue that the effect may also be indirect, mediated by job control. In addition, we must acknowledge that an employee's discretion in a job is not fixed or prescribed absolutely by the employer. Job occupants, as active interpreters of their roles (Daniels, 2011), can craft their roles so as to increase their control. Work–nonwork supports can affect both the reality of employees' discretion and their ability to use this discretion to develop their job role.

First, in order to accommodate employees' use of work–nonwork supports – be they job-sharing, flexitime or home working – managers may design work so employees have more discretion over how they prioritize tasks or the methods of fulfilling them. Second, as is most pronounced in home-working, employees may have less contact with their superiors and be

less conscious of them as physical presences in their lives. This may directly affect the level of employees' discretion – clearly there is an element of self-organization required to construct the home- or flexible-working – but having less physical contact with the supervisor may also have subtle effects on employees' sense of autonomy. For example, as employees on flexitime may not regularly arrive at work at the same time as their supervisor they are not reminded first thing every day of his/her controlling presence. They are thus less conscious of his/her role in shaping their work. Third, an element of timing control may make employees more conscious of time and the need to use it effectively. This may in itself create a sense of increased autonomy since, as one respondent in Kelliher and Anderson's study (2008, p. 424) put it, '[through the use of flexible working arrangements] one gets a feeling of really feeling in charge of your life'. If such control results in more effective working, it may also free up energy and time for employees to develop their roles and have what another of Kelliher and Anderson's interviewees (p. 424) called 'thinking time', which in this context has the status of a discretionary activity.

The combination of such factors means that work–nonwork supports should be positively associated with job control. In turn, job control can be assumed to be positively associated with well-being, as JD-R and Karasek models or self-determination theory (Deci & Ryan, 1985) – as providing opportunities to fulfil needs for autonomy, challenge and engagement. We may thus expect job control to have a positive mediating role in the relationship between work–nonwork supports and well-being, and test:

Hypothesis 3a: The use of work–nonwork supports is positively related to employee well-being, and this relationship is mediated by job control.

Moreover, it may be that increasing job control enables employees to reduce work-to-nonwork conflict, as this control enables employees to work more effectively – for example, they can solve problems when they occur and not have to refer to a supervisor, which could

delay matters or lead to conflict. Such processes may also reduce stress, directly or indirectly, thus improving employees' balance between work and nonwork activities. Therefore, we expect:

Hypothesis 3b: The use of work–nonwork supports is positively related to well-being, and this relationship is mediated first by an increase in job control and in turn by a reduction in work-to-nonwork conflict.

Work–nonwork supports and supportive management

Finally, we consider the support dimension of the JD-R model, in which it is seen as a resource. Work–nonwork supports are one form of support, and as such can be placed alongside other forms of personal support. Nonetheless they are not by definition an element of supportive management. First, this is because the provision and use of work–nonwork supports may be seen as part of the workers' rights agenda – for example, in the British case, as an extension of workers' rights as constituted in UK and European Union legislation – or as something that managements implement for their own instrumental reasons, such as retaining scarce skills and reducing recruitment costs. Second, even where they do exist, or are even used, some line managers may discourage employees from using work–nonwork supports, perhaps for operational reasons. There is in fact no relationship between managers' views about whether they or the individual is responsible for employees' work–life balance and employee perceptions of the supportiveness of managers, as measured by the scale we will use (Stokes & Wood, 2016, p. 56).

The issue for our current concerns is therefore whether those who use work–nonwork supports perceive higher levels of supportive management, and whether this helps explain the relationship between use of supports and well-being. We can hypothesize that the use of work–nonwork supports may indeed increase employees' perception that management is supportive

of them.

First, we hypothesize that line managers whose subordinates or peers use work–nonwork supports are more inclined to allow or develop informal arrangements with their staff to aid the integration of work and nonwork obligations. We argue this because the use of work–nonwork supports acts as a signal to managers that the organization values helping workers to cope with such obligations, regardless of whether the employee or employer are perceived to have ultimate responsibility for work–life balance, and therefore managers act in accordance with this organizational norm. Second, we posit that work–nonwork supports also have a symbolic effect on employees, signalling that their employer cares for them and that management is supportive of them (Beauregard & Henry, 2009; Butts et al., 2012; Liu & Wang, 2011; Perry-Smith & Blum, 2000; Roehling et al., 2001; Wood & De Menezes, 2010).

It is commonplace to argue that this symbolic effect extends to all employees, regardless of the level of their use of work–nonwork supports. For example, Grover and Crooker (1995, p. 274) state that 'care for employees may be construed positively by employees regardless of whether they personally benefit' from work–nonwork supports. In the same way, Butts et al. (2012, p. 3) argue that by the use of work–nonwork supports employees gain more knowledge of their benefits, so they obtain more first-hand experience of the employers' level of commitment and caring. As the employee using work–nonwork supports receives support from their manager for their non-standard employment arrangement, their knowledge of management's supportiveness increase compared to the non-user. This effect will augment any general symbolic effect of the provision of work–nonwork supports. More precisely, it reflects a transformation of the symbolic effect as a substitute for real knowledge to a concrete appreciation of management's commitment. It gives greater credence to judgements about whether the employer is returning the employees' commitment and hence adhering to the norm of reciprocity. This not only increases the legitimacy of using work–nonwork supports but also

may mean that managers react flexibly and responsively to any requests the users may have or unexpected contingencies that employees may need to accommodate, and this in turn may add to employees feeling comfortable about using the supports (Voydanoff, 2005, p. 830). This virtuous circle is consistent with a principle of JD-R theory that social supports can serve to protect employees' existing resources and enable them to acquire others. Since social supports serve to protect employees' existing resources, the support of management may reduce feelings amongst users of work–nonwork supports that these may be taken away, and hence any threats to their sense of psychological security and well-being. Finally, we expect that any positive effects that feelings of being supported have on employees' personal resources, such as their self-esteem or that they 'can master or … see through stressful circumstances' (Hobföll, 1989, p. 513) will only apply to users of work–nonwork supports (as found by O'Driscoll et al., 2003).

We anticipate that both the effects of using work–nonwork supports will extend to attitudes towards the collective management of the employee's organization rather than just to each individual's line manager, or perceptions of the entity's attitudes towards helping employees manage the work–nonwork boundary. In turn, there are positive effects on well-being, as people feel that their contribution to the organization is reciprocated by the employer in terms of rewards, respect and recognition, and that their status in the organization is not dissimilar to that of others. This is consistent with the study in New Zealand of O'Driscoll et al. (2003) which found that use of work–nonwork supports was mediated by supportive management (though in this case it is measured by a specific support for work – family balance), and significantly the availability of these supports had no such effect.

We thus hypothesize and test:

Hypothesis 4a: The use of work–nonwork supports is positively related to employee well-being, and this relationship is mediated by perceptions of supportive management.

Again, we expect that the indirect effect of work–nonwork supports on well-being will involve work-to-nonwork conflict. We argue that both the informal arrangements that may supplement or be entailed in the use of supports, and the enhanced perceptions of supportive management, reduce such conflict by enabling more optimum allocation of time and reducing anxieties and any pressures associated with the use of the supports. We thus test:

Hypothesis 4b: The use of work–nonwork supports is positively related to well-being, and this relationship is mediated first by an increase in perceptions of supportive management and in turn by a reduction in work-to-nonwork conflict.

The study

The study aims to test the hypotheses using structural equation modelling and secondary analysis of data from 2011 WERS. The hypotheses imply that the relationships entail concurrent measures and are thus consistent with the use of a cross-sectional research design as adopted in Butts et al.'s (2012) study. The model we are testing is displayed in Figure 1.

– Insert Figure 1 –

The data

Data used are from one element of 2011 WERS: a questionnaire survey of employees completed in the workplaces included in the core element of 2011 WERS, a management survey in which managers were interviewed in workplaces. The fieldwork for 2011 WERS was carried out between March 2011 and June 2012 (see Van Wanrooy et al., 2013, p. 199–216 for technical details of the survey).

The employee-level data for 2011 WERS were collected through a self-completion questionnaire distributed to 25 randomly-selected employees at workplaces where management interviews were undertaken. If the workplace had 25 or fewer employees, all were

asked to participate. The questionnaire concentrated on employees' characteristics, experiences and attitudes to work. The median number of respondents in sampled workplaces was 12, and the range was 5–24. Managers gave permission for interviewers to select a sample for the survey of employees in 2,170 workplaces (81 per cent of those where management surveys were conducted). Interviewers then placed a total of 44,371 questionnaires in these workplaces. 21,981 were returned, which represented a response rate of 50 per cent among all sampled employees.

The sample covers private and public workplaces in all industry sectors. The only areas excluded are primary industry, private households with domestic staff and workplaces with fewer than five employees. It was taken from the Inter-Departmental Business Register, maintained by the UK's Office for National Statistics.

30 per cent of respondents had been working at the workplace for 10 years or more. 56 per cent were female, and 37 per cent were union members. 18 per cent were aged between 16 and 29 years, 49 per cent were between 30 and 49 and 32 per cent were 50 or above. Just over half of respondents (56 per cent) had a university-level qualification, with 9 per cent having no formal educational qualifications. The average number of hours worked, each week by respondents, including overtime and other extra hours, was 35.1.

The measures

Use of work–nonwork supports

This is, following O'Driscoll et al. (2003), an index or formative scale measuring the total use of a set of seven supports: it thus ranges from zero to seven. Respondents were asked: 'In the past 12 months, have you made use of any of the following arrangements: 1) flexitime, 2) job sharing (sharing a full-time job with someone), 3) the chance to reduce your working hours (e.g. full-time to part-time), 4) working the same number of hours per week across fewer days

(e.g. 37 hours in four days instead of five), 5) working at or from home in normal working hours, 6) working only during school term times, and 7) paid leave to care for dependents in an emergency?' Cases with missing values on more than three items were excluded. The majority of employees either used one (35.5%) or no (47.1%) support (mode = 0 and median = 1). This reflects employees' needs and the availability of practices as the majority of workplaces also either had no such supports (26.3%) or only one (24.9%) (mode = 0, median = 1), and in some cases use of one support precluded use of another.

Job demands

This two-item scale captures two core elements of job demands: workload and time pressures. Respondents are asked whether they agreed with two statements: 1) 'my job requires that I work very hard', and 2) 'I never seem to have enough time to get my work done'. Responses were measured on a five-point scale from strongly agree to strongly disagree. Cronbach's α for the scale equals 0.60. The items are adapted from Karasek and Theorell's (1990) measures of psychological job demands in their job content questionnaire.

Job control

This uses a four-item measure (Cronbach's α = 0.86) based on asking respondents to rate on a four-point scale – 'A lot', 'Some', 'A little' and 'None' – how much influence they have over four areas of work: 1) 'the tasks you do in your job', 2) 'the pace at which you work', 3) 'how you do your work', and 4) 'the order in which you carry out your tasks'. The items were adapted from Jackson et al.'s (1993) measure of job control. In 2011 WERS there is a fifth control item on influence over the start and finish of the working day, which we excluded on the basis that it assesses control over work scheduling, rather than timing control.

Supportive management

The supportiveness of management is measured using a five-item measure (Cronbach's α =

0.93), based on a question about the extent to which managers at the workplaces have the following characteristics: 1) 'can be relied upon to keep to their promises', 2) 'are sincere in attempting to understand employees' views', 3) 'deal with employees honestly', 4) 'understand about employees having to meet responsibilities outside work', and 5) 'encourage employees to develop their skills'. The first three items are based on Whitener, Brodt, Korsgaard, and Werner's (1998) measures of trustworthy behaviour (Guest, Brown, Peccei, & Huxley, 2007).

Work-to-nonwork conflict

This measures work-to-nonwork conflict by asking for responses to the statement: 'I often find it difficult to fulfil my commitments outside of work because of the amount of time I spend on my job' on a five-point scale: 'strongly agree', 'agree', 'neither agree nor disagree', 'disagree' and 'strongly disagree'. This measure is adapted from Carlson, Kacmar and Williams' (2000) time-based work/family interference scale.

Employee well-being

We use three multi-item scales, representing job satisfaction, job-related anxiety–contentment and job-related depression–enthusiasm.

Job satisfaction is assessed through respondents' satisfaction with eight facets of work: 1) amount of pay received, 2) sense of achievement obtained from their work, 3) opportunity to develop skills in the job, 4) job security, 5) scope for using their own initiative, 6) amount of influence over their job, 7) training received, and 8) the work itself. Respondents rated their satisfaction on a five-point scale (Cronbach's $\alpha = 0.86$): 'very dissatisfied', 'dissatisfied', 'neither satisfied nor dissatisfied', 'satisfied', or 'very satisfied'.

Job-related anxiety–contentment is assessed using three items from Warr's anxiety–contentment scale (1990), which is based on answers to the question: 'Thinking of the past few weeks, how much of the time has your job made you feel...?', for each of three negative items

– tense, worried, and uneasy. The survey used a five-point scale: 'all of the time', 'most of the time', 'some of the time', 'occasionally', or 'never' (Cronbach's $\alpha = 0.84$).

Job-related depression–enthusiasm is measured using three items from Warr's (1990) depression–enthusiasm scale, which is based on answers to the question: 'Thinking of the past few weeks, how much of the time has your job made you feel...?', for each of three negative items – depressed, gloomy and miserable. The same five-point scale as for anxiety–contentment was used: 'all of the time', 'most of the time', 'some of the time', 'occasionally', or 'never' (Cronbach's $\alpha = 0.90$).

Control variables

The following control variables are included: 1) age, 2) contract type (whether on permanent, temporary or fixed contract), 3) contractual hours (full time or part time), 4) hours worked, 5) gender, 6) ethnicity, 7) marital status, 8) union membership, 9) whether the respondent had a disability, 10) religion, 11) sexual orientation, 12) tenure in the workplace, 13) education (whether respondent has no qualifications, qualifications below formal A-Levels, A-Level qualifications, or a degree-level qualification), 14) child-care responsibilities (using a proxy of age of respondent's youngest child), and 15) sickness/disability care (whether respondent has care responsibilities for family members or friends who have a long-term physical or mental illness or disability, or who have problems related to old age). We include these variables as predictors because they are widely used in studies of employee outcomes and family-work conflict, and have been found to be related to them in a significant number of these (e.g. Bagger & Li, 2014; Brough et al., 2005; Grandey et al., 2007; Lunau, Bambra, Eikemo, Van Der Wel, & Dragano, 2014). The exception is sexual orientation, which has not been included in employment surveys until recently, although it has been shown to affect well-being (Ragins & Cornwell, 2001).

The analysis procedure

We analyzed our data with structural equation modelling (path analysis with latent variables) using Mplus (Muthén & Muthén, 1998-2014). We used sample weights to provide estimates of population-level parameters. To account for non-normality in the data, we used robust maximum-likelihood estimation. Given the large sample size, we judged relationships to be statistically reliable at $p < 0.01$ and marginal at $p < 0.05$. We also used standardized regression coefficients to facilitate comparison between different relationships and to give an estimate of effect sizes for the indirect effects. Preacher and Kelley (2011) propose that indices of effect sizes in mediation models need to meet three criteria: interpretable scaling, independence of sample size, and the ability to create confidence intervals. Of all the indices discussed by Preacher and Kelley, the only index to meet all three criteria in multiple mediation models is standardized indirect effects, which express indirect effects as standard deviation changes in the dependent variable associated with a one standard deviation change in the independent variable.

As participants were clustered in organizations, the responses of individuals within workplaces may not be independent of each other. The strength of clustering in workplaces is not high (the mean number of respondents per workplace is 11.43), but an analysis of the intra-class correlations (the expected correlation between two random individuals from the same workplace) is sufficiently high for all the individual-level variables to require correction for clustering effects, as these ranged from 0.02 to 0.25 for the variables in our hypotheses. This implies that the average responses for these variables would be significantly different between workplaces – indeed, for some variables these correlations account for 25% of the variation in workers' use of work–nonwork supports. To correct for this non-independence of observations in complex samples we used the TYPE=COMPLEX routine in Mplus. This is designed for data solely at the individual level, correcting the standard errors for clustering effects, and is

appropriate as our hypotheses are at the individual level of analysis. Correcting for clustering effects also controls for variables responsible for non-independence of observations, such as industrial sector and workplace size.

Hypothesized relationships were examined through two models, in order to a) provide an estimate of the total effects of use of supports on outcome variables in a single model, and b) test the hypotheses that involve multiple mediations. In the first model, we regressed our respective employee well-being variables – job satisfaction, anxiety–contentment and depression–enthusiasm – on use of work–nonwork supports and on the control variables. The model excluded the measures of job control, supportive management, job demands and work-to-nonwork conflict. This model determines whether use of work–nonwork supports is a significant predictor of employee well-being, and also provides an estimate of the total effect of the use of work–nonwork supports that includes the marginal direct effect in excess of job control, supportive management, job demands and work-to-nonwork conflict, and the indirect effects through job control, supportive management, job demands and work-to-nonwork conflict. The second model estimates the hypothesized relationships. Residuals of the well-being indicators were allowed to correlate with each other in both models, and residuals of the mediators were allowed to correlate with each other in the second structural model. This allows for the importance of interdependencies between different resources and resources and job demands in JD-R theory, as well as Conservation of Resources theory (Hobföll, 1989).. In contrast, not allowing residuals to correlate would be to make an assumption that different resources are not related to each other or to demands, which is not consistent with the JD-R or Conservation of Resources theories.

All hypothesized indirect effects were estimated using bias-corrected bootstrapping (Edwards & Lambert, 2007). Consistent with the approach of MacKinnon and colleagues (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002), mediation effects were judged to

be significant if in a path without work-to-nonwork conflict all three of the following were significant: the path from the independent variable to the mediator (one of the Karasek triad), the path from the mediator to the dependent variable, and the product of the regression coefficients from these two paths. The indirect paths with two mediators – if work-to-nonwork conflict was included – were deemed significant if all four of the following were significant: the path from the independent variable to the first mediator (a Karasek variable), the path from the second mediator (work-to-nonwork conflict) to the dependent variable, the path from the first to the second mediator, and the product of the regression coefficients from these three paths.

Results

Table 1 shows the means, standard deviations, reliability (Cronbach's α) and correlations for all substantive variables. The median number of work–nonwork supports used in the sample is one, with 48% of respondents not using any, 33% using one, and 14% using two.

– Insert Table 1 –

Before running the structural models, we ran a confirmatory factor analysis to ensure items in the scales were indicators of presumed constructs. To estimate latent variables for work-to-nonwork conflict, which is a single-indicator scale, we followed procedures recommended by Hayduk (1987), that is we fixed the factor loadings at one and the residual variance at a non-zero value θ, where θ = (1 – reliability) x sample variance. This factor analysis produced a good fit (χ^2 = 5159.14, df = 233, $p < 0.01$; Comparative Fit Index (CFI) = 0.95; Root Mean Square Error of Approximation (RMSEA) = 0.03). All free factor loadings were significant and in the hypothesized direction ($p < 0.01$). We compared this model to one in which all of the items assessing well-being and the Karasek triad were specified on a single factor, a comparison

known as the Harman test. This single-factor model has, however, poor fit, indicating common method variance is not a significant problem within the data (χ^2 = 49515.06, df = 252, $p < 0.01$; CFI = 0.54; RMSEA = 0.09). We tested two other measurement models which also had a poor fit: in the first, in which the three well-being indicators were specified as one factor and the other variables as separate factors, χ^2 = 68507.49, df = 341, $p < 0.01$; CFI = 0.77; RMSEA = 0.10, while in the second, that specified job demands, job control and supportive management as one factor and the other variables as separate factors, χ^2 = 66279.99, df = 290, $p < 0.01$; CFI = 0.74; RMSEA = 0.10. The poor fit of the three alternative models confirms the discriminant validity of our constructs.

The model fit of our first structural model that involved the well-being indicators, use of work–nonwork supports, and the control variables was good (χ^2 = 3431.31, df = 241, $p < 0.01$; CFI = 0.94; RMSEA = 0.03). After including the control variables but excluding measures of job control, supportive management, job demands and work-to-nonwork conflict, use of work–nonwork supports was associated with job satisfaction (β = 0.11, $p < 0.01$) and depression–enthusiasm (β = 0.07, $p < 0.01$), but not anxiety–contentment (β = 0.00, *ns*). Therefore, this model indicates significant and positive total effects of using work–nonwork supports on job satisfaction and depression–enthusiasm, but no total effect on anxiety–contentment.

The second structural model also had good fit (χ^2 = 6815.33, df = 610, $p < 0.01$; CFI = 0.94; RMSEA = 0.03) (Table 2). When adjusting for the mediators, the relationships between use of work–nonwork supports and job satisfaction and depression–enthusiasm become non–significant (β = 0.00 and β = 0.01, *ns*), suggesting fully mediated relationships. Unexpectedly, use of work–nonwork supports was positively related to anxiety–contentment, such that greater use was associated with lower contentment (β = –0.03, $p < 0.01$). This result suggests the overall null effect demonstrated in the first model reflects two opposing processes that cancel each other out, a positive mediated effect and a negative direct effect.

– Insert Table 2 –

With one exception, work-to-nonwork conflict, job demands, job control and supportive management were all associated with the three well-being indicators in the direction expected (range of βs = 0.03 – 0.55, all $p < 0.01$). The exception was a non-significant relationship between job demands and job satisfaction (β = 0.04, *ns*). Work-to-nonwork conflict was associated with job demands (β = 0.44, $p < 0.01$), job control (β = -0.07, $p < 0.01$) and supportive management (β = -0.16, $p < 0.01$), as predicted. Use of work–nonwork supports was not associated with work-to-nonwork conflict (β = 0.01, *ns*), but was associated with job demands (β = 0.04, $p < 0.01$), job control (β = 0.14, $p < 0.01$) and supportive management (β = 0.13, $p < 0.01$). Although the relationship between use of supports and both job control and supportive management was as expected, the relationship with job demands was in the opposite direction to that predicted.

Because use of work–nonwork supports was not directly related to work-to-nonwork conflict (Table 2), there was no support for the mediation implied in Hypothesis 1. However, there was some support for the other hypotheses as revealed in Table 3, which shows the indirect effects of use of work–nonwork supports on well-being through the hypothesized mediators. For all three indicators of wellbeing, use of work–nonwork supports was mediated by job control (range of indirect effects = 0.01 – 0.04, $p < 0.01$) in a one stage mediation process. We also found evidence of a two-stage mediation, from use of work–nonwork supports through job control and work-to-nonwork conflict, for anxiety–contentment (indirect effect = 0.002, $p < 0.01$) and depression–enthusiasm only (indirect effect = 0.002, $p < 0.01$), although the two-stage indirect effects were small compared to the one-stage mediation effects. There is thus support for Hypothesis 3a and Hypothesis 3b. We also found evidence of a single-stage mediation of use of work–nonwork supports through supportive management (range of indirect effects = 0.04 – 0.08, $p < 0.01$) and, to a lesser extent, a two-stage mediation through supportive

management and work-to-nonwork conflict (range of indirect effects = 0.003 – 0.004, $p < 0.01$). Hypothesis 4a and Hypothesis 4b are thus supported. Nonetheless, the use of work–nonwork supports was not mediated by job demands in any instance (indirect effects = 0.00, *ns*). There was therefore no support for Hypothesis 2a or Hypothesis 2b.

– Insert Table 3 –

Overall, the results suggest complete mediation of the beneficial effects of use of work–nonwork supports on all three indicators of well-being through job control and supportive management. Work–nonwork supports are effective through their effect on two key Karasek variables, albeit only a small amount of variation in job control and supportive management is due to the use of work–nonwork supports (2% and 1% respectively). The effects of supportive management and job control themselves account for a substantial proportion of the variance in the three well-being indicators (some 42% of the variation in job satisfaction, 12% of the variation in anxiety–contentment and 16% of the variation in depression–enthusiasm).

Discussion

The research has assessed the impact of work–nonwork supports on employee well-being, and whether any relationship is mediated by job demands, job control and supportive supervision, and in turn by work-to-nonwork conflict. We thus examined the role of the core factors in the JD-R model in explaining any indirect relationships between the use of work–nonwork supports and employee well-being. Our research showed that use of work–nonwork supports is indirectly related to well-being through job control and supportive management, and in turn, with the exception of a path through job control to job satisfaction, through work-to-nonwork conflict as well. These indirect effects through job control and supportive management were in the positive direction, as expected. There were no indirect effects of job

demands through work-nonwork supports on well-being, contrary to expectations.

The positive indirect relationship found between use of work–nonwork supports and employee well-being via job control suggests that the flexibility or change of working time provided by work–nonwork supports can improve employees' operational control over their jobs, as well as salient aspects of their well-being. We also found evidence that increased job control arising from the use of work–nonwork supports enables employees to reduce work-to-nonwork conflict and achieve important gains in well-being. However, this effect was applicable to only two well-being measures – job-related anxiety–contentment and depression–enthusiasm. Given the sample size, the null effect on job satisfaction cannot be explained by low statistical power and warrants further exploration. As with job control, the indirect effect of use of work–nonwork supports on employee well-being through supportive management was also positive. This positive indirect effect was observed for all three well-being measures. Work–nonwork supports may increase supervisors' willingness to indulge in informal practices and also promote perceptions of the supportiveness of management via a symbolic effect. The use of supervisory support in the form of informal practices is likely to influence well-being through reducing work-to-nonwork conflict.

That the effects of work–nonwork supports are concentrated on resources is consistent with Hobföll's (1989) emphasis on these in his Conservation of Resources theory. Accordingly, if individuals are successful in their striving to gain resources, having one major resource should lead to the accumulation of others, what Hobfoll calls resource caravans (Hobfoll, 2001, p. 349). In Hobfoll's terms, the use of work–nonwork supports is likely to be an act of proactive coping aimed particularly enhancing some resources (e.g., job control) so as to prevent or reduce the loss of time and energy resulting from the work–nonwork interface.

The main result running counter to our hypotheses is that use of work–nonwork supports was associated with greater job demands. This suggests that in workplaces where employees

use work–nonwork supports, such supports may not reduce the level of work–nonwork demands to be equal to that of employees without the needs that precipitate use of such supports. Work–nonwork supports may enable employees to develop more consistent patterns in their lives, but will not eliminate the unexpected disruptive events that create some work demands or increase stress. It may also be that the use of work–nonwork supports merely displaces work demands or high levels of stress from one point in the working week to another. Following social exchange theory, a higher level of demands may also reflect a feeling amongst users of work–nonwork supports that they have to reciprocate the support that the organization has provided them by ensuring they perform to a high level (Siu et al., 2015, p. 308), and that this is reflected in their perceptions of the qualitative demands they face. Quantitative demands may also increase as for example users of supports may take work home more frequently than they would without the support(s), as Schieman and Glavin (2008) found, or the homeworker may find that the interface between work and nonwork becomes more blurred and less segmented. There is though no evidence in the present study that higher demands resulting from use of work–nonwork supports lead to either a decrease in well-being or, through a greater sense of achievement an increase in well-being.

We were not able to test the role of demands as an antecedent of use of supports, as we did not have data for a prior period, but we tested another cross-sectional mediation model in which job demands influence the use of work–nonwork supports, reducing work-to-nonwork conflict and in turn increasing well-being. Although this alternative model had a similar RMSEA to the original model (0.02), the CFI was slightly lower (< 0.94) and the χ^2 was much higher (7572.51, df = 634, $p < 0.01$). Moreover, three information criteria used to compare non-nested models (Akaike, Bayesian and Sample Size Adjusted Bayesian) had outcomes 6% higher for the alternative model, also indicating that the originally hypothesized model was the better fit, implying that use of work–nonwork support practices may lead to greater job demands.

However, this does not rule out the possibility that job demands precipitate use of work–nonwork supports, or that using supports may perpetuate existing high levels of job demands.

We also found that, although there was no significant total effect of use of work–nonwork supports on anxiety–contentment, there was a significant and negative direct effect that was cancelled out by significant and indirect positive effects through job control and supportive management. The positive indirect effects are consistent with our conceptual model, but the negative direct effect is inconsistent with expectations. It is, however, consistent with our earlier social-exchange theory argument that users of work–nonwork supports may feel that they have to reciprocate the organization's support by performing at a high level and they are conscious that they may be thought to be less committed to the organization; this leads to some anxiety about whether users can achieve perform at a high level and are seen to be doing so. This negative direct effect of use of work–nonwork supports on anxiety–contentment could warrant further investigation.

We also tested alternative models in which our mediators were moderators of the relationship between the use of supports and well-being. For example, does use of supports increase well-being only in a supportive environment, or where demands are low or employees have high discretion? The analysis revealed no such moderations because most interaction relationships were not significant, and where they were the pattern of these interaction relationships was not readily interpretable or consistent with theory. The lack of significant interactions is consistent with much research on job control, support and job demands (Häusser, Mojzisch, Niesel, & Schulz-Hardt, 2010).

This study has a number of theoretical implications. First, it confirms that work–nonwork supports have effects for their users, but that these effects are indirect and transmitted through other enhancements to the experience of work, namely job control and supportive management. The lack of a direct effect suggests that the effect of work–nonwork supports on time

scheduling is not significant. Second – perhaps the most innovative aspect of the research – the finding that job control or autonomy is affected by work–nonwork supports reinforces the importance of bringing job quality and work–nonwork/family studies closer together. Allied to this, our results reinforce calls to ensure job control is included in studies of so-called 'best human resource management' or 'high-performance models' (Wood & Wall, 2007). The strong effects of supportive management on both well-being and work-to-nonwork conflict observed in this study also reinforce the essence of human relations theory. Third, the finding that the use of work–nonwork supports may increase job control and supportive management strengthens the argument that job characteristics are not fixed structural phenomena and we need dynamic models of job design, in which it is influenced by organizational factors as well as the behaviours of role holders (Daniels, 2011).

The mediation paths from use of work–nonwork supports through job control and supportive management to well-being are not as strong as those simply from job control and supportive management through work-to-nonwork conflict to well-being, but they may be strong enough to ensure that across the whole economy work–nonwork supports have some effect. Some employees who might otherwise be at a potential tipping point in their stress may be saved from mental or physical health problems through the use of practices, particularly if this high level of stress was affected by work-to-nonwork conflict. Equally the changes in resources may tip people away from levels of exhaustion or anxiety that are inhibiting their performance and engagement. Such examples of potential substantive effects illustrate the point that we should not 'equate effect size with practical importance' or be dismissive of small effects (Preacher & Kelley, 2011, p. 108).

The strong effects of both job control and supportive management on work-to-nonwork conflict, over and above changes in these induced by the use of work–nonwork supports, suggest that they should be treated, theoretically and in policy, as work–nonwork supports in

their own right. But while in some cases, especially amongst managers, job autonomy and control over time go hand in hand, and 'may diminish the reliance on formal policies to enhance a balance' (O'Driscoll et al., 2003, p. 340), our research suggests that some such discretions may only be generated through formal supports. Equally, while in some cases supportive management may be a substitute for formal policies as it may result in informal arrangements for management of work–nonwork support, our research suggests that we should not rely on such informal arrangements.

The main policy implication of our findings for human resource management is that work–nonwork supports should be adopted and their use encouraged where appropriate. They are a readily implementable means by which an employer can support – and be seen to be supportive of – employees' needs, and improve the support and job control they experience. They also add to our understanding of how job characteristics can be improved, and are thus in line with calls for a more conscious approach to job design and a reinvigoration of the quality of working life research (Grote & Guest, 2017). The study's negative finding that work–nonwork supports do not significantly reduce job demands is also important in reinforcing the argument that we need to emphasize more strongly the effects of their use on job control and supportive management; otherwise the danger is that supports may be seen as having little value on the grounds that they are not achieving their expected primary goal of reducing conflicts between high work and nonwork demands highlighted by Hammer et al. (2005).

The finding that use of work–nonwork supports may not reduce job demands does, however, make it more important that we ensure that using work–nonwork supports has positive effects on employees' job control, and that perceptions of supportive management are underpinned with tangible organizational policies. We can also tackle directly the adverse effects of job demands on well-being, a relationship that is central to the JD-R tradition of research on psychological strain. Policies other than providing work–nonwork supports or redesigning jobs

may also be effective for managing demands and increasing perceptions that management cares for employees, for example training managers to be more supportive of workers' family and caring demands (Odle-Dusseau, Hammer, Crain, & Bodner, 2016) and to be more knowledgeable about the range of circumstances their employees face (O'Driscoll et al., 2003, p. 342).

The study has a number of strengths. It is based on a large representative national dataset covering all sectors of the economy bar agriculture, mining and domestic service, and the full variety of employees in terms of occupations, ages, domestic arrangements and sexual orientations. Although the survey was not designed specifically for our research questions it contains the appropriate range of job characteristics, work–nonwork supports and employee outcomes (including work-to-nonwork conflict) required to cover key work–nonwork issues. Our tests of the mediation effects of the Karasek triad control for each other's effects.

The data set's main limitation is that it is based on a cross-sectional design, and thus we cannot conclude that the associations we found are causal. The data are based on the reports of single respondents, and although our Harman test suggested common-method variance was not a significant problem within the data, an element of this cannot be completely ruled out as a cause of some of the covariation. However, two other factors may have further reduced the likelihood of significant common-method variance. First, the scales we used were based on items using different response formats (Podsakoff, MacKenzie, & Podsakoff, 2012), and second we used multivariate models rather than a simple assessment of bivariate relationships (MacKinnon & Pirlott, 2015). Employees are the best source of information on their use of work–nonwork supports, and supportive management and work–nonwork conflict are perceptual variables; so any attempt to use multiple sources of data would entail gaining objective ratings of the employee's demands and control, or those of other actors. The added benefit of this is uncertain, and may not justify the cost.

Longitudinal data are required if we are to explore whether the value of our mediators prior to the use of work–nonwork supports influences their use, and the extent of subsequent changes in the mediators. We could for example test, if high demands at time t_1 are the reason for using supports, whether there is a reduced level of demands at time t_2. We could also examine if job autonomy at time t_1 is negatively related to the use of supports at time t_2, as those with high task autonomy can more readily adjust their working schedules informally. Longitudinal analysis could also assess the extent to which resource-gain spirals develop after the use of work–nonwork supports as users enhance their resources, for example, increasing job autonomy leads to an increase in personal resources, which in turn enables users to better confront job demands or even take on more demands. We could also include a measure of the segmentation between work and nonwork and hence examine if work–nonwork segmentation moderates the relationships we have investigated or whether when a person changes their use of work–nonwork supports, this segmentation increases or decreases. For example, Spieler, Scheibe, Stamov-Roβnagael and Kappas (2017) found that the use made of flexitime strengthened the boundaries between work and nonwork. Diary or experience-sampling studies, which yield large data sets with a small amount of participants, are a particularly good way of addressing such questions, and more generally of developing a more dynamic approach to the work–nonwork interface (Sonnentag & Fritz, 2014; Wood & Michaelides, 2016).

Some may question the use of the single-item measure of work-to-nonwork conflict, but such measures have been used elsewhere (e.g. Voydanoff, 1988) and may match the way respondents summarize their own experiences of coping with the work–nonwork interface conflict. Our measure of work-to-nonwork conflict was focused on time-based conflict, as inclusion of stress-based conflict could have overlapped with the well-being measure. However, it may have captured an element of stress-based conflict, since if the use of supports and job autonomy increases the effectiveness of work, it may reduce time spent at home worrying about

work, and hence reduce perceptions that time spent on work interferes with nonwork. The measure of work-to-nonwork conflict has the advantage that it avoids integrating antecedents or causal factors into the measurement of interference, which some measures do through incorporating hypothetical causes in the wording of their items' questions (Demerouti et al., 2013; Pichler, 2009; Tetrick & Buffardi, 2006). The use of single-item measures also reflects the practical constraints on the study, which required high response rates to both management and employee surveys, and the fact that it was a costly project aiming to achieve a large sample and to cover a broad range of employment matters, only one of which was the work–nonwork interface.

It may yet be argued that the fourth item in the supportive management scale, relating to whether management 'understand about employees having to meet responsibilities outside work', is too focused on the work–nonwork domain, and may bias the correlation between this scale and the use of work–nonwork supports scale. Our earlier theoretical argument implies this ought not to be the case. Nevertheless, we tested the hypotheses with this item excluded as an indicator of management support, and found that the results were the same.

Conclusion

This study has shown that employees' use of work–nonwork supports has an effect on employee well-being through the effect of these supports on their job control and experience of supportive management. The results also add to the many studies showing the benefits of the provision of job autonomy for all employees by suggesting that such autonomy improves work-life balance in a way that is beneficial for employers and employees. From the smaller volume of research on autonomy's performance effects, we also know it can have positive effects on organizational performance (e.g. Wood, Van Veldhoven, Croon, & De Menezes,

2012). In addition, the way in which management treats workers – with fairness, respect and support – has once again been shown to have beneficial effects on employees' well-being. In the case of work–nonwork supports, their use may increase the extent to which employees feel supported and that the organization cares about their welfare.

Finally, we should bear in mind that the workplace level work–nonwork supports we have studied are surrounded by Britain's national policies that set minimum standards for maternity, paternity and parental leave, as well as flexible working. Research is required in other countries, not simply to test if our findings are replicated elsewhere, but also because of national differences in statutory provisions. A replication of our study within the US and Canada would be especially fruitful as although they are, like Britain, liberal-market economies, their statutory provisions differ from Britain. Equally, comparisons with – and between – countries with either Scandinavian or Mediterranean regimes (Lunau et al., 2014) would be timely.

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Table 1. Means, Standard Deviation (SD), Cronbach's alpha (α) and inter-correlations between study variables

	Mean	SD	1	2	3	4	5	6	7	8
1. Job satisfaction	3.52	0.73	.77							
2. Anxiety–calmness	3.74	0.92	.39**	.84						
3. Depression–enthusiasm	4.16	0.97	.53**	.74**	.90					
4. Job demands	3.69	0.81	-.04**	-.36**	-.22**	.60				
5. Job control	3.05	0.75	.46**	.13**	.22**	.04**	.83			
6. Supportive management	3.40	0.93	.65**	.35**	.47**	-.08**	.32**	.93		
7. Work-to-nonwork conflict	2.77	1.12	-.21**	-.38**	-.33**	.35**	-.08**	-.23**	--	
8. Use of work–nonwork supports	0.80	1.00	.10**	-.01*	.05**	.06**	.17**	.12**	-.02**	--

*N = 21981 * p < 0.05, ** p < 0.01. Cronbach's alpha shown on primary diagonal*

Table 2. Standardized regression coefficients of the effects of predictor variables on well-being, work-to-nonwork conflict and mediators

Criterion	Job satisfaction	Anxiety – contentment	Depression– enthusiasm	Work-to-nonwork conflict	Job demands	Job control	Supportive management
	β	*β*	*β*	*β*	*β*	*β*	*β*
Work-to-nonwork conflict	-0.10**	-0.19**	-0.17**				
Job demands	0.04	-0.37**	-0.19**	0.44**			
Job control	0.29**	0.06**	0.10**	-0.07**			
Supportive management	0.55**	0.28**	0.40**	-0.16**			
Use of work–nonwork supports	0.00	-0.03**	0.01	0.01	0.04**	0.14**	0.13**
R^2	54%**	44%**	39%**	38%**	14%**	7%**	9%**
ΔR^2 over controls	49%	35%	32%	22%	0%	2%	1%

*N = 18448 * p <0 .05, ** p <0 .01*

Models also include the following predictors: age, gender, ethnicity, caring demands (children), caring demands (sickness/ disability), presence of disability, qualifications, religion, sexual orientation, marital status, organizational tenure, union membership, permanent employment contract, contracted hours and total hours worked.

Table 3. Indirect effects of use of work–nonwork supports and job and caring demands on well-being

Paths	Indirect effect
H1. Use of work–nonwork supports → Work-to-nonwork conflict → Job satisfaction	--
H1. Use of work–nonwork supports → Work-to-nonwork conflict → Anxiety–contentment	--
H1. Use of work–nonwork supports → Work-to-nonwork conflict → Depression–enthusiasm	--
H2a. Use of work–nonwork supports → Job demands → Job satisfaction	0.00
H2a. Use of work–nonwork supports → Job demands → Anxiety–contentment	0.00
H2a. Use of work–nonwork supports → Job demands → Depression–enthusiasm	0.00
H2b. Use of work–nonwork supports → Job demands → Work-to-nonwork conflict → Job satisfaction	0.00
H2b. Use of work–nonwork supports → Job demands → Work-to-nonwork conflict → Anxiety–contentment	0.00
H2b. Use of work–nonwork supports → Job demands → Work-to-nonwork conflict → Depression–enthusiasm	0.00
H3a. Use of work–nonwork supports → Job control → Job satisfaction	0.04**
H3a. Use of work–nonwork supports → Job control → Anxiety–contentment	0.01**
H3a. Use of work–nonwork supports → Job control → Depression–enthusiasm	0.01**
H3b. Use of work–nonwork supports → Job control → Work-to-nonwork conflict → Job satisfaction	0.00
H3b. Use of work–nonwork supports → Job control → Work-to-nonwork conflict → Anxiety–contentment	0.002**
H3b. Use of work–nonwork supports → Job control → Work-to-nonwork conflict → Depression–enthusiasm	0.002**
H4a. Use of work–nonwork supports → Supportive management → Job satisfaction	0.08**
H4a. Use of work–nonwork supports → Supportive management → Anxiety–contentment	0.04**
H4a. Use of work–nonwork supports → Supportive management → Depression–enthusiasm	0.06**

Table 3 continued

H4b. Use of work–nonwork supports → Supportive management → Work-to-nonwork conflict → Job satisfaction	0.003**
H4b. Use of work–nonwork supports → Supportive management → Work-to-nonwork conflict → Anxiety–contentment	0.004**
H4b. Use of work–nonwork supports → Supportive management → Work-to-nonwork conflict → Depression–enthusiasm	0.004**

-- indicates not significant on constituent path

** $p < 0.05$, ** $p < 0.01$ Significance judged through bias corrected bootstrapped confidence intervals.*

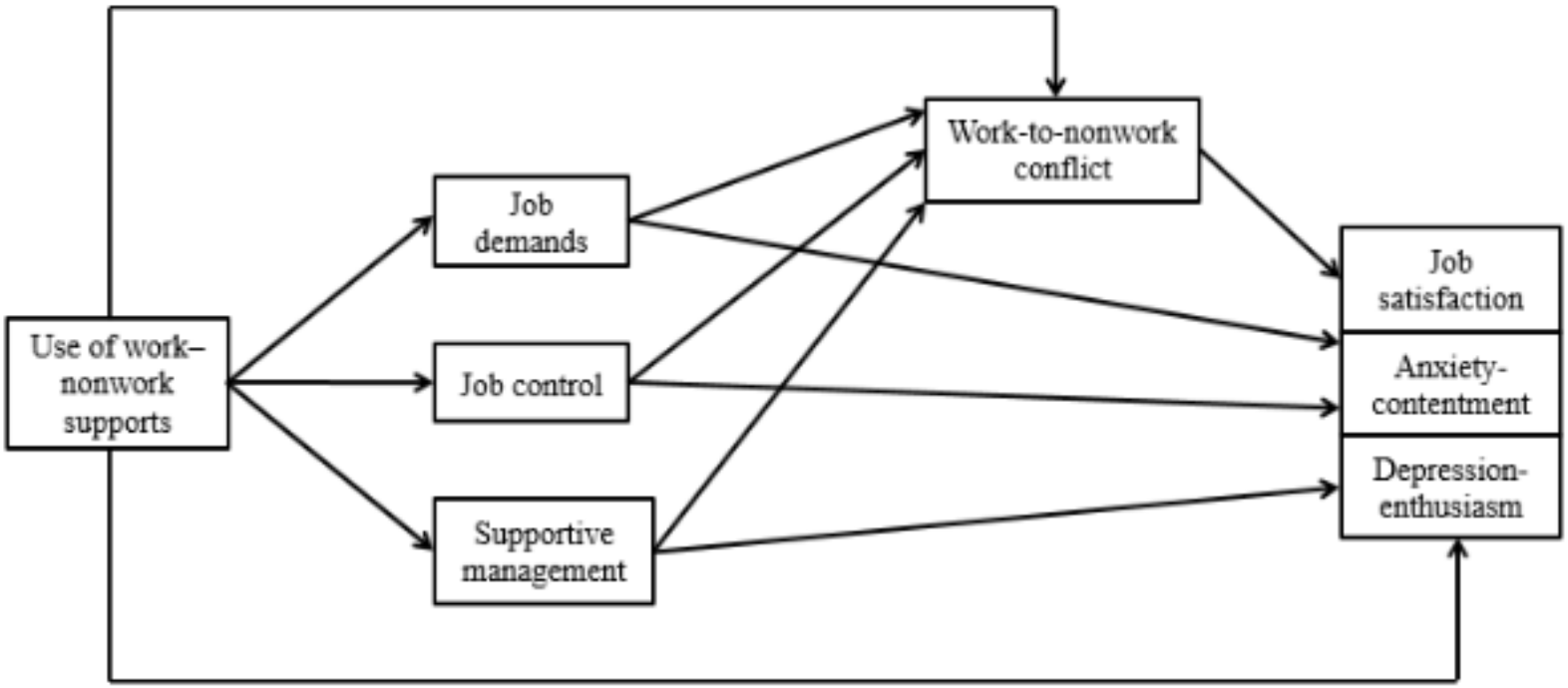

Figure 1: Model of direct and indirect paths from use of work–nonwork supports to employee well-being