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FLEXIBLE WORKING AND PERFORMANCE: a systematic review of the evidence for a business case

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ABSTRACT

Interest in the outcomes of flexible working arrangements dates from the mid 1970s, when researchers attempted to assess the impact of flexitime on worker performance. This paper reviews the literature on the link between flexible working arrangements and performance related outcomes. Taken together, the evidence fails to demonstrate a business case for the use of flexible working arrangements. This paper attempts to explain the findings by analysing the theoretical and methodological perspectives adopted, as well as the measurements and designs used. In doing so, gaps in this vast and disparate literature are identified and a research agenda is developed.

Keywords: flexible working arrangements, performance, employee outcomes, systematic literature review.

Introduction

The benefits of flexible working, which accommodate employees' preferences and needs, have been widely advocated in UK government reports (see for example DTI 2005) and in information directed at employers and employees (e.g. Business Link: http://www.businesslink.gov.uk/). In 2003, parents of young and disabled children in the UK gained the legal right to request flexible working, which was subsequently extended to carers in 2007 and to parents of children under 16 in 2009. Yet, beyond this "family-friendly" approach, a wider argument has developed, which proposes that a real business case exists for flexible working arrangements and as such advocates that they should be made available to all employees (CIPD 2005). It is argued that flexible working arrangements can contribute either directly or indirectly to improvements in individual and/or organisational performance and therefore would be good for business. More generally, concerns for the health and well-being of the population have intensified interest in flexible working arrangements, since they may also reduce expenditure on health and welfare (Department for Work and Pensions 2005, 2006; Baptiste 2008; O'Reilly 2008; Verbakel and DiPrete 2008). In the practitioner literature support for a business case for flexible working can be found in reports (e.g. Friedman 2008), electronic magazines (http://www.flexibility.co.uk/), and recommendations on government websites (http://www.direct.gov.uk/en/Employment/Employees/WorkingHoursAndTimeOff/DG_10029491). By contrast, a clear link between flexible working arrangements and organisational performance is yet to be established in the academic literature. For example, a large study of firms in the UK, France, Germany and the USA (Bloom and Van Reenen 2006) concluded that there was no direct association with performance, but that flexible working arrangements have merit because they are popular with employees and do not represent a large cost to employers.

Large surveys, such as the Workplace Employment Relations Series and the Work Life Balance Study (Kersley *et al.* 2006; Hooker *et al.* 2007; Nadeem and Metcalf 2007), show significant increases in flexible working arrangements being offered. Whilst in the UK employers have legal obligations to certain employees, many have chosen to offer FWAs to all employees, thus suggesting that they have reasons, other than legislation or institutional pressures, to offer flexible working arrangements. Ortega's (2009) analysis of the Third European Working Conditions Survey (Paoli and Merllie 2001) concluded that European firms essentially give discretion to employees over their working arrangements in order to improve their performance, rather than to attend to family concerns.

Given an unstable economic climate where the work-life balance agenda may be downplayed, it is important to assess the extent to which a real business case for flexible working arrangements that are designed to accommodate employees' preferences exists. This paper reports findings from a systematic review of the literature examining the link between flexible working arrangements and both organisational and individual performance. Findings from 148 publications are considered, most of which are academic papers, but some are from the 'grey' literature (e.g. reports from government departments, research and commercial organisations). Our aim is to identify trends in the literature and to explain the evidence found.

In the next sections we describe the systematic review, present a summary of the evidence and attempt to explain the findings and limitations of extant studies. We address gaps in the literature, outline a research agenda and discuss the challenges we foresee.

The Systematic Review

The review aims to provide a rigorous assessment of the literature on flexible working arrangements and their link with various direct and indirect indicators of performance, in order to allow the business case for offering flexible working arrangements to be assessed. Systematic review has been traditionally used in the medical sciences, but has been increasingly adopted in the management literature. Systematic reviews differ from traditional narrative reviews by using a replicable, scientific and transparent process that aims to minimize bias through exhaustive literature searches. They also differ from meta-analyses, which focus on empirical studies and specifically on the aggregate correlation structure of their data (Tranfield *et al*. 2003). Moreover, a systematic review is not a content analysis (e.g. Eby *et al.* 2005), in which exploratory and predictive studies are classified according to their main content and themes. The systematic review process can be described as: *"A review of the evidence on a clearly formulated question that uses systematic and explicit methods to identify, select and critically appraise relevant primary research, and to extract and analyse data from the studies that are included in the review"* (NHS Centre for Reviews and Dissemination 2001).

Methodology

A systematic review is guided by a review question, from which keywords for the database searches are defined. In this study, the review question was: 'What is the relationship between flexible working arrangements and performance or related outcomes?' Flexible working arrangements (FWAs) were defined as working arrangements which allow employees to vary the amount, timing or location of their work. Specifically, we included arrangements that involve employees working remotely from the workplace (often termed teleworking), or at times which differ from the standard hours for the workplace (e.g. flexitime and compressed working

time) and where employees have chosen to reduce the amount of time they are contracted to work.

Given that we were concerned with circumstances where employees can exercise choice over their working arrangements, it was important to include not only formal arrangements, but also those of an informal or ad hoc nature, since as Healy (2004) observed, in practice, much flexible working is informal. In selecting studies, we focused on flexibility *for* employees, rather than those concerned with flexibility *of* employees (Alis *et al.* 2006). Consequently, studies of FWAs imposed by employers, in order to match the supply and demand for labour more closely (Atkinson 1985) and which are not designed to accommodate employees' preferences (e.g. Bertolini 2002; Fullin 2002; Cooke *et al.* 2008; Zeytinoglu and Cooke 2002), were excluded. Studies on other family-friendly policies (e.g. childcare benefits), or on practices that do not involve a regular working arrangement (e.g. career breaks, sabbaticals) were also excluded. We recognise, however, that the notion of choice for employees may not be straightforward (Tomlinson 2007). The question arises over the extent to which real choice is open to the employee (Caprioni 2004; Gregory and Milner 2009), since the notion of choice assumes control and thus needs to be seen in the context of gender, workplace culture and norms (Lewis 2003; Lewis *et al.* 2007). Employees' choice to alter their work patterns may be constrained by caring responsibilities, or beliefs about future consequences for career progression (Romaine 2002). In some cases, choice could be about how rather than whether to change working arrangements. For example, where a scheme to allow remote working is accompanied by a reduction in office space, employees may choose patterns of remote working which suits them, but not whether to work remotely (Anderson and Kelliher forthcoming).

Performance related outcomes were defined at the individual and organisational levels, and include measures of financial performance, productivity, labour turnover, absenteeism, organisational commitment and job related well-being. Whilst there is substantial literature on the relationship between FWAs and work-family conflict (e.g., Anderson *et al.* 2002; Madsen 2006; Frye and Breaugh 2004; Batt and Valcour 2003; Dunham *et al.* 1987; Eby *et al.* 2005; Lapierre and Allen 2006; Golden *et al.* 2006) and work-life balance (e.g. Dex and Scheibl 2002; Shockley and Allen 2007; Campbell-Clark 2001), it is not the focus of this review. The link between different measures of work-family conflict and performance is less well-established, although some authors have associated them with job satisfaction and/or organisational commitment (Wiley 1987; Burke 1988; Gray 1989; Boles and Babin 1996; Brough *et al.* 2005; Karatepe and Tekinkus 2006; Allen *et al.* 2000; Hughes and Bozionelos, 2007; Purcell *et al.* 2003).

From our definitions and the review question, key concepts were identified to form the basis of the database searches. The keywords were then selected following discussion between the authors and a review of a number of abstracts from relevant papers (Centre for Reviews and Dissemination 2009). The databases searched were EBSCO, ProQuest and PsychINFO, which were judged to cover the relevant literature. All keywords are shown in Table 1: each keyword from box A was combined with each of those from boxes B or C to create 900 search strings for the database searches, which were conducted during the period June-July 2008. Further searches used Google to identify grey literature, such as reports published by commercial or government organisations. Cross-referencing between these two types of searches yielded other articles, which were considered for inclusion in the review. In addition, the ISI Web of Knowledge was searched as a means of establishing the significance and evolution of the literature (e.g. via

citation maps and analyses tools). These supplementary searches resulted in other articles, including an annotated bibliography, being included in our sample of literature to be reviewed[1]. Abstracts were used as the initial base for selecting academic papers.

Insert Table 1 here

In total 256 pieces of literature were included in the initial sample. Some were subsequently excluded because they focused on employer driven FWAs, or were primarily concerned with work-life conflict and lacked a performance focus. In some cases, the lack of fit with our objective could be identified from the title and/or abstract, however, it was sometimes necessary to read the article in order to ascertain its suitability. Judgements about inclusion were then made based on the description of the working scheme and the literature referred to in the article. Finally, 148 were selected on grounds of relevance to the research question, theoretical and methodological rigour (Anderson *et al*. 2001): 112 were empirically based, 17 were theoretical, 11 were literature reviews, 7 were meta-analyses and 1 was an annotated bibliography. Data were extracted and synthesised, by focusing not only on addressing the review question, but also on recording the measures (A, B and C of Table 1) and methodologies used, research findings, limitations and conclusions.

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Individual papers were searched using the ISI Web of Knowledge during the period July 2008-July 2009. Those articles that were very highly cited, as judged by "Times Cited" greater than 100, provided lists of the articles that had referred to them, thus leading to additional literature being identified. If these articles were published before 2009, they were included in the sample of articles to be reviewed.

In addition, we continued to monitor studies that were published while this article was in preparation. The ISI Web of Knowledge was used to track the most influential articles and developments in the related literatures concerned with the assessment of the business case for flexible working arrangements. Articles published post 2008 are included in our discussion where they add new perspectives, or assist in the evaluation of the findings and in the development of the research agenda.

General observations on the literature

Although the literature dates back to the 1970's, research interest intensified in the 1990's, when large scale empirical studies were conducted, reflecting a concern not only with direct performance outcomes, but also with work-life issues and health outcomes. By the end of the 1990's, a few meta-analytical and review studies emerged, indicating a more general concern with the potential consequences of FWAs. The majority of studies were conducted in Western Europe and North America.

The extant literature falls into several categories. First, there is a body of literature that explores the association between FWAs and some measure of organisational performance (e.g. Dex and Smith 2002; Hannah 1994; Wood *et al.* 2003). Second, there is research that examines the link between FWAs and employee performance (e.g. Eaton 2003; Kossek and Ozeki 1999; Skyrme 1994; Stavrou 2005). Third, there are studies that investigate the association between FWAs and attitudinal outcomes (e.g. Almer *et al.* 2002; Kraut 1989; Scandura and Lankau 1997; Thompson *et al*. 1999), which have been shown elsewhere to impact on organisational performance (e.g. Boxall and Purcell 2003; Paauwe 2004). In addition to these, there is a stream of work concerned with general health and well-being (e.g. Schmidt and Duenas 2002; Thomas

and Ganster 1995). Finally, few studies (e.g. Konrad and Mangel 2000; Chow and Keng-Howe 2006) have considered both direct and indirect links to performance or contingent factors (e.g. Martinez-Sanchez *et al.* 2008; Shockley and Allen 2007).

Across the studies, different terms have been used to describe the changes to standard working arrangements. For consistency, we use the following terms: remote working, schedule flexibility, compressed working time and reduced hours. These are used in a broad sense to include arrangements whereby employees have some discretion to vary their place of work, the timing of their working hours (including carrying out their contractual hours in a fewer number of days than is normal for their workplace) and the number of hours they are contracted to work. We will only deviate from these terms when the actual terms used in a study add important detail to our analysis. Table 2 illustrates the different definitions (column 2) and measures (column 3) of FWAs. It is noteworthy that often there is insufficient information on context to allow the extent of real choice, which was available to employees, to be assessed. In the last column, examples of articles are provided. Overall, there is a lack of consensus on measures and definitions.

Insert Table 2 here

Table 3 summarises the evidence relating to each performance outcome considered in this review. First, we can observe that certain outcomes have been intensively more researched, namely: individual performance; job satisfaction; absenteeism; and turnover/retention. Second, support for a link with performance has been most commonly found in relation to absenteeism (negative correlation) and job/work satisfaction (positive correlation). Concerning organisational

performance, the most common finding was no association. Overall, few studies reported a decrease in performance. We now examine the evidence in more detail.

Insert Table 3 here

Since our primary objective is to establish the evidence on performance, findings are reported according to type of outcome: (1) organisational outcomes (e.g. financial performance, productivity, absence and labour turnover); (2) individual performance (productivity, performance ratings, quality of work etc.) and (3) attitudinal and well-being outcomes. For each type of outcome, first we examine the studies that combined FWAs and then we consider specific FWAs. In addition to empirical studies, we include meta-analyses and literature reviews.[2] The literature is treated in broadly chronological order, but emphasis is placed on studies that were more frequently cited (ISI Web of Knowledge at January 2009), meta-analyses and more recent, large empirical investigations.

The direct association with organisational performance

A series of studies on the relationship between FWAs and organisational performance have been reported in both the academic and practitioner literatures with disparate findings. Whilst this may, at least in part, be due to the diversity in research designs, to date the empirical evidence has largely failed to demonstrate a well-supported and generalisable relationship.

Measures of organisational performance included financial measures, such as profit and return on investment, productivity, labour turnover/retention and absenteeism. In the main,

measures were based on perceptions of managers or employees, with less than a fifth of the studies using an objective measure. Large scale data sets have been used to examine the relationship between the provision of FWAs and organisational outcomes. Wood and de Menezes (2007) used the UK 1998 Workplace Employee Relations Survey (WERS98) and found no significant direct association between family-oriented flexible management (an orientation that is reflected by making FWAs available to employees) and a range of subjective measures of workplace performance. However, Whitehouse *et al.* (2007) using the 2004 Workplace Employee Relations Survey (WERS2004) panel data, which include similar measures, found a positive association between the availability of FWAs and perceived financial performance. Konrad and Mangel (2000) examined the impact of work-life programmes (which included 6 FWAs) on firm productivity in 195 firms in the USA and found the impact on productivity to be contingent on employee characteristics. Where a higher proportion of professionals and women were employed, the relationship between the provision of FWAs and productivity was stronger.

Studies that examined the impact of specific FWAs on profit have found distinct effects. For example, Meyer *et al.* (2001) showed remote working from home to be positively associated with profit. However, they also found job-sharing to be negatively associated with profit and other FWAs to be unrelated. Remote working has been shown to be positively related to return on assets and equities, where at least 10% of employees use the arrangement (Sands and Harper 2007). It is noteworthy, however, that both studies were based on companies which were award winners in 'Best/Great places to work' competitions and recognised as being family-friendly, consequently these findings may not be generalisable. In similar circumstances, a case study of

[2] Whilst our systematic review aimed to be comprehensive, for reasons of space we do not include detailed reference to all papers here. Given that reviews and meta-analyses tend to be cited more, these are more likely to be included.

British Telecom, well known for its provision of flexible working options (DTI 2005), reported that its use of FWAs resulted in productivity increases of up to 20% (Mahajan and Foggin 2006). Stavrou's (2005) large European study showed that remote working was related to perceptions of improved performance and, in a series of investigations in Spanish firms, Martinez-Sanchez *et al.* (2007a, 2007b) found that the use of both remote working and schedule flexibility were positively related to firm performance. In addition to confirming previous findings on remote working, Martinez-Sanchez *et al*. (2008) found that performance was positively associated with intensity of adoption. Moreover, remote working has been often associated with reduced costs (e.g. Di Martino and Wirth 1990; Skyrme 1994; Kurland and Bailey 1999).

Focusing on schedule flexibility, whilst several studies found a positive association with performance, there is also contrary evidence. Early work by Ronen and Primps (1980) concluded that schedule flexibility could help an organisation improve its effectiveness and from a subsequent review of the literature, Ronen (1984) showed that the use of schedule flexibility is positively related to organisational effectiveness, as well as having a positive effect on employee attitudes. However, in a comparison of three workplaces, Greene (1984) did not find differences in productivity gains between a workplace where schedule flexibility had been introduced and another where the working arrangements were not changed. Christensen and Staines' (1990: 475) review of the literature concluded that "no compelling case can be made for flexitime solely on the grounds of employers' conventional concerns with organizational effectiveness". More recent studies, however, have found a positive association between schedule flexibility and productivity (Shepard *et al.* 1996, Chow and Keng-Howe 2006).

Flexible working arrangements are often linked to an organisation's ability to recruit the required quantity and quality of staff by widening the recruitment pool. Such reports are found in

both the grey (see for example, the Coalition for Quality Flexible Work, the American Psychological Association) and academic (Lewis *et al.* 2001; Wise and Bond 2003; Foster Thompson and Aspinwall 2009; Maxwell *et al*. 2007) literatures. Reviews of the literature have generally shown that FWAs assist in employee retention (Dex and Scheibl 1999; Schmidt and Duenas 2002; Glass and Finley 2002, Grover and Crocker 1995), although the evidence tends to rely on subjective, rather than objective measurement. Several studies reported that managers believed that offering FWAs had a positive impact on employee retention, but many examined combined FWAs rather than individual arrangements (Lewis and Taylor 1996; Hogarth *et al.* 2001). The impact may be contingent on employees' circumstances, for example, Rothausen (1994) found that flexible working options decreased employee intention to quit, but that this effect was stronger with parents. Bond, *et al.* (2002), who took a slightly different perspective and asked employees about their reasons for staying with a company, found that only a minority of respondents cited flexible working arrangements.

Initial findings on the impact of specific FWAs on retention were mixed, but recent results increasingly support a direct link. Dalton and Mesch (1990) failed to find an impact from schedule flexibility on employee turnover in a public utility company. Yet, Glass and Riley (1998), when examining employee retention after childbirth, found that schedule flexibility was positively associated with retention. From an employee perspective, Lewis *et al.* (2001) found that 22% of their 40 interviewees reported that being able to work flexible hours was a major determinant of retention. Branine (2003) reported that the ability to retain experienced or skilled labour was the most commonly cited advantage of offering job shares. Batt and Valcour (2003), focusing on dual-earning couples, also found that access to schedule flexibility predicted lower turnover intentions. Using a large sample and objective measures, Stavrou (2005) showed that

schedule flexibility, reduced hours, annualised hours and job share were related to decreases in labour turnover. Finally, a recent meta-analysis, Gajendran and Harrison (2007) concluded that remote working is associated with lower turnover intent.

The evidence of potential impact of FWAs on absenteeism is more conclusive, with more than 60% of studies reporting that FWAs are associated with lower levels. These findings date back to early studies, as indicated by Golembiewski and Proehl (1978)'s review of the literature, which concluded that FWAs reduced absenteeism. More recently, Wood and de Menezes (2007) suggest that this link may be contingent on senior management valuing work-life balance. In practice, most studies concerned with absenteeism have concentrated on schedule flexibility, often comparing levels before and after introduction (see for example Kim and Campagna 1981; Greene 1984), or operations where schedule flexibility is available and where it is not (see for example Golembiewski *et al.* 1974; Ronen and Primps 1980; Narayanan and Nath 1982; Pierce and Newstrom 1982; Krausz and Freibach 1983; Kauffeld *et al.* 2004). Kopleman's (1985) review concluded that whilst compressed working time had no effect, schedule flexibility reduced absenteeism by a median of 5.3%. Bailyn *et al.* (1997) conducted action research within one organisation and found a reduction in absenteeism of 30% in one department. By contrast, Dalton and Mesch's (1990) experimental study of 272 non-technical employees, also within one organization, found no differences between those with and without FWAs.

In summary, from the evidence at the organisational level, the strongest case would seem to be for a potential reduction in absenteeism, especially in relation to remote working. There is also increasing support for a positive impact on retention. The link with productivity and other financial measures is less clear, although more recent studies indicate a positive association with remote working and schedule flexibility.

The direct association with individual performance

The majority of studies examining individual performance focus on the relationship with productivity, but some include measures such as performance ratings or indicators of quality (e.g. customer complaints, errors made by employees). As shown in Table 3, although this outcome has been the most researched, the evidence fails to demonstrate a link.

Early results differed even within studies. Schein *et al.* (1977) investigated the impact of FWAs on the productivity of 246 clerical employees, within five units of a financial institution, and observed that only two of the units increased in productivity after the introduction of FWAs. Harrick *et al*. (1986) found that, after the introduction of FWAs, efficiency (processing time) increased in three tasks, but decreased in the other three that they observed. Eaton (2003), using a sample of 1030 professional and technical workers within a biopharmaceutical firm in the USA, found that work-family policies, which included FWAs, were positively associated with productivity; but a greater association was observed between their usability, or perceived availability, and productivity. Research by Cranfield School of Management and Working Families (Cranfield School of Management 2008), using a survey of 3580 employees in 7 companies in the UK, found that most flexible workers and their managers reported a positive impact of FWAs on employee performance. By contrast, Wallace and Young (2008) observed no impact in a firm offering FWAs, when examining the productivity of 670 lawyers, since individuals billed for similar hours regardless of whether FWAs were available to them. Studies that used measures such as number of customer complaints and errors made, reported that FWAs were associated with better quality of the work or service produced (Kauffeld *et al.* 2004; Cranfield School of Management 2008).

Looking at those studies which focused on remote working, many used self-reported measures of productivity and reported a positive link with worker productivity (Bailey and Kurland 2002). For example, Hill *et al.* (1998) examined self-reported performance ratings for 249 employees and found that those from teleworkers were higher. In a subsequent study, Hill *et al.* (2003) compared 5524 employees at IBM who worked in a traditional office, a virtual office and at home. They reported that the perceptions of both virtual and home office workers was that remote working had increased their productivity, although there was no significant difference in their recorded performance. Following a concern with self-reported measures, in a recent meta-analysis, Gajendran and Harrison (2007) differentiated the source of performance ratings by defining two separate variables. They found remote working to be positively associated with performance ratings, both self-reported and from supervisors, but the association was stronger with regards to the former. Finally, Kossek *et al.*'s (2005) study of 245 professional employees suggested that the association may be contingent on the nature of the working arrangement, i.e.: formal teleworkers achieved higher performance ratings than non-teleworkers, but there was no association between the amount of remote working and performance rating.

Concerning schedule flexibility, Orpen (1981) failed to find an effect on either productivity or performance ratings. Similarly, Kim and Campagna (1981), using a sample of 353 employees in 4 divisions of a US welfare agency, compared those on flexitime with those on fixed hours; no evidence of an adverse impact on performance was found and higher performance was only observed in one division. Ronen (1981) also reported improved productivity in public sector agencies in the USA after the introduction of schedule flexibility; however, his results from the private sector differed in that only 4 out of 11 companies became more productive. Rainey and Wolf (1981) used objective measures of performance to examine

the impact of schedule flexibility on clerical employee performance and found no difference in the accuracy of output, but the quantity of output was significantly lower for those without schedule flexibility. In a review of previous literature, Kopleman (1985) concluded that productivity improved by a median of one percent. More recently, Shepard *et al.* (1996) argued that schedule flexibility can influence productivity by up to 10% and that the degree of flexibility is critical in influencing productivity.

Considering compressed working time arrangements, Kopleman (1985)'s review concluded that compressed working time arrangements had no impact on productivity. Yet, Vega and Gilbert (1997) investigated the productivity of police officers and reported improvements with compressed working time arrangements. Hyland *et al.* (2005) analysed the moderating impact of employee preferences for segmenting their home and work life on the relationship between FWAs and performance; they found that this strengthens the impact of compressed working time on employee performance, but not the impact of schedule flexibility or remote working on employee performance.

In summary, the findings are not uniform. There are indications that remote working may have a positive impact on worker performance, but any association may be contingent on the nature of the FWAs as well as on employees' perceptions. Several potential mediating and moderating factors have emerged.

The evidence on an indirect link with performance

There have been attempts to draw together the evidence on flexible working arrangements and attitudinal outcomes, in the form of meta-analyses (e.g. Baltes *et al.* 1999; Gajendran and Harrison 2007; Kossek and Ozeki 1999) and literature reviews (e.g. Golembiewski and Proehl

1978; Dex and Scheibl 1999; Glass and Finley 2002). Whilst their overall conclusions vary, there is some consensus regarding a positive association.

Reviews of the literature on work family policies have generally concluded that FWAs are associated with organisational commitment, job satisfaction and morale (Dex and Scheibl 1999; Glass and Finley 2002; Kelly *et al.* 2008). Meta analyses, however, have exposed some of the diversity in findings and limitations of the empirical work. Kossek and Ozeki's (1999) meta-analysis of 27 studies on work-family policies and work-related outcomes reported mixed findings for organisational commitment and job involvement. Baltes *et al.*'s (1999) meta-analysis of the effects of flexible and compressed working time schedules on work related behaviour, identified a positive link with job satisfaction, but also showed that previous studies had almost exclusively been conducted in non-manufacturing settings and that the positive effects of FWAs appeared to diminish over time (Baltes *et al*. 1999: 497).

Pierce and Newstrom (1980) attempted to explain the potential impact of FWAs on employee performance using a model of work adjustment - a process by which the individual interacts with and adapts to the work environment. They proposed that FWAs can deliver more efficient application of employee abilities through: improved harmony between work hours and circadian rhythms, reduced stress, increased satisfaction of employee needs such as decision participation and autonomy, and work-personal time harmonisation. This model, although not tested empirically by them, was used to hypothesise links between FWAs and employee behavioural outcomes, which have been supported by subsequent research. For example, Bond and Galinsky (2006), using data from the 2002 Study of the Changing Workforce, showed that a flexible workplace was positively related to job satisfaction, commitment and employee engagement. In the UK, Nadeem and Metcalf (2007) examined the impact of both the provision

and perceived availability of work-life arrangements and concluded that high perceived availability was associated with greater organisational commitment and job satisfaction.

The link with job satisfaction

As previously shown in Table 3, the link with job satisfaction has attracted significant interest and the general evidence is supportive of a positive link with FWAs. For example, Almer and Kaplan (2002) compared flexible workers and non-flexible workers in a public accounting firm and concluded that FWAs were positively related to job satisfaction. The Third Work-Life Balance Employee Survey (Hooker *et al.* 2007) also showed that flexible workers were more likely than non-flexible workers to be 'very satisfied' with their jobs. Similarly, work by Cranfield School of Management and Working Families (2008) found that those who had FWAs reported higher levels of job satisfaction than those who did not in four out of the seven organisations studied.

Employee perceptions about the availability of FWAs were also reported to be associated with job satisfaction. Scandura and Lankau (1997) found that women who perceived that their firm offered FWAs reported higher levels of job satisfaction, regardless of whether they actually used the FWAs. Allen (2001) concluded that the availability of FWAs alone had a minimal impact on job attitudes, but that a perception of the organisation as being family-supportive had a positive effect on job satisfaction and organisational commitment. Forsyth and Polzer-Debruyne (2007) confirmed these findings drawing on a survey of 1187 employees in 23 organisations in New Zealand.

Looking specifically at remote working, Harrick *et al.* (1986) conducted a pre test/post test experiment within a government agency and found that employees were not more satisfied in

the post-test period. Bailey and Kurland's (2002) review concluded that there was little evidence of a relationship between telework and job satisfaction. However, a meta-analysis conducted by Gajendran and Harrison (2007), which used more rigorous methodology, found an association between telework and increased job satisfaction. Taking a slightly different stance, Golden (2007) examined the satisfaction of co-workers of teleworkers, and found that teleworker prevalence was negatively associated with co-worker satisfaction and that this was influenced by the amount of time teleworkers worked. These findings may affect overall performance and are supported by Gajendran and Harrison's (2007) meta-analysis, which also identified: perceived autonomy as a key mediator of the link between remote working and job satisfaction, as well as gender and experience of teleworking as significant moderators.

When focusing on schedule flexibility, several studies support a positive association with job satisfaction (Harvey and Luthans 1979; Nollen 1981; Orpen 1981; Hohl 1996). However, Pierce and Newstrom (1983) found no positive association between schedule flexibility and job satisfaction; although they suggested a potential indirect relationship via job autonomy. Interestingly, Ronen (1984), in a review of the literature, reported that the impact of flexitime on job satisfaction was consistently positive, except for those employees who were unable to participate in the flexitime programme, who expressed job dissatisfaction. Examining the effect of compressed working time, Latack and Foster (1985) found no impact on job satisfaction.

The link with organisational commitment

A series of studies considered how the provision of a range of family-friendly policies, including FWAs, influence commitment and generally found a positive relationship (e.g. Grover and Crocker 1995; Thompson *et al.* 1999; Dex and Smith 2002; Harris and Foster 2005; Cranfield

School of Management 2008; Maxwell *et al.* 2007). Glass and Finley's (2002) review concluded that the weight of evidence suggested that flexible scheduling impacts positively on organisational commitment. Nonetheless, as shown in Table 3, there is stronger support for no association. Eaton (2003), using survey data from 463 professional and technical workers in biopharmaceutical companies, found that neither formal nor informal flexibility policies were related to organisational commitment. Wang and Walumbwa (2007) also found no relationship between FWAs and organisational commitment, although these findings may be influenced by the national contexts (Thailand, China and Kenya).

Examining the relationship in more depth, contingent factors have also been found. Rothbard *et al.* (2005) argued that an employee's desire for segmentation between home and work roles moderates the relationship between FWAs and commitment. Employees with high desire for segmentation were found to be more committed when working flexibly. On the related concept of employee engagement, Perry-Smith and Dumas (2007) showed a positive relationship between episodic temporal flexibility and engagement, but no relationship between daily flexibility and engagement.

Much interest has focused on schedule flexibility. Pierce and Newstrom (1980, 1982) found that employees on flexible schedules were on average more committed than those on a fixed schedule, but found no differences between the different types of flexible schedules considered. Building on Pierce and Newstrom's work, Chow and Keng-Howe (2006) compared organisational commitment amongst those with flexible working hours and those without and the former were more committed. Perceived availability of schedule flexibility may also influence organisational commitment: Scandura and Lankau (1997), based on a survey of 443 women, showed that those who perceived that their organisation offered flexible work-hours reported

higher levels of organisational commitment than those who did not, regardless of whether they worked flexibly. Eaton's (2003) results on perceptions confirmed this positive association.

In summary, the evidence appears to be more supportive of a link between individual FWAs and job satisfaction. The perception of availability of FWAs may be important in establishing an association with employee outcomes. Finally, several mediators or indirect links with performance (e.g. via job control or autonomy) as well as moderators (e.g. experience of using a FWA) emerged from different studies (e.g. Bailey and Kurland 2002; Gajendran and Harrison 2007; Kelly and Moen 2007; Kelliher and Anderson 2008).

The link with stress and well-being

Flexible working has been advocated as a means of reducing workplace stress (e.g. European Commission 2000). Almer and Kaplan (2002) examined the association between FWAs and different sources of stress, including 'role conflict' (conflict from more than one life role, such as work and family), which was found to be lower in flexible workers, who also displayed significantly lower levels of emotional exhaustion. Halpern (2005) analysed data from 3552 respondents to the 1997 National Study of the Changing Workforce and found that the greater the number of FWAs available to employees, the fewer reported symptoms of stress. Likewise, using data from WERS 2004, Nadeem and Metcalf (2007) found that work stress decreased with employees' perceptions of the number of FWAs available to them. Research by Cranfield School of Management and Working Families (2008) found that flexible workers saw their working arrangements as a way of avoiding or dispersing stress. However, in line with other studies, this research found that flexible working could also be a source of stress (Ashford *et al.* 2000; Kelliher and Anderson 2008; Tietze and Musson 2005; Shamir and Salomon 1985).

Remote working in particular has been associated with stress. Remote workers were found to suffer greater role conflict and role overload owing to simultaneous demands from work and home (e.g. Kraut 1989; Moore 2006), may experience lower levels of social support than office-based employees (Trent *et al.* 1994) and co-worker conflict (Gajendran and Harrison 2007). Nevertheless some studies failed to find differences in stress between remote-workers and office-based workers (Staples 2001; Trent *et al.* 1994). Remote working may both relieve and create stress. On the one hand remote-workers may suffer less stress by, for example, not having to travel to work, yet on the other they may experience conflicting demands on their time and energy leading to increased stress (Shamir and Salomon 1985).

Schedule flexibility has been found to reduce stress when organisations ensure that their prevailing culture does not prevent the full utilisation of such schemes (Shinn *et al*. 1989; Sparks *et al.* 2001). For example, employees may be unwilling to take up a FWA if they feel that this may signal reduced commitment to their job. For those working reduced hours, Dex and Scheibl (2002) observed that women felt guilty about being offered flexibility and this resulted in anxiety, leading the authors to suggest that anxiety may increase within organisations that offer FWAs selectively rather than to all employees.

Thomas and Ganster (1995) used survey data from 398 professionals with children and examined the effects of schedule flexibility on work-family conflict and measures of strain. An indirect positive effect was found on attitudes, mental and physical health outcomes such as depression, somatic complaints and cholesterol level, through an increase in employee control and subsequent decrease in work-family conflict. Glass and Finley's (2002) review of the literature corroborated these findings, since they concluded that schedule flexibility impacts favourably on well-being, by means of increasing control and reducing work-family conflict.

More recently, Costa *et al.* (2004, 2006) investigated the impact of flexible working on health and well-being, by distinguishing between "variability", a form of FWA controlled by the company, and "flexibility", a form of FWA more under employee control. They found that the most favourable effects on health and well-being were associated with higher flexibility and lower variability, in other words where the employee, not the employer, exercised control over variations in work scheduling.

Summary: is there support for a business case?

At first sight, there appears to be support for a link with performance (see Table A, de Menezes and Kelliher 2011). Many studies found some form of performance outcome to be linked to either generic or individual FWAs. However, there are also many studies that show either no association or a negative association, highlighting that the accumulated evidence is inconclusive. It can be observed that several studies considered more than one outcome, and therefore the conclusions may differ with respect to outcome (e.g. Baltes *et al.* 1999). Although the majority did not test contingent factors, potential effects do not appear to be universal. As suggested by the few studies that considered potential moderations, other factors (e.g. employee's preferences or constraints, autonomy, job functions, supportive HRM policies, gender, job level) may influence the strength of the association between FWAs and performance. Consequently, the initial perception of significant support for a link with performance is weakened. Meta-analyses of the association between different FWAs and performance related outcomes covered up to 67 empirical studies (or 225 within the broader area of work-life research, where the concern has been predominantly with assessing predictors rather than outcomes). Their focus tended to be on one or two FWAs, some included non-published research

and their analytical sophistication has increased over time. As some authors (Glass and Finley 2002; Gajendran and Harrison 2007) acknowledged, difficulties in drawing from different definitions, measures and samples may limit the scope of meta-analytical studies. Moreover, they are liable to biases in the individual studies and are constrained by the information in the texts, as extensively discussed in medical research (e.g. Blettner *et al.* 2008; Fotini, 2008; Zwalen *et al.* 1999). Among the meta-analysis in this review, reported correlations were not strong, possibly reflecting the different issues that we observed and highlighted in Table 2. Their findings vary, but suggest potential for future consensus on a positive association between FWAs and employee attitudinal outcomes. More recently, Beauregard and Henry (2009) reviewed the literature on the link between work-life balance practices (including various FWAs and several family-friendly policies) and organisational performance. They concluded that these practices are often associated with improving an organisation's competitive position in the labour market and positive job-related attitudes. Overall they suggested that links may be moderated by factors such as national context, employee and organisational characteristics and confirmed a lack of support for an association between work-life balance policies and work-life conflict.

We also note an emerging stream of research on the implications of work-life policies in Asian countries where the role of women in societies has been changing (e.g. De Cieri and Bardoel 2009; Moon and Roh 2010; Shankar and Bhatnagar 2010; Yanadori and Kato 2009). These studies have found associations between FWAs and positive employee outcomes and attitudes for female employees, which may suggest that cultural factors, as well as gender, may moderate different links in the potential paths from FWAs to performance. To conclude, we lack clear evidence in support of a universal business case for flexible working.

Explaining the Mixed Findings

Closer examination of the literature revealed differences in the approaches and perspectives adopted by studies as well as limitations in research designs, which make it difficult to generalise from their findings. We now examine each of these in more detail.

Conceptual Issues

First, flexible working has been conceptualised in different ways. In some studies FWAs were taken together within a wider package of 'family friendly' policies designed to accommodate the needs of employees with caring responsibilities (Dex and Scheibl 1999; Glass and Finley 2002; Kossek and Ozeki 1999). This stream of research examines the influences of bundles of policies, and thus the possible effect of FWAs cannot be isolated. By contrast, other studies examined the impact of specific changes to working arrangements. These tended to focus on one particular flexible working arrangement, for example, schedule flexibility (see Dalton and Mesch 1990; Harrick *et al.* 1986; Orpen 1981; Thomas and Ganster 1995), or remote working (see Bailey and Kurland 2002; Di Martino and Wirth 1990; Lapierre and Allen 2006). As a result there is a body of knowledge about individual practices and performance, however, in contrast to the HRM and performance literature (e.g. Wood and de Menezes 2008); there were few attempts to investigate synergies from particular bundles of FWAs. For example, is the potential effect on performance greater if remote working is combined with schedule flexibility? As we observed, relatively few contingent factors have been actually examined, though reviews or meta-analyses indicated a need for such investigations (e.g. Baltes et al. 1999). Where moderation has been investigated, the focus has mainly been on potential interventions that may affect the link with performance (e.g. the introduction of specific programme, intensity of flexible working), or health related

outcomes (e.g. when focusing on work life balance), or on group analyses implying that FWAs may be more suitable for particular types of workers (e.g. professionals, mothers). In addition, there have been few attempts to identify synergies with other management practices, which may support flexible working (Martinez-Sanchez *et al*. 2008). However, the neglect of contingent factors may also be due to researchers viewing different forms of flexible working as separate activities, which appeal to employees with different needs or preferences and as such synergies would not necessarily be expected. When comparing the findings from studies which adopted different perspectives, we should be aware that not only will employer motivation for offering these options differ, but employees' motivations for taking advantage of them may also differ. Consequently, some studies focused on particular groups of employees (Krausz and Freibach 1983; Shinn *et al.* 1989; Thomas and Ganster 1995), whereas others studied environments where FWAs are available to all employees (Kelliher and Anderson 2008; Latack and Foster 1985).

Second, measures of FWAs varied significantly across studies, as illustrated in Table 2, and within studies that had multiple measures, findings also differed between measures. These differences in what has been measured have serious implications for comparing findings and especially for meta-analyses as they may affect the overall correlation. Some authors measured the existence of FWAs (e.g. Wallace and Young 2008); whilst others were concerned with employee perceptions of availability of FWAs (e.g. Eaton 2003; Scandura and Lankau 1997), and others focused on the actual take-up (e.g. Hooker *et al.* 2007; Kossek *et al.* 2005). Different measures may well have different implications for any link with performance. The existence of a policy alone may have little impact on employee behaviour if what is offered does not match employee preferences, or where employees feel unable, or unwilling to take advantage of flexible working options, because, for example, they believe that it might signal a lack of

commitment and/or impact on their career prospects. Perceptions of availability, irrespective of whether employees take advantage of the FWAs available to them, may influence employee outcomes like job satisfaction or organisational commitment and indirectly impact on performance. Take-up may affect performance both directly and indirectly. In addition to the indirect link via, for example, job satisfaction, FWAs may directly affect work effort (Kelliher and Anderson 2010).

Third, changes to working arrangements have been treated in a very general way. Few studies distinguished between formal and informal FWAs, in spite of the prevalence of informal and ad hoc arrangements (Healy 2004). Indeed, it is often unclear from the information provided whether informal arrangements were included in the study. There have been few attempts to measure the extent of change to working arrangements. Studies tended to classify flexible workers as, for example a remote worker, irrespective of the amount of time spent working remotely. It could be argued that the experience of the employee who works remotely for one day a week is likely to differ from the experience of another who works remotely three days a week. Furthermore, the real degree of choice open to the employee has been neglected and needs to be assessed in context (Bielenski *et al.* 2002; Lewis 2003; Lewis *et al.* 2007). Finally, few authors examined the time context – how long has the individual been working flexibly, or how long the flexible working policy has been in place. It may take time to adjust to new working arrangements and therefore there may be a time lag before any performance outcomes emerge. Alternatively, initial gains may be diluted as FWAs become more commonplace and sense of entitlement increases (Lewis and Smithson 2001).

In summary, part of the explanation for the mixed findings may be that many studies were not explicitly designed to examine how giving employees some degree of choice over

where, when and how much they work may impact on performance. In some cases this has been because FWAs were not separated from other 'family friendly' policies, whereas, in others, single forms of FWAs have been the focus of the study. Potential synergies from having choice across different areas have not been investigated. Measures of FWAs have ranged from the existence of a policy, to employee perception of availability, to actual take up. Most studies examined only one of these, yet it could be argued that they may have different effects on performance. This lack of refinement in the way in which FWAs have been defined is also highlighted in the relative neglect of contingent factors.

Methodological Issues

As a whole the empirical evidence tends to be based on single level studies that are either comparisons between flexible and non-flexible workers, or cross-sectional and therefore do not allow for causality to be assessed (Wall and Wood 2005). A challenge in comparing studies is the variance in sample design and size. For example, when comparing those that focused on the individual, sample sizes range from less than fifty (Hughes and Bozionelos 2007 (n=20); Frye and Breaugh 2004 (n=40)) to several thousands (e.g. Costa *et al.* 2004 (n=21505); Bond and Galinsky 2006 (n=2810)). Several studies investigated a single occupation (e.g. students (Rogier and Pagett 2004), police officers (Burke 1988), and management accountants (Frank and Lowe 2003)) and many used data from only one organisation or workplace (e.g. Dalton and Mesch 1990; Dunham *et al.* 1987; Mahajan and Foggin 2006; Golden 2007). Consequently, their findings may not generalise to wider populations of workers. More recent studies, perhaps due to the increased prevalence of FWAs, tended to rely on larger and more heterogeneous samples and hence their findings might be more meaningful.

There were few attempts at multi-level analysis, which may be due to difficulties in matching data on FWAs used by individuals with policies or performance that are measured at the group level. Most analyses relied on subjective measures of performance, and nearly 70%[3] of the studies in this review included at least one self-reported outcome and/or judgement of a single respondent. Notwithstanding this, there is evidence that managers' ratings of performance measures in the UK are consistent with more 'objective' accounting data (Wall *et al.* 2004), and of corroboration between employee self-reports and their manager's assessment (Cranfield School of Management 2008; Gajendran and Harrison 2007). Yet, assumptions have to be made regarding the relationship between time of implementation or use of the FWA and any potential effects. Moreover, to assess a business case, indirect effects of FWA organisational policies via employee-related outcomes on organisational performance need to be examined. This requires a type of mediation test based on a two-level regression model that only recently became available in the literature, owing to developments in structural equation modelling (Muthen and Muthen 2007). Employee behavioural outcomes should be measured at the individual level, but policy and the dependent variable (performance) are at the group level. In traditional multi-level models, the ultimate dependent variable is at the individual level. Potential mediators, with the exceptions of job satisfaction or commitment, were rarely investigated as is the case in the wider HRM and performance literature (Harley *et al.* 2007; Macky and Boxall 2007, 2008; Mohr and Zoghi 2008; Takeuchi *et al.* 2009). Although the link between FWAs and job satisfaction has been a frequent focus of study, the complete chain towards performance has received little attention.

[3] Some studies, especially the older ones, do not describe their measures in sufficient detail for the exact proportion to be computed.

Much has been inferred from large surveys, which are often secondary data and not specifically designed to address the link between FWAs and performance. For example, the Workplace Employment Relations Surveys (1998 and 2004) recorded whether any employee in the workplace has access to FWAs, but lack data on: usage, length of use, introduction of policy. The European Quality of Life Surveys and European Working Conditions Survey have measures at the individual level on work-life balance and some FWAs, but lack performance variables. National surveys need to trade off more meaningful measures of performance for having a wider coverage. Many studies examined one dependent variable at a single point in time. Consequently, they do not take account of any time lag between implementation and/or take-up of flexible working arrangements and the outcomes that may lead to performance. Little attention has been given to longitudinal designs and event history analyses. In practice, the word "effect" is often used when only an association is demonstrated by the analysis conducted. Several studies used control variables to compensate for the omitted variables bias that may arise from not having the relevant variables. The general tendency has been to add control variables to a model whenever possible, without offering a justification. Yet, the decision to control for a variable depends on the theoretical model that is being assumed and these vary widely, since research in this topic has adopted different perspectives and focused on different units of analyses. Qualitative and multi-method studies have been rarer, thus suggesting little emphasis on theory development. Finally, findings do not corroborate across sources or methods.

To sum up, there are a number of methodological issues which may help explain the mixed findings and make generalisations problematic. These range from large variations in sample size, homogeneity in sample composition, together with a lack consistent reporting of sample information, to issues associated with the levels of analysis and an overreliance on cross

sectional data. Furthermore, methods that allow for theory building have been relatively under-utilised. Many of our observations are similar to those made by Wall and Wood (2005) when assessing the literature on HRM and performance and Casper *et al.'s* (2007) review of the work-family research. Likewise, we conclude that with the evidence to date making causal inferences is problematic.

Towards a Research Agenda

In examining this vast literature, we conclude that there is a clear need for further qualitative and quantitative research. First and foremost, we need research specifically designed to examine the impact of allowing employees some degree of choice over their working arrangements. In order to examine the extent to which real choice is open to employees, it is important that studies include information on the context in which FWAs are introduced. Second, we argue that research designs must include more detailed measures of FWAs (e.g. degree of formalisation, use, length of use, extent of change in working arrangement). Similarly, more attention to the definition of performance measures is required, since different forms of FWAs may have distinct associations with performance and associations may vary over time. Moreover, details on variable definitions should be reported.

Third, from the methodological issues discussed above, we identify the need for different types of studies. Empirical studies based on large and diverse samples are required in order to allow generalisations to be made. Longitudinal designs are critical so that causality can be established. Multi-level data are required in order to allow for the examination of the relationships at the appropriate levels. There is need for further theory development; detailed case studies of organisations would help not only in building theory, but could also examine the

actual benefits and costs involved with different FWAs, according to what is offered and taken up. Meta-analyses performed within the framework of systematic literature reviews are welcome, but they require detailed information on context and variable definitions so as to enable a coherent selection of studies. Consequently, researchers will need to trade off the number of studies to include against the substance of their investigation, more sophisticated meta-analyses are then likely to use fewer studies. If such coherency is achieved, further progress on theory building may be achievable through exploring the correlation structure, as for example by using structural equation models, to gain insights into potential mediators and moderators.

It can be argued that the business case for FWAs can be examined in the context of the wider HRM and Performance debate, by considering FWAs as HRM practices[4]. Purcell and Kinnie's (2007) framework presents a chain linking HRM practices to performance, where manager's enactment of practices, work climate, employees' attitudes and behavioural outcomes are mediators. In this context, it is likely that line managers and their attitudes to work-life issues, in line with the organisation adaptation theory (Goodstein 1994, 1995; Wood *et al.* 2003), will play a role in the link between FWA and performance. It could also be argued that the extent to which line managers support employees' choice over their working arrangements would influence subordinates' perceptions of availability of FWAs (Lautsch, Kossek and Eaton 2009). Overall, the organisational culture and whether the HRM system is supportive are contingent factors that deserve further attention, since they impact on real employee choice (Gregory and Milner 2009) and as such on the effectiveness of FWAs.

[4] We note, however, FWA policies may differ from other HRM policies, in the sense that employees can opt to take advantage of them as opposed to being subject to them, as would be the case with for example a performance management policy.

In addition, we argue progress in empirical research may be made through building on theories that were used to explain the relationship between FWAs and performance. Most are at the individual level, and relate the experience of the job to positive sentiments (or behaviour) that may impact on performance. For example, Pierce and Newstrom (1980) used the work adjustment model (Dawis *et al.* 1968) to explain how flexitime could influence employees' attitudes, behaviours and overall performance. This model proposes that correspondence between an individual's abilities or skills and the job requirements predicts higher performance and has been used as a theoretical foundation for analysing the indirect link between FWA and performance (Baltes *et al.* 1999; Chow and Keng-Howe 2006). Hackman and Oldham's (1975) job characteristics model implies that basic characteristics of the job (e.g. control) lead to psychological states that influence job performance. In which case, FWAs may give employees a sense of independence and/or fulfilment that improves their job performance (Dodd and Ganster 1996; Gropel and Kuhl 2009; Redman, Snape and Ashurst 2009). Karasek's (1979, 1989) model proposes that high discretion (e.g. choice over working arrangements) enables workers to cope better with high job demands and thus may buffer the adverse effects of work demands. These work-psychology models also suggest measures of job involvement (Lodahl and Kejner 1965), personal (Schaufeli *et al.* 2002) or employee engagement (Harter *et al*. 2002) as potential mediators of the link between FWAs and organisational outcomes such as retention, labour turnover and productivity. Moreover, they imply potential moderators, e.g.: the extent as to which the job requires specific skills, job level, length of use.

Social Exchange Theory (Blau 1964) has been used to explain behaviours such as increased effort, which may be returned to the employer as a benefit in exchange for flexibility over working arrangements (Kelliher and Anderson 2010). Along similar lines, Konrad and

Mangel (2000) used Akerlof's (1982) gift exchange model as an explanation for a link between work-life programmes and performance. Reciprocity, as discussed by Konrad and Mangel (2000), implies that there may be a direct link between FWAs and performance, as well as an indirect link via organisational commitment. In investigating this link, special attention should be given to affective commitment (Meyer and Allen 1991), which has been found to be strongly related to other positive attitudes to work, e.g. Cooper-Hakim and Viswesvaran's (2005) meta-analysis found correlations of 0.60 with job satisfaction and 0.50 with job involvement after correcting for unreliability. Consequently, a general measure of well-being, which draws from established attitudinal dimensions, becomes attractive for future research.

There is a separate question as to whether individual employee positive outcomes are reflected at the collective level to enable mediation of any link between FWAs and organisational performance. As Fisher (2010: 400-1) described, early studies of job satisfaction were discouraging, but after corrections for unreliability and sampling error, the evidence from meta-analyses show moderate association between employee satisfaction and organisational performance (Brown and Lam 2008). Fisher concluded that there is evidence in favour that causality flows from employee attitude to performance, which is encouraging for future investigations of the paths from FWAs to performance. In addition, there may be non-linear associations to be examined. Warr (2007) questioned the general perception that the more desirable properties in a job, the better it is, and suggested that there may be thresholds and hinted at nonlinear relationships between these desirable properties and performance. More recently, Virick, Da Silva and Arrington (2010) found an inverted U relationship between telecommuting and life satisfaction, which may influence the overall chain towards performance.

Although employer driven flexible working practices were not the focus of this review, it is reasonable to assume that they are introduced for business reasons. An avenue for future research would be to compare outcomes of employer and employee driven approaches to flexible working, for example, data on the former could be used as benchmarks in assessments of gains from giving employees at different levels more choice over their working arrangements. Such an analysis is important, given that some authors (e.g. Fleetwood 2007; White *et al.* 2003) have argued that employee-friendly work practices disguise employer-friendly practices that rarely benefit the individual.

Conclusions

We have seen a considerable literature develop in recent decades concerned with examining the relationship between flexible working arrangements and performance. Taken together this literature however does not clearly demonstrate an unequivocal business case for offering employees choice over working arrangements. Given the diversity in approaches that we identified, it is perhaps not surprising that a clear picture has not emerged. We conclude that there is need for greater clarity in this field of research, in order to enable greater scope for comparability between studies. In particular, it is important for distinct perspectives (changes to working arrangements, managerial orientations), and differences in the nature of what is being examined (policy, perception, take up, nature of choice) to be recognised. We advocate that future research should adopt multi-level approaches to examine relationships between practices; explore different mediators and moderators at both individual and organisational levels; develop longitudinal studies so that not only causality can be addressed but also the time lag between adoption and outcome can be examined.

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Table 1: Keywords used in the Systematic Review

AREA OF INTEREST	KEY WORDS
A. Flexible working arrangements	Flexible work* Alternative work* Work life balance Family friendly Work family policies/balance Work family conflict/family work conflict Telework* Flexitime Part time work* Telecommut* Home work* Remote work* Compressed work*/compressed hours Annualised hours Term-time working
B. Work related outcomes	Performance Outcomes Results Work attitudes Job satisfaction Commitment Motivation Turnover Retention Absenteeism Productivity Job fulfilment Enthusiasm Empowerment Autonomy/time-control
C. Employee outcomes	Well being Stress Anxiety Employee benefits

*An asterisk indicates that with keywords different endings are included in the search, e.g.: telework, teleworker, teleworking.

Table 2: Measures of Flexible Work Arrangements

Flexible Work Arrangement	General Definition	Measure(s)	References
Generic	Employee has access to a range of flexible or non-standard work arrangements	Availability of any form (index, aggregate or bundle)	Campbell-Clark (2001), Halpern (2005), McCampbell (1996), Nadeem and Metcalf (2007), Shockley & Allen (2007), Stavrou (2005)
		Flexible work included in a measure of family-friendly policies	Allen (2001), Batt & Valcour (2003), Brough et al. (2005), Eaton (2003), Hannah (1994),Thompson et al. (1999), Wang & Walumbwa (2007), Wise & Bond (2003), Wood et al. (2003), Wood & de Menezes (2007)
Schedule Flexibility	Employee is able to exercise some choice over time when Work is carried out	Whether employees decide when to arrive and leave work	Baltes et al. (1999), Christensen & Staines (1990) Schein et al. (1977)
		Whether employee reports having flexibility of working hours	Costa et al. (2004, 2006), Golembiewski et al. (1974), Grover & Crocker (1995), Hyland et al. (2005), Kelly et al. (2008), Perry-Smith & Dumas (2007), Scandura & Lankau (1997), Shepard et al. (1996), Thomas & Ganster (1995)
		Before vs after introduction of flexitime	Harrick et al. (1986)
		Introduction of flexitime vs one-year later	Dalton & Mesch (1990)
		Introduction of flexitime vs two-year later	Krauz & Freibach (1983)
		Users vs non-users	Johnson et al. (2008), Lapierre & Allen (2006), Orpen (1981), Schein et al. (1977)
		On flexitime schedule (core + varying hours) vs on fixed scheduled	Greene (1984), Kaufeld et al. (2004), Kim & Campagna (1981), Narayanan & Nath (1982), Rainey & Wolf (1981)
		Flexitime vs staggered vs fixed	Harvey and Luthans (1979), Pierce & Newstrom (1982, 1983)
		Formal use	Ronen & Primps (1980)
		Availability and use	Hohl (1996), Hooker et al. (2007)

Flexible Work Arrangement	General Definition	Measure(s)	References
Remote Working	Employee is able to work away from the workplace	Formal and informal use	Kelliher & Anderson (2008)
		Participation in teleworking programmes	Bailey & Kurland (2002), Di Martino & Wirth (1990), Hill et al. (2003)
		Virtual vs traditional worker	Hill et al. (1998), Johnson et al. (2008), Kraut (1989), Shamir & Salomon (1985)
		Availability and extent of use of homeworking	Hohl (1996), Hooker et al. (2007), Meyer et al. (2001)
		Formal and informal use	Kelliher & Anderson (2008), Kossek et al. (2005)
		Use	Lapierre & Allen (2006), Martinez-Sanchez et al. (2007a, 2007b), Moore (2006)
		Able to work from home at least 2 days/week	Madsen (2003)
		Works 3 days/week at home	Frank & Lowe (2003)
Compressed Working Time	Employee works full-time hours in fewer days than is normal for workplace	Time since introduction	Baltes et al. (1999)
		4/40 week vs control(5/40)	Dunham et al. (1987), Facer & Wadsworth (2008)
		4/40 week: before and after introduction	Greene (1984)
		Being on compressed work scheme	Hyland et al. (2005), Ronen & Primps (1981)
		3/38 week vs control (5/40)	Latack & Foster (1985)
		3/40 week: before and after introduction	Vega & Gilbert (1997)
		Compressed vs non-compressed (before & after)	Venne (1997)
		Availability and extent of use	Hohl (1996)
Reduced Hours	Employee is able to reduce hours worked	Use	Branine (2003), Kossek and Lee (2008), Meyer et al. (2001)
		Formal use by choice	Hill et al. (2006)
		Availability and use	Hohl (1996), Hooker et al. (2007)
		20% reduced load	Rogier & Pagett (2004)

Table 3: Summary of the Evidence in Support of a Link with Performance*

	Number of Studies	Support	No Association	Opposite or Against
Financial Performance Indicators or Productivity	18	8 (44%)	9 (50%)	1 (6%)
Turnover or Retention	28	13 (46%)	15 (54%)	0 (0%)
Absenteeism	28	17 (61%)	10 (36%)	1 (3%)
Individual Performance or Productivity	42	13 (31%)	29 (69%)	0 (0%)
Job Satisfaction	30	17 (57%)	12 (40%)	1 (3%)
Organisational Commitment	22	9 (41%)	13 (59%)	0 (0%)
Health or Well-being	19	6 (32%)	13 (68%)	0 (0%)

* Twenty-nine studies covered work-family balance, out of these 66% showed no association and 10% a negative association.