

Performance measurement systems in the health and care sector: Are targets and monitoring additional demands or resources for employees?

Lilian M. de Menezes

Faculty of Management, Bayes Business School (formerly Cass), City, University of London, London, UK, and

Ana B. Escrig-Tena

Department of Business Administration and Marketing, Universitat Jaume I, Castellón, Spain

Abstract

Purpose – This paper aims to improve our understanding of performance measurement systems in the health and care sector, by focussing on employee reactions to core performance measurement practices. Targets and monitoring are hypothesised to be associated with employee perceptions of job control, supportive management and job demands, which in turn, are expected to be linked to employee-wellbeing and organisational commitment.

Design/methodology/approach – Matched employee workplace data are extracted from a nationally representative and publicly available survey. Structural equation models are estimated.

Findings – Performance measurement systems are neither perceived as resources nor additional demands. Setting many targets and a focus on productivity can lead to negative employee outcomes, since these positively correlate with perceptions of job demands, which negatively correlate with employee wellbeing. However, monitoring financial performance and monitoring employee performance may be helpful to managers, as these are positively associated with employee perceptions of job control and supportive management, which positively correlate with job satisfaction and organisational commitment and, negatively, with anxiety. Overall, common criticisms of performance measurement systems in healthcare are questioned.

Originality/value – Given the lack of consensus on how performance measurement systems can influence employee experiences and outcomes, this study combines theories that argue for performance measurement systems in managing operations with models developed by psychologists to describe how perceptions of the work conditions can affect employee attitude and wellbeing. A conceptual model is therefore developed and

© Lilian M. de Menezes and Ana B. Escrig-Tena. Published by Emerald Publishing Limited. This article is published under the Creative Commons Attribution (CC BY 4.0) licence. Anyone may reproduce, distribute, translate and create derivative works of this article (for both commercial and non-commercial purposes), subject to full attribution to the original publication and authors. The full terms of this licence may be seen at <http://creativecommons.org/licenses/by/4.0/legalcode>

The authors acknowledge the UK's Department for Business, Innovation and Skills, the Advisory, Conciliation and Arbitration Service (ACAS), the Economic and Social Research Council, the Commission for Employment and Skills and the National Institute of Economic and Social Research as the originators of the 2011 Workplace Employment Relations Study (WERS) data. The Data Archive at the University of Essex is acknowledged as the distributor of the data and the National Centre for Social Research as the conductor of the survey fieldwork. None of these organizations bears any responsibility for the analysis and interpretation of the data in this study. The authors are grateful for the support from the Universitat Jaume I (Ref. UJI-B2020-55).



tested, and potential direct and indirect effects of performance measurement systems in the health sector are inferred.

Keywords Performance measurement systems, Job demands, Job resources, Employee-outcomes, British health and care sector

Paper type Research paper

1. Introduction

As in any organisation, health and care managers need to know how best to allocate resources and ensure both efficiency and quality of outcomes. Timely and accurate performance data are therefore essential for decision making and performance improvement (e.g. McDermott *et al.*, 2019; Mellat-Parast and Golmohammadi, 2019). As such, performance measurement systems are widely used and are key to evidence-based performance management. In the UK, performance measurement and monitoring in the health sector can be traced back to 1860, when Florence Nightingale pioneered the collection and analysis of data to advocate for operational change and performance improvement in hospital units (Smith, 2005).

Today, performance measurement systems typically include setting objectives, developing performance measures and monitoring performance data (Smith and Bititci, 2017). They enable the alignment of performance management with the organisational strategy, support management in identifying inefficiencies and needs for adjustments in operations (McCann *et al.*, 2015; Nuti *et al.*, 2018; McDermott *et al.*, 2019), and are about avoiding errors, thus ensuring cost-effectiveness and employee accountability (DeNisi, 2000). At the core of performance measurement systems are targets and monitoring practices, because these practices enable staff to understand what is expected of them and, importantly, how they can add value to the output. Targets aim to translate the high-level strategy into the language of teams and, ultimately, signal to each employee what to do (Melnyk *et al.*, 2004; Biron *et al.*, 2011; Franco *et al.*, 2012). With clear targets and data-driven feedback, performance measurement systems facilitate the learning that improves processes, and can therefore be a source of gains for employees and employers (Endrikat *et al.*, 2020).

Unsurprisingly, operational management principles based on performance measurement systems, such as Lean, Total Quality Management and Business Excellence models, have been widely adopted in healthcare (e.g. Elg *et al.*, 2013; Verbeeten and Speklé, 2015; Mellat-Parast and Golmohammadi, 2019; Levesque and Sutherland, 2020). Indeed, a search of the European Foundation for Quality Management Framework's recognition database (<https://shop.efqm.org/recognition-database/>) reveals hundreds of recognitions within the sector. The proactive problem-solving and factual decision-making underlying Quality Management approaches are attractive because health-workers constantly face interdependent tasks, which require that they prioritise, act quickly and independently. Moreover, a significant share of healthcare services are routine procedures that, as Quality Management advocates, can benefit from standardisation, which facilitates the measurement and monitoring of performance.

Gains from performance measurement systems, however, have been questioned. Deming (1986), one of Quality Management's gurus, argued that targets and monitoring lead to a culture of blaming others rather than the desired employee outcomes. Criticisms of performance measurement systems (e.g. Nørreklit *et al.*, 2008; Pulakos and O'Leary, 2011; Franco and Otley, 2018; Welsh *et al.*, 2019; Murphy, 2020) are largely based on case-studies and observations of perceived unrealistic and/or ambiguous targets, performance-evaluations unrelated to performance-objectives, unethical behaviours by employees striving to meet expectations, and performance-measures that are meaningless to the employee. In healthcare, such observations are not rare, and reflect how targets and performance-monitoring may impact workers. For example, Wankhade (2012) argued that by

emphasising targets and monitoring, control over the provision of care would be lost. [McCann et al. \(2015\)](#) equated performance measurement systems to information overload, work intensification, and role-conflict. These observations are of concern, since working conditions and employee wellbeing are critical for socially responsible and sustainable operations (e.g. [Gimenez et al., 2012](#)). In a sector where most employees are in direct contact with customers, employee wellbeing and attitudes can affect patients' satisfaction and operational performance. However, a case-study of Child and Adolescent Mental Health Services in England ([Ojiako et al., 2022](#)) highlighted the pros and cons of ambiguity in performance measurement systems. Accordingly, unclear targets are both a source of confusion and an enabler of creative and proactive solutions. While unclear targets suggest a lack of management understanding of the complexities involved, they can also encourage autonomy and agility. Overall, the impact of performance measurement systems on health workers remains to be clarified.

In general, the literature has tended to theorise and/or focus on assessments of individual performance (e.g. [Pulakos and O'Leary, 2011](#); [Murphy, 2020](#)). Some case-studies explored worker's experiences and perceptions of performance appraisals (e.g. [Bernstein, 2012](#)), and laboratory experiments investigated individual performance given specific targets and scenarios (e.g. [Welsh and Ordóñez, 2014](#); [Welsh et al., 2019](#)). Following literature reviews, potential outcomes have been inferred (e.g. [Ukko et al., 2007](#); [Soltani and Wilkinson, 2020](#)), but most remain to be tested. Empirical tests of conceptual models are rare, despite calls (e.g. [DeNisi and Smith, 2014](#); [Beer and Micheli, 2018](#); [Baird et al., 2022](#)) for assessments of employee reactions to performance measurement systems and implications. Since outcomes from performance management may be contingent ([de Menezes and Escrig, 2019](#)), current knowledge about respective elements may not generalise. As previously argued (e.g. [DeNisi and Murphy, 2017](#); [McDermott et al., 2019](#); [Ho and Kuvaas, 2020](#)), there remains a need to investigate employees' perceptions of the work context in which targets are set and performance is monitored.

The present study aims to develop a model of the link between performance measurement systems and employee outcomes, and to test this model by focussing on generic performance targets and monitoring. We draw on the "causal chain" ([Peccei, 2004](#); [Purcell and Kinnie, 2007](#); [Boxall, 2012](#)), which describes the links between different elements in the mediation from management practices to employee outcomes ([Wood et al., 2012](#)). Accordingly, employees react to work experiences (management practices) by expressing feelings and attitudes towards the work or organisations. Following [Karasek and Theorell \(1990\)](#), the Job Demands-Control (JDC) model is considered to explain how perceptions of work conditions (job control, supportive management, job demands) can influence employee wellbeing (job satisfaction and anxiety). As in healthcare, employees' attachment to the organisation is posited as a management tool to cope with highly uncertain environments ([de las Heras-Rosas et al., 2021](#)), how perceptions of work conditions can influence organisational commitment is also examined. Consequently, pathways from targets and monitoring practices to employee outcomes (organisational commitment and wellbeing) are inferred. Overall, this study aims to contribute to knowledge and foster research on the human aspects of managing healthcare operations, which are sometimes overlooked. It adds to the literature on employee responses to performance measurement and management (e.g. [DeNisi and Smith, 2014](#); [Beer and Micheli, 2018](#); [Baird et al., 2022](#)) and to studies on the contextual nature of performance measurement systems (e.g. [Pulakos and O'Leary, 2011](#)).

The next section provides the background to the study, defines its key concepts and reviews the literature on employee outcomes from performance measurement systems, leading to our hypotheses and conceptual model. The empirical analysis is then presented and the results are reported. Finally, the findings and implications are discussed and conclusions are drawn.

2. Background and hypotheses

2.1 Performance measurement systems

For some, a performance measurement system concerns a “set of metrics used to quantify both the efficiency and effectiveness of actions” (Neely *et al.*, 2005, p. 1229). While for others (e.g. Biron *et al.*, 2011; Aguinis, 2013), the focus is on performance measurement as an element within performance management, which may not entail a dedicated system. According to Melnyk *et al.* (2014), performance measurement is one of the two components of performance management, which involves setting goals, collecting, and analysing performance data. Within workplaces, performance measurement systems aim to identify what should be measured and support the organisational controls, and therefore involve “setting goals, developing a set of performance measures, collecting, analysing, reporting, interpreting, reviewing, and acting on performance data” (Smith and Bititci, 2017, p. 1209). From an organisational control perspective, a performance measurement system resembles a technical control system that focuses on planning, performance measures, targets and performance monitoring (Smith and Bititci, 2017; Garengo and Betto, 2022; Ojiako *et al.*, 2022). Therefore, regardless of the definition, as summarised in Table 1, targets and monitoring practices are at the core of performance measurement systems (Franco *et al.*, 2007; Melnyk *et al.*, 2014).

As Sirmon *et al.* (2011) theorised, individuals are rational and make the best use of the available information when allocating resources to manage operations. Performance metrics and records are therefore required to highlight critical success factors, support an efficient use of resources, and for performance management (Melnyk *et al.*, 2004; Koufteros *et al.*, 2014). To allocate resources efficiently, high-level objectives should be translated into coherent targets at all levels, so that resources are optimised and actions are coordinated. Drawing on Locke and Latham’s (1990) perspective on how goals can mobilise effort, Linderman *et al.* (2006) demonstrated that targets are prerequisites for performance improvements. Accordingly, clear goals and performance-monitoring provide timely factual information for rational decision-making and foster the employee attitudes that are expected in Quality Management approaches. Notwithstanding these expectations, positive effects of targets have been questioned, not only by Deming, as reported above, but also by studies that focused on understanding employee behaviours in the financial sector leading up to the 2008 crisis. Laboratory experiments (e.g. Welsh and Ordóñez, 2014) have found that challenging targets can create a results-oriented culture, where individuals develop undesirable and even unethical behaviours in pursuit of targets. Within the British health system, a culture of top-down targets, inefficient cascading of objectives, and overall mixed outcomes have been reported (e.g. McCann *et al.*, 2015; Ojiako *et al.*, 2022). In summary, targets can be counterproductive, but they can also support and improve performance. Consequently, research is needed on mechanisms via which performance measurement practices may influence employee outcomes.

	Definition	Supporting literature
Targets	Identification and setting of objectives and milestones on different dimensions of performance	Franco <i>et al.</i> (2007) Melnyk <i>et al.</i> (2014)
Monitoring	Tracking of progress on performance objectives, collecting and recording performance and related data	Smith and Bititci (2017)

Source(s): Authors’ own creation

Table 1.
Core elements of performance measurement systems

2.2 Employee-outcomes from performance measurement systems

As a performance measurement system is “shaped by the feelings, values and basic beliefs of the individuals, organisation, community and the society within which it operates” (Bititci *et al.*, 2012, pp. 310–311), outcomes are likely to be contingent on the environment and on perceptions of its elements. Recent studies (e.g. Beer and Micheli, 2018; Mackenzie and Bititci, 2023) have argued for the need to acknowledge and assess the impact of performance measurement systems on people’s experiences of the work context. In this regard, several models linking management practices to employee wellbeing (Peccei, 2004; Purcell and Kinnie, 2007; Boxall, 2012; Wood *et al.*, 2012) have hypothesised a causal chain, and shown that these links tend to be mediated by employee perceptions of work conditions. In the management literature, research (e.g. Wood *et al.*, 2012; van Wanrooy *et al.*, 2013), was inspired by Karasek’s (1979) Job Demands-Control model of and its extensions (Karasek *et al.*, 1982; Karasek and Theorell, 1990). This family of models identified different perceptions of work conditions and distinct ways that they affect employee wellbeing. Accordingly, perceptions of job demands, generally characterised as work overload and time pressure, negatively impact employee wellbeing. In contrast, perceptions of job control, i.e. of having decision latitude and discretion over one’s work, as well as perceptions of having supportive managers, who value and care about employees, can positively affect employee wellbeing (Wood *et al.*, 2020).

Warr (1990) defined three dimensions of employee wellbeing, two of which have attracted significant research and have been included in the last two surveys of the WERS series. The first is job satisfaction, which refers to the pleasure that individuals derive from their work, as for example, when their job meets or exceeds their expectations. The second is anxiety, which is a psychological state characterised by a heightened sense of unease and restlessness, and is the opposite to contentment that entails a combination of low activation and positive affect. As argued by Bryson *et al.* (2017), assessing employee wellbeing is important because of potential associations with employee performance. Job satisfaction and employee performance have been found to be positively correlated in meta-analyses (Judge *et al.*, 2001), laboratory experiments (Oswald *et al.*, 2015), cross-sectional (e.g. de Menezes, 2012) and longitudinal studies (Staw *et al.*, 1994; Zelenski *et al.*, 2008). While anxiety has been linked to absences and labour turnover, which can impact organisational performance. Bryson *et al.* (2017) further conjectured that, in workplaces, the wellbeing of one employee affects the wellbeing of others, and therefore the average level of employee wellbeing in a workplace affects overall productivity.

Perceptions of work conditions may influence other employee outcomes that can affect operational performance. Indeed, organisational commitment, which refers to the extent that an individual is attached to the organisation (Mowday, 1998), has been widely studied. As originally defined, organisational commitment concerns an employee’s feeling that drives greater efforts for the good of the organisation, a sense of belonging, and an acceptance or internalisation of organisational values. It is therefore an important outcome for operational managers, because it may lead to employee engagement and the proactive problem solving that is desired and encouraged in Quality Management. As de las Heras-Rosa *et al.* (2021) contended, given frequent uncertainties in patient demands and availability of specialised staff faced by managers in the health sector, organisational commitment becomes a “management tool” for the provision of quality care. Furthermore, from a psychological perspective, organisational commitment can mean that employees also expect recognition and support in return for their efforts. Given the above, Table 2 summarises the employee outcomes considered in the present study.

2.3 Positive employee outcomes: are performance measurement systems a resource for employees?

In principle, performance measurement systems are designed to provide clarity, objectivity, and feedback, and help individuals to work towards agreed goals (Bourne *et al.*, 2013). They

Table 2.
Employee outcomes in this study

	Definition	Supporting literature
Job control	A perception of the extent of decision latitude or discretion over how to organise and deliver the work	Karasek and Theorell (1990)
Job demands	A perception of the intensity of requirements set at work: the extent of effort needed, time pressure, or difficulty of tasks	Fila <i>et al.</i> (2017)
Supportive management	A perception of the support, acknowledgement and care that is provided by management	
Job satisfaction	A dimension of wellbeing characterised by an enjoyable state that arises when individuals evaluate their job	Warr (1990)
Anxiety	A dimension of wellbeing characterised by a heightened sense of unease and restlessness	
Organisational commitment	A feeling of attachment to the organisation/workplace characterised by a sense of belonging to the organisation and an acceptance or internalisation of the organisational values	Mowday (1998)

Source(s): Authors' own creation

can boost employee performance, as the information provided can trigger a sense of control over the work to be undertaken (Endrikat *et al.*, 2020; Van der Hauwaert *et al.*, 2022). Indeed, Bakker and Demerouti's (2017) Jobs Demands-Resources model, highlighted perceptions of supportive management and job control as work conditions that promote employee wellbeing and positive employee attitudes. According to Social Exchange Theory (Blau, 1964) and the Norm of Reciprocity (Gouldner, 1960), employees would be happier and more committed to their employer if perceptions of work conditions fulfilled or exceeded employees' expectations (Coyle-Shapiro and Kessler, 2002), and could then reciprocate with positive behaviours. Indeed, there are observations that support of these expectations. In a study of five organisations, Bititci *et al.* (2006) observed that successful performance measurement systems improved participation and employee perceptions of job control. Tättilä *et al.* (2014) argued that performance measurement systems are motivational leadership tools, in line with Elg *et al.*'s (2013) observation that performance measurement and monitoring can provide a language for collaboration and consensus, thus empowering employees to drive change. More recently, Aranda *et al.* (2023) concluded that targets improve planning and that performance measurement systems can engage employees in analysing, learning and sharing knowledge about performance data.

The JDC model links job control to greater employee wellbeing, and the predicted positive correlation between job control and job satisfaction has been often confirmed (e.g. Hoff *et al.*, 2015). Limited job control has been linked to higher levels of anxiety, dissatisfaction and disengagement (e.g. Fila *et al.*, 2017). Although the model focuses on employee wellbeing, other employee outcomes have been suggested (Jong and Ford, 2016), importantly, organisational commitment (e.g. Wong and Laschinger, 2015; de las Heras-Rosa *et al.*, 2021). Scholars (e.g. Shantz *et al.*, 2016; Fila *et al.*, 2017) have contended that if managers were supportive, relationships in the workplace would characterise positive work conditions and lead to positive employee outcomes. This argument is consistent with an extension of the JDC model by Karasek and Theorell (1990), who theorised a positive association between supportive management and employee wellbeing. Focussing on the health sector, Van Yperen and Hagedoorn (2003) linked supportive management to greater employee motivation, and von Vultée *et al.* (2007) noted that supportive work environments encouraged physicians to take on performance management responsibilities, which they would otherwise avoid. More recently, a bibliometric analysis of organisational commitment

in healthcare (de las Heras-Rosa *et al.*, 2021) identified supportive management as a predictor of organisational commitment.

Following the theoretical arguments and expectations based on case-studies described above, positive direct and indirect positive employee outcomes from performance measurement systems are hypothesised.

- H1. Performance measurement systems are positively associated with employee perceptions of job control and supportive management;
- H2. Higher levels of job control and supportive management are associated with higher levels of (a) job-related wellbeing and (b) organisational commitment;
- H3. The associations between performance measurement systems and (a) job-related wellbeing and (b) organisational commitment are mediated by employee perceptions of job control and supportive management.

2.4 Negative employee outcomes: is there a dark side to performance measurement systems?

Mainly inspired by the labour-process tradition (e.g. Ramsay *et al.*, 2000), according to which managers seek to maximise labour input by intensifying work, scholars portray performance measurement systems as a managerial control mechanism. In their view, managers rule the workforce by coercion or, more subtly, by encouraging the internalisation of organisational goals. Performance measurement systems are therefore additional job demands and a source of stress for employees (e.g. McCann *et al.*, 2015), rather than a resource, as hypothesised above. For example, Jain *et al.* (2011) argued that perceptions of work conditions are negative in the presence of multiple targets. Topicic *et al.* (2016) contended that performance measurement systems create pressure on the employee to perform and represent additional job demands. In this vein, Franco and Otley's (2018) literature review on performance management found that 81% of reviewed studies reported negative work conditions due to performance measurement systems. Studies on the dark side of targets (e.g. Welsh and Ordóñez, 2014; Welsh *et al.*, 2019) argued that multiple challenging targets lead to exhaustion and/or demotivation due to the effort required to meet objectives and the likelihood of failing.

Performance measurement systems may trigger employee perceptions of decreasing job control, which can be experienced as increasing job demands, for example when nurses feel powerless and drowned in a sea of paperwork (Neno, 2008), or as Ippolito *et al.* (2022) argued that such systems can hinder decision-making. Indeed, perceptions of additional or unnecessary job demands have been linked to failures of continuous improvement initiatives in healthcare. Nembhard *et al.* (2009) highlighted negative employee attitudes to targets and information flows that characterise performance management systems, and similar observations led Schnoor *et al.* (2019) to conclude that performance measurement systems are unnecessary distractions for healthcare workers. Oliver (2012), however, offered an alternative perspective on the impact of targets in the health sector. Drawing on Identity Economics (Akerlof and Kranton, 2010), the author contended that managers can attempt to motivate employees in ways that internalise organisational targets and ensure positive outcomes. However, it was argued that when targets contradict employees' perceptions of identity-utility (e.g. public-service spirit or solidarity with the needy) rather than giving employees a sense of direction, targets increase perceptions of workload, which in turn generate anxiety.

Given the influence of New Public Management in Britain, particularly in the health sector (Simonet, 2015), critical management studies have linked targets, performance measurement and monitoring to job demands (e.g. Carter *et al.*, 2011; White, 2019). Accordingly, performance measurement systems are synonymous with stress and fatigue. For example,

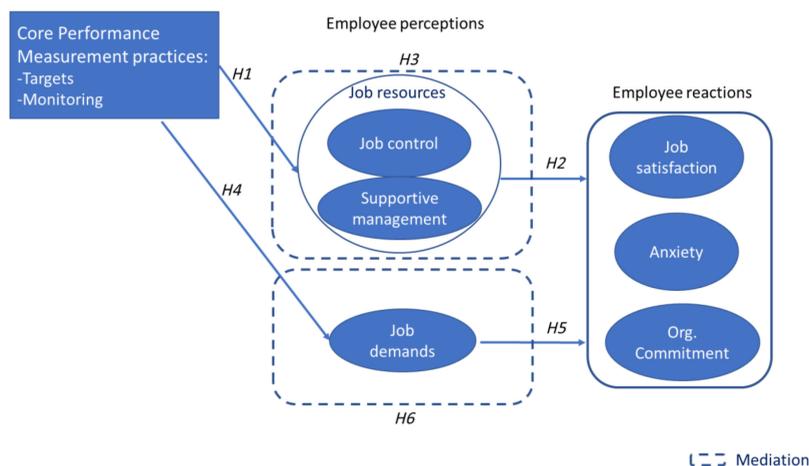
Bolton (2004) argued that performance measurement systems meant that nurses struggled to provide high-quality care due to the perception that competence was being challenged by performance appraisals. McCann *et al.* (2015) maintained that targets and monitoring turned the daily experience of healthcare workers into one of reconciling the logics of business efficiency with the integrity of care.

As described, the JDC model predicts that higher job demands and/or low levels of job control will increase anxiety and decrease job satisfaction. In this context, Bowling *et al.* (2015) explained the negative relationship between job demands and job satisfaction through the conservation of resources theory, which implies that increasing job demands require further resources, and therefore negatively impact employee wellbeing. An analogy is plausible with respect to organisational commitment, since decreasing levels of job control, or increasing job demands, amount to a loss of resources that can negatively affect organisational commitment (de las Heras-Rosas *et al.*, 2021). Indeed, after investigating work experiences and reactions of clinical managers, Wong and Laschinger (2015) concluded that high job demands were associated with low organisational commitment.

In summary, there may be a dark side to performance measurement systems, as negative employee outcomes are hypothesised.

- H4. Performance measurement systems are positively associated with employee perceptions of job demands.
- H5. Higher levels of employee perceptions of job demands are associated with lower levels of (a) job-related wellbeing and (b) organisational commitment.
- H6. The associations between performance measurement systems and (a) job-related wellbeing and (b) organisational commitment will be mediated by employee perceptions of job demands.

All hypotheses are summarised in Figure 1, which depicts alternative views of performance measurement systems and their likely consequences for employee wellbeing and employee organisational commitment.



Source(s): Authors own creation

Figure 1. Pathways to employee outcomes

3. Methodology

3.1 Data

The context of the study is the British health and care sector, where several authors (e.g. [Mannion and Braithwaite, 2012](#)) have been very critical of performance measurement systems. Our hypotheses are tested using data from 2011, when this sector accounted for 10.4% of total employment in the European Union. Compared to other sectors at that time, the workforce was predominantly female, with higher proportions of part-time and older workers. While most sectors of the UK economy contracted after the 2008 crisis, employment in the health sector grew. However, this growth was small in the face of increasing demand from an ageing and growing population, which experienced the largest ten-year increase since the early 1960s ([Schulz, 2013](#)). Data from the Workplace Employment Relations Survey (WERS2011) is used, where performance measurement practices and processes are inferred at the workplace [1], which is desirable for higher-level analysis ([Gerhart et al., 2000](#)) because the implementation of management practices often varies within the same organisation. In addition, the Department of Health's consultations and reports, at that time, highlighted a concern about performance measurement and monitoring, with different types of targets and performance indicators cascading across the sector. These were described as a move-away from a centrally-driven performance management that emphasised processes to local-level performance management focused on outcomes ([Department of Health, 2010](#)).

The sample is representative of private and public health and care workplaces in Britain, during a relatively stable period, when there was strong emphasis on quality and outcomes ([Propper et al., 2010](#); [Gillam et al., 2012](#)) and the pressures following the latest pandemic and staff shortages were not daily headlines. An analysis of this sample is important, because research on this sector has tended to focus on large public sector hospitals and trusts, with limited attention paid to small private units and their staff ([Guy, 2019](#)), despite their significance to the British economy and to the healthcare system in particular ([Boyle, 2011](#)).

Selected questions from WERS2011 Management and Employee surveys (<http://www.wers2011.info>) are summarised in the [Appendix \(Table A1\)](#). Out of 2,680 workplaces that participated in the survey, 427 are in the health and care sector, which includes human health activities, residential care and social work activities without accommodation. Workplace-level data (use of types of targets and monitoring practices) are from the management survey, where a senior manager participated in a semi-structured interview. In 81% of the workplaces surveyed, permission was given for the distribution of a questionnaire to up to 25 employees that were randomly selected. When employee workplace data are matched in the sample, there are 320 workplaces and 3,696 employees, therefore, 74.9% of workplaces provided employee data.

After removing random outliers, the sample comprises 319 workplaces and 3,600 employees. Most workplaces in the sample are private (54.9%) [2], and have less than 250 employees (72.4%). Concerning the size of workplaces, WERS2011 surveyed workplaces with five or more employees. In this sample, the median number of employees is 59, and the distribution of number of employees is skewed with large standard deviation (1715.18), so the variable workplace-size is measured as the logarithm of number of employees. Regarding individual characteristics, most employees are aged 40 or older (64.8%), female (82%), have permanent contracts (93.8%), and 51.5% had been employed in the workplace for at least five years, in a full time-basis (54.5%), over a third were managers (36%). Overall, the composition of the workforce is consistent with descriptions of the European Union's health sector (e.g. [Schulz, 2013](#)) at the time of data collection.

3.2 Workplace-level measures

The data on management practices are binary indicators of use in a workplace, and this measurement is common in studies of management practices (e.g. [Topcic et al., 2016](#)).

Following the definitions of performance measurement systems presented in [section 2.1](#), targets and monitoring practices are at their core. Thus, consistent with previous literature (e.g. [Melnik et al., 2014](#)), the focus is on workplace performance-related targets and their monitoring as well as the monitoring of employee performance. Binary indicators of the use of each type of target and elements of monitoring are considered. The respective questions from the management interview are shown in [Table A1](#). Each type of target or performance indicator (e.g. quality, volume, productivity) correspond to multiple local-level objectives that generally reflect national targets, which are set by the Department of Health, as for example to guarantee minimum quality-standards, speedy responses to emergencies or life-threatening conditions, or reduce health inequalities ([Boyle, 2011](#)).

Principal Component Analysis (PCA) of tetrachoric correlations of these binary variables imply several dimensions. Hence, financial performance targets are measured by the first four targets in [Table A1](#), corresponding to the first component that explains 72% of the variance in use of these targets. Similarly, monitoring financial performance explains 72% of the variance of the corresponding (first four) variables in [Table A1 \[3\]](#). The other practices (productivity and quality-related targets and monitoring; monitoring employee performance), remain as binary variables. Measures of types of targets and monitoring are summarised in the first seven rows of [Table 3](#), and are used in the analysis that follows.

As reported in [section 2.4](#), several authors (e.g. [Jain et al., 2011](#)) expressed concerns about the consequences for employees of having multiple types of targets, thus an additional measure attempts to capture the intensity of targets in the workplace in relation to the sector. It is given by the standardised number of targets based on all possibilities available in the dataset, thus also including human resources: training, workforce job satisfaction, level of absenteeism, and labour turnover. It is noteworthy that the average number of types of targets in workplaces within the sector (mean = 4.7) is not significantly different, at the 5% level, to the average number of types of targets in the whole data (mean = 5).

The distribution of practice use ([Appendix – Table A2](#)) shows that most types of performance targets are less common in the health and care sector. However, the use of performance monitoring practices is homogeneous.

3.3 Employee-level measures

Corresponding questions from the survey are also summarised in [Table A1](#). Job demands follows [van Wanrooy et al. \(2013\)](#) and is common to various applications of the JDC Model. This measure combines perceptions of time pressure and workload, which is the most important factor driving perceptions of job demands among nursing staff ([Broetje et al., 2020](#)). It is the mean of responses to the two related questions (Composite reliability = 0.68). Job control and supportive management are measured following [Wood \(2008\)](#). The former is the mean of responses to the five questions on employee influence over aspects of work (Composite reliability = 0.85), and the latter is measured via six items concerning how the employee would characterise managers in their workplace (Composite reliability = 0.93). As in [Wood and de Menezes' \(2011\)](#) study of management practices and wellbeing, this measure of supportive management infers management's integrity, consistency and concern for employee needs. It conveys an employee centric leadership style and was inspired by the measures of trustworthy behaviours ([Whitener et al., 1998](#)) described by [Guest et al. \(2007\)](#).

Employee-wellbeing measures concern two of three dimensions defined by [Warr \(1990\)](#), which are common in the work-psychology literature and were therefore included in WERS surveys. Principal component analysis of the nine items of job satisfaction in [Table A1](#) confirmed a single dimension (Composite reliability = 0.87), and corroborate studies (e.g. [Pick and Teo, 2017](#)) that adopted the scale by [Warr et al. \(1979\)](#). Similarly, the second dimension, anxiety–contentment, where anxiety combines high activation and negative affect, is

Table 3.
Descriptive statistics
and correlations

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
<i>Workplace level</i>															
1. Financial performance targets	36.01		-												
2. Productivity targets	36.20		0.50**	-											
3. Quality related targets	64.20		0.40**	0.38**	-										
4. Monitoring financial performance	76.33		0.30**	0.19**	0.13*	-									
5. Monitoring productivity	56.70		0.32**	0.43**	0.24**	0.37**	-								
6. Monitoring employee performance	85.50		-0.03	-0.10	0.02	-0.06	-0.03	-							
7. Monitoring quality	73.4		0.24**	0.24**	0.31**	0.28**	0.42**	-0.02	-						
8. Job control	3.09	0.33	-0.04	-0.08	-0.08	0.02	-0.15**	0.09	-0.11	-					
9. Job demands	3.82	0.37	0.11	0.09	0.09	0.01	0.12*	-0.07	0.10	-0.08	-				
10. Supportive management	3.46	0.49	-0.10	-0.08	-0.11*	0.07	-0.09	0.13*	-0.05	0.33**	-0.39**	-			
11. Job satisfaction	3.59	0.32	-0.07	-0.06	-0.02	0.16**	-0.04	0.11	0.03	0.36**	-0.33**	0.76**	-		
12. Anxiety	2.29	0.42	0.06	0.03	0.01	-0.09	0.05	-0.09	-0.03	-0.16**	0.52**	-0.55**	-0.61**	-	
13. Organisational commitment	3.87	0.36	-0.09	0.03	-0.06	0.13*	0.06	0.05	0.05	0.26**	-0.24**	0.70**	0.67**	-0.43**	-
Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
<i>Employee-level</i>															
1. Job control	3.08	0.72	-												
2. Job demands	3.83	0.75	-0.03	-											
3. Supportive management	3.47	0.91	0.30**	-0.18**	-										
4. Job satisfaction	3.60	0.67	0.44**	-0.15**	0.66**	-									
5. Anxiety	2.28	0.91	-0.15**	0.38**	-0.39**	-0.46**	-								
6. Organisational commitment	3.88	0.75	0.31**	-0.06**	0.56**	0.58**	-0.31**	-							
Note(s): 277 \leq n \leq 319; 3,470 \leq n \leq 3,600 *p \leq 0.05 **p \leq 0.01															
Source(s): Authors' own creation															

measured as the mean of respective items in Table A1 (Bryson *et al.*, 2017). As expected, the scale forms a single dimension (Composite reliability = 0.85). Following van Wanrooy *et al.* (2013), the mean of the three last items in Table A1 measures affective organisational commitment (Composite reliability = 0.84). Based on WERS2011 and *t*-tests (5% significance level), on average, employees in healthcare perceive greater job demands and managerial support, are more anxious, but more satisfied with their jobs and more committed to their organisation.

3.4 Variables in the models

As shown in Table 3, correlations are weak. The stronger associations concern supportive management, job satisfaction and organisational commitment. Monitoring employee performance appears to be used independently of other practices.

Workplace-level controls are: workplace-size, and public or private status. While at the level of employee, individual characteristics that have been associated with employee outcomes are used as controls: being a manager, gender, low earnings, fulltime, level of qualification and ethnicity.

3.5 Analysis procedure

For each employee reaction (job satisfaction, anxiety and organisational commitment) a separate model is estimated, thus assessing pathways from: (1) types of targets, (2) the intensity of targets, and (3) monitoring. Following previous mediation analyses (e.g. Van De Voorde *et al.*, 2016), the procedure by MacKinnon *et al.* (2007) is adopted: to infer mediation, a significant correlation between the independent variable and the mediator, as well as between the mediator and the dependent variable must be observed.

Structural equation models are estimated via maximum likelihood using Stata 16. Path regressions are weighted using the employee sampling weights available in WERS2011, thus associations in the British health and care sector are inferred based on the sample. Since employees within a workplace are subject to similar work-environments, the standard assumption of normal and independently distributed errors would not be suitable, thus the variance-covariance matrix of the estimators is computed using the options *robust* and *cluster*. Errors are allowed to correlate within workplaces. Estimated coefficients are robust to heteroskedastic errors. Missing values are random and are deleted (pairwise), when each model is estimated. Consequently, sample sizes vary: ranging from 301 to 316 workplaces, and from 2,964 to 3,099 employees. Goodness-of-fit is assessed via the Standardised Root Mean Squared Residual (SRMR).

4. Results

Table 4 summarises the significant pathways, obtained from the models estimated for each employee outcome, where the independent variables are the different types of targets, intensity of targets, and the monitoring elements at workplace and employee levels. Goodness-of-fit varied slightly, with SRMR ranging from 0.050 to 0.068. No significant direct association between a type of target and perceptions of work conditions nor indirect association with employee outcomes were found. Accordingly, Table 4 indicates the likely impacts of the intensity of targets and of different elements in monitoring.

4.1 Positive employee outcomes

As shown in Table 4, the models corroborate positive correlations between monitoring employee performance and both job control and perceptions of supportive management (*p*-values <0.05). Monitoring financial performance are also positively associated with

	Job satisfaction		Employee outcomes Anxiety		Org. Commitment	
	Coefficient (S.E.)	p-value	Coefficient (S.E.)	p-value	Coefficient (S.E.)	p-value
<i>Direct effects from targets and monitoring to perceptions of work conditions</i>						
Job control						
Monitoring employee- performance → job control	+0.050 (0.052)	0.040*	+0.050 (0.052)	0.040*	+0.051 (0.052)	0.035*
Supportive management						
Monitoring financial performance → supportive management	+0.083 (0.116)	0.019*	+0.083 (0.116)	0.018*	+0.085 (0.117)	0.017*
Monitoring employee- performance →supportive management	+0.072 (0.079)	0.013*	+0.069 (0.078)	0.015*	+0.074 (0.080)	0.012*
Job demands						
Intensity of targets →job demands	+0.067 (0.020)	0.017*	+0.064 (0.020)	0.021*	+0.068 (0.020)	0.015*
Monitoring productivity →job demands	+0.093 (0.045)	0.002**	+0.095 (0.045)	0.002**	+0.095 (0.045)	0.001**
Monitoring employee- performance →job demands	-0.045 (0.048)	0.038*	-0.042 (0.048)	0.049*	-0.047 (0.048)	0.028*
<i>Direct effects from work conditions to employee outcomes ^(a)</i>						
Job control→outcome	0.280 (0.015)	0.000**	-0.087 (0.024)	0.000**	0.162 (0.022)	0.000**
Supportive management→outcome	0.620 (0.012)	0.000**	-0.326 (0.021)	0.000**	0.549 (0.018)	0.000**
Job demands→outcome	-0.030 (0.015)	0.095	0.306 (0.028)	0.000**	0.031 (0.021)	0.152
<i>Indirect effects from targets and monitoring to employee outcomes</i>						
Intensity of targets → outcome	-0.058 (0.016)	0.031*	+0.045 (0.015)	0.011*	-0.043 (0.015)	0.051
Monitoring financial performance→ outcome	+0.054 (0.060)	0.035*	-0.041 (0.052)	0.012*	+0.046 (0.055)	0.028*
Monitoring productivity→ outcome	-0.060 (0.038)	0.037*	+0.056 (0.034)	0.004**	-0.042 (0.035)	0.077
Monitoring employee- performance→ outcome	+0.060 (0.038)	0.002**	-0.040 (0.034)	0.003**	+0.047 (0.36)	0.004**
Note(s): Standardised coefficients are reported; * $p \leq 0.05$ ** $p \leq 0.01$						
^(a) For reasons of parsimony, only the figures in the models for monitoring are reported. The figures in the models for targets lead to the same conclusions						
Source(s): Authors' own creation						

Table 4.
Significant pathways

perceptions of supportive management (p -values < 0.05). Hence, **H1** is partially supported for some elements of monitoring. In addition, both job control and supportive management are positively associated with job satisfaction and organisational commitment, and negatively associated with anxiety (p -values = 0.00). **H2** is thus supported.

Consistent with the associations reported above and the estimates in the lower part of **Table 4**, indirect associations are through employee perceptions of job control and supportive management. Particularly, monitoring financial performance have positive indirect association with job satisfaction ($b = 0.054$, $p = 0.035$) and organisational commitment

($b = 0.046, p = 0.028$), and negative indirect association with anxiety ($b = -0.041, p = 0.012$). Analogous indirect pathways are observed from monitoring employee performance to job satisfaction ($b = 0.060, p = 0.002$), organisational commitment ($b = 0.047, p = 0.004$), and anxiety ($b = -0.040, p = 0.003$). Hence, the indirect effects support a causal chain from some elements of monitoring via job control and supportive management. **H3** is partially supported.

4.2 Negative employee outcomes

Table 4 indicates that the higher the intensity of targets, the greater the perceptions of job demands (p -values < 0.05). Similar association is found concerning monitoring productivity and job demands (p -values < 0.01). However, monitoring employee performance is negatively associated with perceptions of job demands (p -values < 0.05). Hence, **H4** is partially supported.

Perceptions of job demands are positively associated with anxiety ($b = 0.306, p = 0.000$). Yet, perceptions of job demands are neither negatively associated with levels of job satisfaction nor with organisational commitment (p -values > 0.05). **H5** is partially supported.

Intensity of targets and monitoring productivity are negatively associated with employee wellbeing via perceptions of job demands, which partially supports **H6**. **Table 4** also implies negative indirect associations with job satisfaction ($b = -0.058, p = 0.031$ for intensity of targets; $b = -0.060, p = 0.037$, for monitoring productivity) and positive indirect association with anxiety ($b = 0.045, p = 0.011$, for intensity of targets; $b = 0.056, p = 0.004$, for monitoring productivity). As a whole, organisational commitment is found to be independent of the different types of targets and monitoring at workplace and employee levels. However, marginal negative association with the intensity of targets ($b = -0.043, p = 0.051$) is observed.

5. Discussion

5.1 On findings and implications

5.1.1 Pros-and-cons of performance measurement systems in British healthcare. As a whole, the findings imply different effects from performance measurement systems. While the nature of targets appears unlikely to affect employees, some elements of performance measurement systems may increase perceptions of job demands and, in turn, lower levels of employee wellbeing, other elements may be experienced as a resource and trigger positive employee outcomes. Monitoring employee and financial performances may imply positive employee outcomes. However, where multiple types of targets are present and/or productivity is monitored, employee perceptions of job demands are likely to be higher, which can negatively impact employee wellbeing. These findings corroborate a study on the transformation of urgent and emergency care services in England ([NHS England, 2013](#)), which described a scenario where health-workers strived to maintain performance against multiple productivity standards. In fact, unintended outcomes from a multitude of targets has been a concern expressed in several experiments and case-studies (e.g. [Jain et al., 2011](#); [Welsh and Ordóñez, 2014](#); [Welsh et al., 2019](#)), which motivated our analysis of intensity of targets. [Neno \(2008, p. 10\)](#) illustrated this common concern: “there are too many targets, too many restructures and too much cost cutting, so let’s stop squeezing care out of the health equation”. Indeed, for each type of target captured in the data, there would be subsets of cascading targets. For example, the NHS Outcomes Framework 2011/12 ([Department of Health, 2010](#)) included at least two domains that would broadly fall under quality-related objectives, under which there were dozens that would translate into specific targets and monitoring practices, which might have varied significantly with type of workplace (clinic, hospital, pharmacy, etc.). The different layers highlight the challenge of collecting data that

would allow for greater coverage of performance measurement practices, as well as the trade-offs between having a national representative sample and a general model as in this study, versus detailed case-studies of small numbers of workplaces that prevail in the literature. With a general model and inferences at the population, we expect lower but also meaningful correlations. Hence, an additional concern relates to potentially negative effects of monitoring productivity, especially when reports from the period (Gillam *et al.*, 2012; Propper *et al.*, 2010) stressed targeted reductions in waiting times and financial incentives across England with the aim of improving productivity in the health sector.

There is limited support for a dark side to performance measurement systems, but beneficial employee outcomes may stem from a few performance measurement practices. The positive indirect association of monitoring employee performance with employee wellbeing and organisational commitment is encouraging, and underscores that in highly demanding work environments, such as described by Bolton (2004) and Wingerden *et al.* (2016), monitoring employee performance may facilitate reflections on work processes and objectives, which can improve communication in the workplace (Elg *et al.*, 2013; Aranda *et al.*, 2023). This may vindicate the popularity of performance-appraisals in Britain, as the main tool to monitor employee performance. Among management practices covered in the WERS series, the use of performance-appraisals experienced the strongest growth (van Wanrooy *et al.*, 2013). Notwithstanding these findings, a recent meta-analytic review implies that efficient monitoring of employee performance may be contingent on frequency of discussions, on how performance is rated, and on ensuring that performance standards are clear and understood (Pichler *et al.*, 2020). It is possible that the regulatory framework that guides standards in the health sector facilitates employee performance monitoring, and this potential moderation is an avenue for future investigation.

Given reports of budget cuts in the period, with “the government demanding 20% of savings in the sector” (Dault, 2011, p. 11), the association between monitoring financial performance and positive employee outcomes may be surprising. However, as noted by Propper *et al.* (2010), performance measurement practices in the health sector tend to work well when employees understand their logic and need. Monitoring financial performance may signal to the employee that efficiency and sustainable operations are valued, thus reinforcing health-workers perceptions of healthcare as a universal right. Yet, Signalling Theory (Spence, 1973) would also suggest lagged effects, for which longitudinal data would be required.

5.1.2 Characteristics of the sample and employee outcomes. Although the sample is predominantly female with a large share of flexible workers, there is no evidence in support of differences in perceptions of working conditions and employee outcomes with respect to gender or mode of work. Considering the control variables, differences in employee wellbeing and organisational commitment are observed. Greater levels of job satisfaction and organisational commitment are found in larger and private workplaces. Managers are more satisfied with their jobs than non-managers, but graduates and full-time workers are more anxious. Being white positively correlates with anxiety, which however is negatively associated with the size of the workplace. Given these differences, it is important to infer how perceptions of work conditions may improve employee outcomes.

5.1.3 Perceptions of work conditions and employee outcomes: do predictions by the JDC model hold? Expectations of positive associations between job control or supportive management and employee wellbeing are confirmed. In spite of high demands and complexity that characterise healthcare (Wingerden *et al.*, 2016), perceptions of job control and supportive management can increase employee wellbeing, thus corroborating previous findings on active jobs (de Jonge *et al.*, 2000) and underscoring that feelings of control and support are key resources for health-workers (Broetje *et al.*, 2020). Similarly, supportive management positively correlates with organisational commitment, as recently argued by de las Heras-Rosas *et al.* (2021).

Perceptions of job demands positively correlate with anxiety, but they are neither associated with job satisfaction nor organisational commitment. Although unexpected, these findings are consistent with contemporaneous assessments by the Care Quality Commission, which reported rising levels of job satisfaction in the NHS despite ongoing shortage of staff (Dean, 2010), and by descriptions of nurses enthusiastically working under pressure (Nursing Management, 2009). A potential explanation may have been provided by Goštautaitė *et al.* (2020), who noted that most health-workers have a “sense of calling” and work motivated by the desire to care for others. Following Oliver (2012), health-workers would have high identity utility, which may imply greater resilience to job demands. However, drawing on observations by Gould-Williams *et al.* (2014), health-workers may self-impose pressures to respond to patients’ needs, which can increase anxiety. Hence, avenues for future research include potential moderations of identity utility, sense of calling and perceptions of the employee-employer contract, and possible interactions with employee characteristics.

Although the JDC Model and extensions predict moderations of job control and supportive management on the associations between job demands and employee wellbeing, these interactions are not confirmed, and thus there is no support for the predicted moderations. This seems consistent with the lack of association between job demands and job satisfaction, which was discussed above. In this respect, while reviewing the literature on the JDC Model, McClenahan *et al.* (2007) linked the absence of the predicted moderation to homogeneity in the distributions of individual characteristics in the data studied. Hence, it could be that common characteristics of health-workers support an additive effect on job satisfaction, rather than moderation of job control and supportive management on the association of job demands with job satisfaction. In all, whether and how the JDC Model is contingent on other variables remains a research question (Lesener *et al.*, 2019).

5.1.4 From performance measurement systems to performance: is there a causal chain ? Following research on the management-performance nexus (e.g. Wood *et al.*, 2012; Peccei and Van De Voorde, 2019), the causal chain in Figure 1 may be extended so that the final outcome is workplace-level performance. In the data, two measures for workplace performance are relevant to the health sector: the managerial respondent’s assessments of labour productivity and quality of service in relation to the average in the sector within a 5-point scale. After considering their distribution, the two lowest categories for labour productivity are merged, thus leading to a 4-point scale; similarly, quality of service is reduced to a 3-point scale. Each of these variables are then added as the final outcome in the structural equation models, and a double mediation is tested. The results confirm positive associations between some employee perceptions and reactions (job control, supportive management, job satisfaction) and workplace performance (p -values < 0.01). These corroborate expectations based on previous studies of WERS2011 (e.g. Wood and de Menezes, 2011; Bryson *et al.*, 2017; Wood *et al.*, 2020) on association with employee wellbeing. However, according to the results, job demands, anxiety, and organisational commitment do not predict performance of health and care workplaces in Britain. The lack of association between anxiety and workplace performance supports conclusions by Wood *et al.* (2012), who used similar data but focused on the whole economy, however, it contradicts theoretical expectations and the meta-analysis reported by Bryson *et al.* (2017).

Considering indirect effects of targets and monitoring, there is barely support for a causal chain. The total effect of the intensity of targets on labour productivity is close to significant ($0.05 < p$ -value < 0.09). Since the regulatory framework (Department of Health, 2010) included many specific operational targets and productivity indicators (e.g. waiting times per type of service, number of patients treated per illness, sizes of waiting lists), which are bundled in the data, the association between the intensity of targets and labour productivity deserves further investigation, which will require more detailed data. Only monitoring employee performance is positively associated with labour productivity and quality of services via job

satisfaction (p -values ≤ 0.05), thus confirming the importance of job satisfaction for labour productivity. In summary, performance measurement systems that focus on few targets and monitor employee performance, when enabling perceptions of job control and support, may improve job satisfaction and contribute to performance.

5.2 Practical implications

Following the above, managers in the health sector can rely on monitoring employee performance and on monitoring financial performance. Monitoring productivity, however, may negatively affect employees. The nature of targets appears to be irrelevant for employees' perceptions of work conditions, and what seems to impact employees is the multitude of targets.

Setting many types of targets can be counter-productive. Nonetheless, as [Levesque and Sutherland \(2020\)](#) warned, very simple performance measurement systems can become insensitive to complexity and measurement. The challenge for managers is to ensure consistency in targets and what has been and will be monitored at employee level. This is important, despite health workers appearing to be more resilient to high demands, the long-term effects of job demands can be greater when individuals have high levels of calling ([Wilson and Britt, 2021](#)). In fact, lagged and accumulated effects of job demands have been associated with labour turnover, shortage of staff, and calls for better pay and rewards in the sector ([de las Heras-Rosas, 2021](#)). It is noteworthy therefore that supportive managers and delegative managers may make a difference, as perceptions of supportive management and job control are confirmed to be associated with job satisfaction and organisational commitment.

5.3 Limitations and future lines of research

As with most studies, there are limitations, and these mostly stem from using large and representative data that was collected for many purposes. Hence, the present study provides a general aggregate picture, which may smooth out some variance and lack detail. Given the many parameters estimated relative to the number of observations at workplace level, the number of control variables had to be small. A comparison between public and private sector workplaces and an assessment on any effect of size, which are desirable following the differences observed, were deemed unreliable. In addition, as with any cross-sectional study, time-dependent or lagged associations cannot be captured. Given theoretical perspectives and as discussed above, longitudinal analysis may improve our understanding of how performance measurements impact health-workers and performance in the sector.

Longitudinal data focused on performance measurement practices combined with structured interviews are welcome. However, the efforts and costs of gathering such data in the current climate are prohibitive to most academic researchers, and thus the present study relied on WERS2011, and the relative age of the data can be a concern. In this respect, reports by academics and practitioners ([Doulton, 2011](#); [Sprinks, 2013](#); [Broetje et al., 2020](#); [de las Heras-Rosas, 2021](#)) may give us some confidence, as factors driving perceptions of work conditions in the British health sector do not change over overtime, what may vary is their intensity as [Doulton \(2011\)](#) illustrated by quoting experiences and reflections of a nurse's 23 years of work in the sector. Hence, future research may focus on specific jobs, explore the differences observed, e.g. between managers and non-managers, and assess the role of individual characteristics, professional identity ([Shantz et al., 2016](#)), sense of calling, and other contextual variables at different levels. As shifts are common and attitudes to flexible-working have changed post-pandemic, there may be implications to a sector where most work in the frontline and are unlikely to have the flexibility that others now take for granted. Future studies may therefore consider how perceptions of the employment contract and exchanges translate to performance management, and especially how line-managers attitudes to employee performance monitoring

may contribute to outcomes. Moreover, as explanations for positive effects of monitoring employee performance drawn from previous literature assumed or highlighted good communication, future studies may investigate the role of consultative management, i.e. the extent to which employees and their representatives are consulted, and whether it adds or moderates the effects of supportive management. This is important in the light of the key factors that Broetje *et al.* (2020) identified as resourceful to health-workers and expectations that job demands in the sector are unlikely to decrease (Doult, 2011; de las Heras-Rosas *et al.*, 2021).

6. Conclusion

This study adds empirical evidence based on a large representative sample to a literature that has, as underscored by different reviews, most relied on qualitative case-studies and laboratory experiments in artificial settings. The focus was on the British sector, where performance measurement systems are adopted widely, reflecting national standards and objectives, but have been subject of ongoing criticisms following from observations and expectations of negative effects on employee wellbeing.

Although few elements of performance measurement systems were associated with employee outcomes, monitoring employee performance appears to pay off, as this may increase employee perceptions of having decision latitude and support, which are linked to job satisfaction that, in turn, may positively affect labour productivity. Monitoring employee performance is also indirectly associated with organisational commitment, which is an important tool for managers given the pressures faced by the health sector. In addition, monitoring financial performance may foster job satisfaction and organisational commitment, as well as reduce levels of employee anxiety. By contrast, setting a multitude of targets and monitoring productivity may increase perceptions of job demands and, indirectly, reduce employee wellbeing.

In all, this study illustrates how different performance measurement practices may have distinct impact on health-workers, with a few core practices acting as a resource to employees, while others are perceived as additional demands in the job. There are trade-offs involved in elements of performance management, and the right balance may depend on context, thus leading to several avenues for future research.

Notes

1. A workplace is an establishment where people work, in the WERS series, a workplace concerns “the activities of a single employer at a single set of premises” (https://doc.ukdataservice.ac.uk/doc/4511/mrdoc/pdf/4511_wers_interviewer_handbook.pdf). In a health and care context, it could be a hospital, a dental clinic, a care-home, a physiotherapy clinic, a counselling practice, etc.
2. Although the National Health Service (NHS) is the largest employer in British healthcare, the private sector should not be overlooked. The ratio of government to non-government healthcare expenditures is about 4:1. The private sector accounts for 78% of residential care for the older and 86% of places in nursing homes (Racounter n.d.). It has been increasingly involved in the delivery of NHS care, including through general practitioners and the provision of temporary and specialist workforce (Boyle, 2011; Kings Fund, 2014).
3. This observation may not be surprising given the review by Gillam *et al.* (2012) that highlighted a general concern with costs, pay for performance and large investments in monitoring.

References

- Aguinis, H. (2013), *Performance Management*, 3rd ed., Pearson/Prentice Hall, Upper Saddle River, NJ.
- Akerlof, G.A. and Kranton, R.E. (2010), *Identity Economics How Our Identities Shape Our Work, Wages, and Well-Being*, Princeton University Press, Princeton, NJ.

- Aranda, L.E., Arif, Z., Innocenti, C., Wahid, S.S., Frehywot, S. and Munar, W. (2023), "Characterizing the implementation of performance management interventions in a primary health care system: a case study of the Salud Mesoamerica Initiative in El Salvador", *Health Policy and Planning*, Vol. 38 No. 5, pp. 579-592.
- Baird, K., Su, S.X. and Nuhu, N. (2022), "The mediating role of fairness on the effectiveness of strategic performance measurement systems", *Personnel Review*, Vol. 51 No. 5, pp. 1491-1517.
- Bakker, A.B. and Demerouti, E. (2017), "Job demands-resources theory: taking stock and looking forward", *Journal of Occupational Health Psychology*, Vol. 22 No. 3, pp. 273-285.
- Beer, H.A. and Micheli, P. (2018), "Advancing performance measurement theory by focusing on subjects: lessons from the measurement of social value", *International Journal of Management Reviews*, Vol. 20 No. 3, pp. 755-771.
- Bernstein, E.S. (2012), "The transparency paradox: a role for privacy in organizational learning and operational control", *Administrative Science Quarterly*, Vol. 57 No. 2, pp. 181-216.
- Biron, M., Farndale, E. and Paauwe, J. (2011), "Performance management effectiveness: lessons from world-leading firms", *International Journal of Human Resource Management*, Vol. 22 No. 6, pp. 1294-1311.
- Bititci, U.S., Mendibil, K., Nudurupati, S., Garengo, P. and Turner, T. (2006), "Dynamics of performance measurement and organisational culture", *International Journal of Operations and Production Management*, Vol. 26 No. 12, pp. 1325-1350.
- Bititci, U., Garengo, P., Dörfler, V. and Nudurupati, S. (2012), "Performance measurement: challenges for tomorrow", *International Journal of Management Reviews*, Vol. 14 No. 3, pp. 305-327.
- Blau, P. (1964), *Exchange and Power in Social Life*, Wiley, New York.
- Bolton, S.C. (2004), "A simple matter of control? NHS hospital nurses and new management", *Journal of Management Studies*, Vol. 41 No. 2, pp. 317-333.
- Bourne, M., Pavlov, A., Franco, M., Lucianetti, L. and Mura, M. (2013), "Generating organisational performance. The contributing effects of performance measurement and human resource management practices", *International Journal of Operations and Production Management*, Vol. 33 Nos 11/12, pp. 1599-1622.
- Bowling, N.A., Alarcon, G.M., Bragg, C.B. and Hartman, M.J. (2015), "A meta-analytic examination of the potential correlates and consequences of workload", *Work and Stress*, Vol. 29 No. 2, pp. 95-113.
- Boxall, P. (2012), "High-performance work systems: what, why, how and for whom?", *Asia Pacific Journal of Human Resources*, Vol. 50 No. 2, pp. 169-186.
- Boyle, S. (2011), "United Kingdom (England): health system review", *Health Systems in Transition*, Vol. 13 No. 1, pp. 1-486.
- Broetje, S., Jenny, G.J. and Bauer, G.F. (2020), "The key job demands and resources of nursing staff: an integrative review of reviews", *Frontiers in Psychology*, Vol. 11, p. 84.
- Bryson, A., Forth, J. and Stokes, L. (2017), "Does employees' subjective well-being affect workplace performance?", *Human Relations*, Vol. 70 No. 8, pp. 1017-1037.
- Carter, B., Danford, A., Howcroft, D., Richardson, H., Smith, A. and Taylor, P. (2011), "'All they lack is a chain': lean and the new performance management in the British civil service", *New Technology, Work and Employment*, Vol. 26 No. 2, pp. 83-97.
- Coyle-Shapiro, J.A.M. and Kessler, I. (2002), "Exploring reciprocity through the lens of the psychological contract: employee and employer perspectives", *European Journal of Work and Organizational Psychology*, Vol. 11, pp. 69-86.
- de Jonge, J., Dollard, M.F., Dormann, C., Leblanc, P.M. and Houtman, I.L.D. (2000), "The demand-control model: specific demands, specific control, and well-defined groups", *International Journal of Stress Management*, Vol. 7 No. 4, pp. 269-287.

- de las Heras-Rosas, C., Herrera, J. and Rodríguez-Fernández, M. (2021), "Organisational commitment in healthcare systems: a bibliometric analysis", *International Journal of Environmental Research and Public Health*, Vol. 18, p. 2271.
- de Menezes, L.M. (2012), "Job satisfaction and quality management: an empirical analysis", *International Journal of Operations and Production Management*, Vol. 32 No. 3, pp. 308-328.
- de Menezes, L.M. and Escrig, A.B. (2019), "Managing performance in quality management: a two level study of employee-perceptions and workplace-performance", *International Journal of Operations and Production Management*, Vol. 39 No. 11, pp. 1226-1259.
- Dean, E. (2010), "Survey exposes divide between nurses and senior management", *Nursing Standard*, Vol. 24 No. 29, p. 5.
- Deming, W.E. (1986), *Out of the Crisis. Quality, Productivity and Competitive Position*, Cambridge University Press, Cambridge, Mass.
- DeNisi, A.S. (2000), "Performance appraisal and performance management: a multilevel analysis", in Klein, K.J. and Kozlowski, S. (Eds), *Multilevel Theory, Research and Methods in Organizations*, Jossey-Bass, San Francisco, CA, pp. 121-156.
- DeNisi, A.S. and Murphy, K.R. (2017), "Performance appraisal and performance management: 100 years of progress?", *Journal of Applied Psychology*, Vol. 102 No. 3, pp. 421-433.
- DeNisi, A. and Smith, C. (2014), "Performance appraisal, performance management, and firm level performance: a review, a proposed model, and new directions for future research", *The Academy of Management Annals*, Vol. 8 No. 1, pp. 127-179.
- Department of Health (2010), *The NHS Outcomes Framework 2011/12*, Department of Health, London.
- Doult, B. (2011), "Nurses have never felt so much pressure in their day to day work", *Nursing Standard*, Vol. 26 No. 5, p. 11.
- Elg, M., Broryd, K.P. and Kollberg, B. (2013), "Performance measurement to drive improvements in healthcare practice", *International Journal of Operations and Production Management*, Vol. 33 Nos 11/12, pp. 1623-1651.
- Endrikat, J., Guenther, T.W. and Titus, R. (2020), "Consequences of strategic performance measurement systems: a meta-analytic review", *Journal of Management Accounting Research*, Vol. 32 No. 1, pp. 103-136.
- Fila, M.J., Purl, J. and Griffeth, R.W. (2017), "Job demands, control and support: meta-analyzing moderator effects of gender, nationality, and occupation", *Human Resource Management Review*, Vol. 27 No. 1, pp. 39-60.
- Franco, M. and Otley, D. (2018), "Reviewing and theorizing the unintended consequences of performance management systems", *International Journal of Management Reviews*, Vol. 20 No. 3, pp. 696-730.
- Franco, M., Lucianetti, L. and Bourne, M. (2012), "Contemporary performance measurement systems: a review of their consequences and a framework for research", *Management Accounting Research*, Vol. 23 No. 2, pp. 79-119.
- Franco, M., Kennerley, M., Micheli, P., Martinez, V., Mason, S., Marr, B., Gray, D. and Neely, A. (2007), "Towards a definition of a business performance measurement system", *International Journal of Operations and Production Management*, Vol. 27 No. 8, pp. 784-801.
- Garengo, P. and Betto, F. (2022), "The role of organisational culture and leadership style in performance measurement and management: a longitudinal case study", *Production Planning and Control*. doi: [10.1080/09537287.2022.2058431](https://doi.org/10.1080/09537287.2022.2058431).
- Gerhart, B., Wright, P.M., McMahan, G.C. and Snell, S.A. (2000), "Measurement error in research on human resources and firm performance: how much error is there and how does it influence effect size estimates?", *Personnel Psychology*, Vol. 53, pp. 803-834.

- Gillam, S.J., Siriwardena, A.N. and Steel, N. (2012), "Pay-for-performance in the United Kingdom: impact of the quality and outcomes framework—a systematic review", *The Annals of Family Medicine*, Vol. 10 No. 5, pp. 461-468.
- Gimenez, C., Sierra, V. and Rodon, J. (2012), "Sustainable operations: their impact on the triple bottom line", *International Journal of Production Economics*, Vol. 140 No. 1, pp. 149-159.
- Goštautaitė, B., Bučiūnienė, I., Dalla Rosa, A., Duffy, R. and Kim, H.J. (2020), "Healthcare professionals with calling are less likely to be burned out: the role of social worth and career stage", *Career Development International*, Vol. 25 No. 6, pp. 649-670.
- Gouldner, A.W. (1960), "The norm of reciprocity: a preliminary statement", *American Sociological Review*, Vol. 25 No. 2, pp. 161-178.
- Gould-Williams, J.S., Bottomley, P., Redman, T.O.M., Snape, E.D., Bishop, D.J., Limpanitgul, T. and Mostafa, A.M.S. (2014), "Civic duty and employee outcomes: do high commitment human resource practices and work overload matter?", *Public Administration*, Vol. 92 No. 4, pp. 937-953.
- Guest, D., Brown, W., Peccei, R. and Huxley, K. (2007), "The study of trust and workplace partnership", in Whitfield, K. and Huxley, K. (Eds), *Innovation in the 2004 Workplace Employment Relations Survey*, Cardiff University, Cardiff.
- Guy, M. (2019), "Between 'going private' and 'NHS privatisation': patient choice, competition reforms and the relationship between the NHS and private healthcare in England", *Legal Studies*, Vol. 39 No. 3, pp. 479-498.
- Ho, H. and Kuvaas, B. (2020), "Human resource management systems, employee well-being, and firm performance from the mutual gains and critical perspectives: the well-being paradox", *Human Resource Management*, Vol. 59 No. 3, pp. 235-253.
- Hoff, T., Young, G., Xiang, E. and Raver, E. (2015), "Understanding US physician satisfaction: state of the evidence and future directions", *Journal of Healthcare Management*, Vol. 60 No. 6, pp. 409-427.
- Ippolito, A., Sorrentino, M., Capalbo, F. and Di Pietro, A. (2022), "How technological innovations in performance measurement systems overcome management challenges in healthcare", *International Journal of Productivity and Performance Management*. doi: [10.1108/IJPPM-11-2021-0664](https://doi.org/10.1108/IJPPM-11-2021-0664).
- Jain, S., Triantis, K.P. and Liu, S. (2011), "Manufacturing performance measurement and target setting: a data envelopment analysis approach", *European Journal of Operational Research*, Vol. 214 No. 3, pp. 616-626.
- Jong, J. and Ford, M.T. (2016), "The lagged effects of job demands and resources on organizational commitment in federal government agencies: a multi-level analysis", *Journal of Public Administration Research and Theory*, Vol. 26 No. 3, pp. 475-492.
- Judge, T.A., Thorsen, C.J., Bono, J.E. and Patton, G.K. (2001), "The job satisfaction—job performance relationship: a qualitative and quantitative review", *Psychological Bulletin*, Vol. 127, pp. 376-407.
- Karasek, R.A. (1979), "Job demand, job decision latitude, and mental strain: implications for job redesign", *Administrative Science Quarterly*, Vol. 24, pp. 285-315.
- Karasek, R.A. and Theorell, T. (1990), *Healthy Work: Stress, Productivity and the Reconstruction of Working Life*, Basic Books, New York.
- Karasek, R.A., Triantis, K.P. and Chaudhry, S.S. (1982), "Coworker and supervisor support as moderators of associations between task characteristics and mental strain", *Journal of Organizational Behavior*, Vol. 3, pp. 181-200.
- Kings Fund (2014), "The UK private health market", Commission on the Future of Health and Social Care in England, available at: <https://www.kingsfund.org.uk/sites/default/files/media/commission-appendix-uk-private-health-market.pdf>

- Koufteros, X., Verghese, A. and Lucianetti, J. (2014), "The effect of performance measurement systems on firm performance: a cross-sectional and longitudinal study", *Journal of Operations Management*, Vol. 12 No. 6, pp. 313-336.
- Lesener, T., Gusy, B. and Wolter, C. (2019), "The job demands-resources model: a metaanalytic review of longitudinal studies", *Work and Stress*, Vol. 33 No. 1, pp. 76-103.
- Levesque, J.F. and Sutherland, K. (2020), "Combining patient, clinical and system perspectives in assessing performance in healthcare: an integrated measurement framework", *BMC Health Services Research*, Vol. 20 No. 1, pp. 1-14.
- Linderman, K., Schroeder, R.G. and Choo, A.S. (2006), "Six sigma: the role of goals in improvement teams", *Journal of Operations Management*, Vol. 24 No. 6, pp. 779-790.
- Locke, E.A. and Latham, G.P. (1990), *A Theory of Goal Setting and Task Performance*, Prentice Hall, Englewood Cliffs, NJ.
- Mackenzie, H. and Bititci, U.S. (2023), "Understanding performance measurement and management as a social system: towards a theoretical framework", *International Journal of Operations and Production Management*, Vol. 43 No. 7, pp. 1098-1120.
- MacKinnon, D.P., Fairchild, A.J. and Fritz, M.S. (2007), "Mediation analysis", *Annual Review of Psychology*, Vol. 58, pp. 593-614.
- Mannion, R. and Braithwaite, J. (2012), "Unintended consequences of performance measurement in healthcare: 20 salutary lessons from the English National Health Service", *Internal Medicine Journal*, Vol. 42 No. 5, pp. 569-574.
- McCann, L., Granter, E., Hassard, J. and Hyde, P. (2015), "You can't do both—something will give: limitations of the targets culture in managing UK health care workforces", *Human Resource Management*, Vol. 54 No. 5, pp. 773-791.
- McClenahan, C.A., Giles, M.L. and Mallett, J. (2007), "The importance of context specificity in work stress research: a test of the Demand-Control-Support model in academics", *Work and Stress*, Vol. 21 No. 1, pp. 85-95.
- McDermott, A.M., Conway, E., Cafferkey, K., Bosak, J. and Flood, P.C. (2019), "Performance management in context: formative cross-functional performance monitoring for improvement and the mediating role of relational coordination in hospitals", *The International Journal of Human Resource Management*, Vol. 30 No. 3, pp. 436-456.
- Mellat-Parast, M. and Golmohammadi, D. (2019), "Quality management in healthcare organizations: empirical evidence from the baldrige data", *International Journal of Production Economics*, Vol. 216, pp. 133-144.
- Melnyk, S.A., Stewart, D.M. and Swink, M. (2004), "Metrics and performance measurement in operations management: dealing with the metrics maze", *Journal of Operations Management*, Vol. 22, pp. 209-217.
- Mowday, R.T. (1998), "Reflections on the study and relevance of organizational commitment", *Human Resource Management Review*, Vol. 8 No. 4, pp. 387-401.
- Melnyk, S.A., Bititci, U., Platts, K., Tobias, J. and Andersen, B. (2014), "Is performance measurement and management fit for the future?", *Management Accounting Research*, Vol. 25 No. 2, pp. 173-186.
- Murphy, K.R. (2020), "Performance evaluation will not die, but it should", *Human Resource Management Journal*, Vol. 30 No. 1, pp. 13-31.
- Neely, A., Gregory, M. and Platts, K. (2005), "Performance measurement system design: a literature review and research agenda", *International Journal of Operations and Production Management*, Vol. 25 No. 12, pp. 1228-1263.
- Nembhard, I.M., Alexander, J.A., Hoff, T.J. and Ramanujam, R. (2009), "Why does the quality of health care continue to lag? Insights from management research", *Academy of Management Perspectives*, Vol. 23 No. 1, pp. 24-42.

- Neno, A. (2008), "Nurses confront the challenge of delivering dignified care", *Nursing Older People*, Vol. 22 No. 5, p. 5.
- NHS England (2013), *High Quality Care for All, Now and for Future Generations: Transforming Urgent and Emergency Care Services in England*, NHS England, Leeds.
- Nørreklit, H., Jacobsen, M. and Falconer, M. (2008), "Pitfalls in using the balanced scorecard", *Journal of Corporate Accounting and Finance*, Vol. 19 No. 6, pp. 65-68.
- Nursing Management (2009), "RCN survey shows that working week is more than six hours too long", *Nursing Management*, Vol. 16 No. 5, p. 5.
- Nuti, S., Noto, G., Vola, F. and Vainieri, M. (2018), "Let's play the patients music: a new generation of performance measurement systems in healthcare", *Management Decision*, Vol. 56 No. 10, pp. 2252-2272.
- Ojiako, U., Bititci, U., Marshall, A., Chipulu, M., Manville, G., Muthalagu, S.J. and Farrington, T. (2022), "Ambiguity in performance management systems of complex multi-stakeholder organisations", *Production Planning and Control*. doi: [10.1080/09537287.2021.2014590](https://doi.org/10.1080/09537287.2021.2014590).
- Oliver, A. (2012), "Markets and targets in the English National Health Service: is there a role for behavioral economics?", *Journal of Health Politics, Policy and Law*, Vol. 37 No. 4, pp. 647-664.
- Oswald, A.J., Proto, E. and Sgroi, D. (2015), "Happiness and productivity", *Journal of Labor Economics*, Vol. 33 No. 4, pp. 789-822.
- Peccei, R. (2004), *Human Resource Management and the Search for the Happy Workplace. Inaugural Addresses Research in Management Series*, Erasmus Research Institute of Management (ERIM), Rotterdam.
- Peccei, R. and Van De Voorde, K. (2019), "Human resource management–well-being–performance research revisited: past, present, and future", *Human Resource Management Journal*, Vol. 29 No. 4, pp. 539-563.
- Pichler, S., Beenen, G. and Wood, S. (2020), "Feedback frequency and appraisal reactions: a meta-analytic test of moderators", *The International Journal of Human Resource Management*, Vol. 31 No. 17, pp. 2238-2263.
- Pick, D. and Teo, S.T. (2017), "Job satisfaction of public sector middle managers in the process of NPM change", *Public Management Review*, Vol. 19 No. 5, pp. 705-724.
- Propper, C., Sutton, M., Whitnall, C. and Windmeijer, F. (2010), "Incentives and targets in hospital care: evidence from a natural experiment", *Journal of Public Economics*, Vol. 94 Nos 3/4, pp. 318-335.
- Pulakos, E.D. and O'Leary, R.S. (2011), "Why is performance management broken?", *Industrial and Organizational Psychology: Perspectives on Science and Practice*, Vol. 4 No. 2, pp. 146-164.
- Purcell, J. and Kinnie, N. (2007), "HRM and business performance", in Boxall, P., Purcell, J. and Wright, P. (Eds), *The Oxford Handbook of Human Resource Management*, Oxford University Press, Oxford, pp. 533-551.
- Racounter (n.d.), "The UK's private healthcare market", Racounter, October 2022, available at: <https://www.racounter.net/infographics/uk-private-healthcare-market/>
- Ramsay, H., Scholarios, D. and Harley, B. (2000), "2 Employees and high-performance work systems: testing inside the black box", *British Journal of Industrial Relations*, Vol. 38 No. 4, pp. 501-531.
- Schnoor, J., Braehler, E. and Heyde, C.E. (2019), "Did we learn the lesson after 60 years of Management by Objectives? A survey among former physician executives in German hospitals", *Work*, Vol. 62 No. 2, pp. 353-359.
- Schulz, E. (2013), "Employment in health and long-term care sector in European Countries", Neujobs Working Paper, D12.1, Suppl. A, Deutsches Institut für Wirtschaftsforschung (DIW), Berlin.
- Shantz, A., Alfes, K. and Arevshatian, L. (2016), "HRM in healthcare: the role of work engagement", *Personnel Review*, Vol. 45 No. 2, pp. 274-295.

- Simonet, D. (2015), "The new public management theory in the British health care system: a critical review", *Administration and Society*, Vol. 47 No. 7, pp. 802-826.
- Sirmon, D.G., Hitt, M.A., Ireland, R.D. and Gilbert, B.A. (2011), "Resource orchestration to create competitive advantage: breadth, depth, and life cycle effects", *Journal of Management*, Vol. 37, pp. 1390-1412.
- Smith, P.C. (2005), "Performance measurement in health care: history, challenges and prospects", *Public Money and Management*, Vol. 25 No. 4, pp. 213-220.
- Smith, M. and Bititci, U.S. (2017), "Interplay between performance measurement and management, employee engagement and performance", *International Journal of Operations and Production Management*, Vol. 37 No. 9, pp. 1207-1228.
- Soltani, E. and Wilkinson, A. (2020), "TQM and performance appraisal: complementary or incompatible?", *European Management Review*, Vol. 17, pp. 57-82.
- Spence, M. (1973), "Job market signalling", *Quarterly Journal of Economics*, Vol. 8, pp. 355-374.
- Sprinks, J. (2013), "Demands on NHS nurses may be too great to stop exodus of over-50s", *Nursing Standard*, Vol. 27 No. 43, p. 11.
- Staw, B., Sutton, R. and Pelled, L. (1994), "Employee positive emotion and favourable outcomes at the workplace", *Organization Science*, Vol. 5, pp. 51-71.
- Tättilä, J., Helkiö, P. and Holmström, J. (2014), "Exploring the performance effects of performance measurement system use in maintenance process", *Journal of Quality in Maintenance Engineering*, Vol. 20 No. 4, pp. 377-401.
- Topic, M., Baum, M. and Kabst, R. (2016), "Are high-performance work practices related to individually perceived stress? A job demands-resources perspective", *The International Journal of Human Resource Management*, Vol. 27 No. 1, pp. 45-66.
- Ukko, J., Tenhunen, J. and Rantanen, H. (2007), "Performance measurement impacts on management and leadership: perspectives of management and employees", *International Journal of Production Economics*, Vol. 110 No. 1, pp. 39-51.
- Van De Voorde, K., Veld, M. and Van Veldhoven, M. (2016), "Connecting empowerment-focused HRM and labour productivity to work engagement: the mediating role of job demands and resources", *Human Resource Management Journal*, Vol. 26 No. 2, pp. 192-210.
- Van der Hauwaert, E., Hoozée, S., Maussen, S. and Bruggeman, W. (2022), "The impact of enabling performance measurement on managers' autonomous work motivation and performance", *Management Accounting Research*, Vol. 55, 100780.
- van Wanrooy, B., Bewley, H., Bryson, A., Forth, J., Freeth, S., Stokes, L. and Wood, S. (2013), *Employment Relations in the Shadow of Recession: Findings from the 2011 Workplace Employment Relations Study*, Palgrave Macmillan, Basingstoke.
- Van Yperen, N.W. and Hagedoorn, M. (2003), "Do high job demands increase intrinsic motivation or fatigue or both? The role of job control and job social support", *Academy of Management Journal*, Vol. 46 No. 3, pp. 339-348.
- Verbeeten, F.H.M. and Speklé, R.F. (2015), "Management control, results-oriented culture and public sector performance: empirical evidence on new public management", *Organization Studies*, Vol. 36 No. 7, pp. 953-978.
- von Vultée, P.J., Axelsson, R. and Arnetz, B. (2007), "The impact of organisational settings on physician wellbeing", *International Journal of Health Care Quality Assurance*, Vol. 20 No. 6, pp. 506-515.
- Wankhade, P. (2012), "Different cultures of management and their relationship with organizational performance: evidence from the UK ambulance service", *Public Money and Management*, Vol. 32, pp. 381-388.
- Warr, P. (1990), "The measurement of well-being and other aspects of mental health", *Journal of Occupational Psychology*, Vol. 63 No. 3, pp. 193-210.

- Warr, P., Cook, J. and Wall, T. (1979), "Scales for the measurement of some work attitudes and aspects of psychological well-being", *Journal of Occupational Psychology*, Vol. 52 No. 2, pp. 129-148.
- Welsh, D.T. and Ordóñez, L.D. (2014), "The dark side of consecutive high performance goals: linking goal setting, depletion, and unethical behaviour", *Organizational Behavior and Human Decision Processes*, Vol. 123 No. 2, pp. 79-89.
- Welsh, D., Bush, J., Thiel, C. and Bonner, J. (2019), "Reconceptualizing goal setting's dark side: the ethical consequences of learning versus outcome goals", *Organizational Behavior and Human Decision Processes*, Vol. 150, pp. 14-27.
- White, J. (2019), "Can performance measurement make health care systems more sustainable? Or at least more efficient?", *OECD Journal on Budgeting*, Vol. 19 No. 3, pp. 151-167.
- Whitener, E., Brodt, S., Korsgaard, M. and Werner, J. (1998), "Managers as initiators of trust: an exchange relationship framework for understanding managerial trustworthy behavior", *Academy of Management Review*, Vol. 36, pp. 453-486.
- Wilson, C.A. and Britt, T.W. (2021), "Living to work: the role of occupational calling in response to challenge and hindrance stressors", *Work and Stress*, Vol. 35 No. 2, pp. 111-131.
- Wingerden, J.V., Bakker, A.B. and Derks, D. (2016), "A test of a job demands-resources intervention", *Journal of Managerial Psychology*, Vol. 31 No. 3, pp. 686-701.
- Wong, C.A. and Laschinger, H.K.S. (2015), "The influence of frontline manager job strain on burnout, commitment and turnover intention: a cross-sectional study", *International Journal of Nursing Studies*, Vol. 52 No. 12, pp. 1824-1833.
- Wood, S. (2008), "Job characteristics, employee voice and well-being in Britain", *Industrial Relations Journal*, Vol. 39 No. 2, pp. 153-168.
- Wood, S. and de Menezes, L.M. (2011), "High involvement management, high performance work systems and well-being", *International Journal of Human Resource Management*, Vol. 22 No. 7, pp. 1586-1610.
- Wood, S., Van Veldhoven, M., Croon, M. and de Menezes, L.M. (2012), "Enriched job design, high involvement management and organizational performance: the mediating roles of job satisfaction and well-being", *Human Relations*, Vol. 65 No. 4, pp. 419-445.
- Wood, S., Daniels, K. and Ogbonnaya, C. (2020), "Use of work–nonwork supports and employee well-being: the mediating roles of job demands, job control, supportive management and work–nonwork conflict", *The International Journal of Human Resource Management*, Vol. 31 No. 14, pp. 1793-1824.
- Zelenski, J., Murphy, S. and Jenkins, D. (2008), "The happy-productive worker thesis revisited", *Journal of Happiness Studies*, Vol. 9, pp. 521-537.

Variable	Question
<i>Workplace-level (WERS2011 management survey)</i>	
<i>Performance measurement</i>	
Targets	Does the workplace have targets for any of the following? (YES = 1/NO = 0) (1) Volume of sales/services provided (2) Total costs (3) Profits/return on investments (4) Unit labour costs (5) Productivity (6) Quality of product/service or customer satisfaction
Monitoring	-Are any of the following records kept for this workplace? (YES = 1/NO = 0) ^(a) (1) Sales (2) Costs (3) Profits (4) Labour costs (5) Productivity (6) Quality of product/service -Is the performance of employees assessed? (all non-managerial staff have their performance formally appraised = 1/Otherwise = 0) ^(b)
<i>Employee-level (WERS2011 Employee Survey)</i>	
Job control	In general, how much influence do you have over the following? (1 = none, 4 = a lot) (1) The tasks you do in your job (2) The pace at which you work (3) How you do your work (4) The order in which you carry out tasks (5) The time you start or finish your working day
Job demands	Do you agree or disagree with the following statements about your job? (1 = strongly disagree, 4 = strongly agree) (1) My job requires that I work very hard (2) I never seem to have enough time to get my work done
Supportive management	Thinking about the managers at this workplace, to what extent do you agree or disagree with the following? (1 = strongly disagree, 5 = strongly agree) (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 (5) Encourage people to develop their skills (6) Treat employees fairly
Job satisfaction	How satisfied are you with the following aspects of your job? (1 = very dissatisfied, 5 = very satisfied) (1) The sense of achievement you get from your work (2) The scope for using your own initiative (3) The amount of influence you have over your job (4) The training you receive (5) The opportunity to develop your skills in your job (6) The amount of pay you receive (7) Your job security (8) The work itself (9) The amount of involvement you have in decision-making

(continued)

Variable	Question
Anxiety	Thinking of the past few weeks, how much of the time has your job made you feel each of the following? (1 = never, 5 = all of the time) (1) Tense (2) Worried (3) Uneasy
Organisational commitment	To what extent do you agree or disagree with the following statements about working here? (1 = strongly disagree, 5 = strongly agree) (1) I share many of the values of my organisation (2) I feel loyal to my organisation (3) I am proud to tell people who I work for

Note(s): ^(a) According to the guidelines for the structured interview, preceding this question, the interviewer states "I now want to ask some questions about monitoring of performance and quality at this workplace"

^(b) This is based on a question included in WERS2011 Management Survey that asked for the proportion of non-managerial employees at the workplace that had their performance formally appraised

Source(s): Authors' own creation from <https://www.gov.uk/government/publications/the-2011-workplace-employment-relations-study-wers>

Table A1.

Practice	% healthcare	% not healthcare	Statistic z	p- value
<i>Targets</i>				
Volume of sales/services provided targets	45.3**	60.7	5.09	0.000
Total costs targets	47.2**	58.7	3.79	0.000
Profits/return on investments targets	26.7**	46.3	6.42	0.000
Unit labour costs targets	24.8**	37.3	4.25	0.000
Productivity targets	36.2**	48.6	4.05	0.000
Quality of product/service or customer satisfaction targets	64.2	67.7	1.21	0.225
<i>Monitoring</i>				
Keeping records on sales	84.0*	88.3	2.13	0.033
Keeping records on costs	87.1	89.8	1.38	0.165
Keeping records on profits	52.4**	65.8	4.55	0.000
Keeping records on labour costs	81.8	85.3	1.58	0.112
Keeping records on productivity	56.7	61.2	1.49	0.134
Keeping records on quality of product/service	73.4	69.6	1.34	0.178
All non-managerial staff have their performance formally appraised	85.5	82.6	1.19	0.233

Note(s): n Healthcare workplaces = 319; n Not Healthcare workplaces = 1915

* $p \leq 0.05$ ** $p \leq 0.01$

Source(s): Authors' own creation

Table A2.
Practice use

About the authors

Lilian M. de Menezes is Professor of Decision Sciences, Bayes Business School, City, University of London, which she joined in 2002. Her research contributions range from empirical studies on management practices, flexible working and performance to novel forecasting and statistical methodologies. Her publications include articles in *European Journal of Operational Research*, *Human Relations*, *International Journal of Production Economics*, *International Journal of Production and Operations Management*, *Journal of Operations Management*. She has accumulated industrial experience from working in a range of projects in operations for consulting and financial organisations.

Ana B. Escrig-Tena is professor at the Department of Business Administration at the Universitat Jaume I (Castellón, Spain). She teaches courses at the MBA and PhD level on quality management and business excellence models. Her primary research interests cover quality management, sustainability and human resource management. She is currently analysing the contribution of quality management initiatives to entrepreneurial behaviour of employees and sustainability. She has published in journals such as *International Journal of Operations and Production Management*, *International Journal of Production Economics*, *Journal of Management* and *Journal of Operations Management*. Ana B. Escrig-Tena is the corresponding author and can be contacted at: escrigt@uji.es

Performance
measurement
systems

329

For instructions on how to order reprints of this article, please visit our website:

www.emeraldgrouppublishing.com/licensing/reprints.htm

Or contact us for further details: permissions@emeraldinsight.com