Pathways from Targets and Monitoring to performance in healthcare: An analysis of employee and workplace outcomes in Britain

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Abstract

This paper uses employee-workplace data in British healthcare to investigate how targets and monitoring practices may be associated with employee-attitudes and workplace-performance. Results from two-level path models highlight that quality targets can improve productivity, and that a transparent strategy can foster positive employee-attitudes. Although job demands can decrease wellbeing, neither targets nor monitoring are linked with perceptions of job demands, and thus they do not seem to be as onerous to wellbeing as reported in previous studies of performance management in healthcare. Nonetheless, the results also imply that jointly economic performance targets and a supportive management may reduce employee wellbeing.

Keywords: Performance Measurement, Employee-outcomes, Workplace-Performance.

Introduction

The performance of healthcare has been subject of an ongoing debate, where the adoption of modern management practices is both encouraged and questioned. Continuous improvement approaches such as Lean, Six-Sigma and Quality Management (QM), which imply performance measurement systems based on targets settings and monitoring (McConnell et al., 2014), are now widely adopted across services since they help to identify gaps in performance and needs for adjustments in operations. In essence, they translate strategic objectives to the daily routine of workers at all levels in organizations. However, it has been argued that performance management systems are too rigid and inappropriate for healthcare operations (e.g. Waring and Bishop, 2010). Targets and monitoring practices are seen by some authors as managerial control that drive out autonomy over the delivery of work. For example, McCann et al. (2015) argued that, given a need to reconcile the logics of business efficiency with integrity of care, these practices turn the daily-experience of healthcare workers into one of greater job demands. Since human factors can play a significant role in the success of performance management (Smith and Bititci, 2017), healthcare managers require means to offset any unwanted effects of performance measurement systems on employees. In this vein, extensions of the Job demands-Job control (JDC) model of Karasek (1979) state that job control (the

influence employees have over aspects of their work) and perceived organizational support are positively associated with employee wellbeing, and dilute negative effects of job demands.

Combining predictions based on this model with expectations from previous literature on performance management, which highlight the importance of the integration of human resource management (HRM) and operations management (OM) approaches for organizational performance, this study investigates associations of the control element in performance management with employee perceptions of work and wellbeing in the healthcare sector. Specifically, it assesses relationships between targets and monitoring practices, perceived job demands, employee job-related wellbeing and attitudes (job-satisfaction, anxiety, organizational-commitment), and workplace-performance (quality of service, productivity, absenteeism). Potential moderations of employee's perceptions of HRM (employee-job control, supportive management, consultative management) in these associations are also examined.

Background and Hypotheses

From targets and monitoring to performance in workplaces

In the management of healthcare organizations, it has often been argued that performance improvements require a cultural change that moves away from rules and procedures to a greater emphasis on results (e.g. Adler et al., 2003). In this context, employees are made accountable for performance and are encouraged to be proactive and think in terms of results. Modern healthcare OM entails performance management systems, which use performance metrics and information to define targets, and monitors strategy implementation so that needs for further improvements are identified. Performance management systems are necessary to ensure progress and to continually identify areas for improvement (Prybutok and Ramasesh, 2005). Such systems have a coordinating-role, higher levels objectives are expected to be translated to coherent, clear and specific targets at the lower levels, and thus should be supported by meaningful metrics and data analysis both at group and individual levels (Melnyk et al., 2004). As observed by Ketokivi and Castaner (2004), when strategic goals are communicated and information systems aid monitoring, employees can better understand targets and act as needed. Consequently, targets and monitoring can enable employees to work smarter and lead to improvements in performance at all levels in an organization. That is,

H1: Targets and monitoring are positively associated with performance.

When considering performance management and the effectiveness of the practices involved, the literature has been inconclusive (e.g. Glendinning, 2002; DelliFraine et al., 2010), and it is important to investigate alternative pathways from targets and monitoring to performance. In this vein, management practices in healthcare organizations have been linked to employee-attitude, performance, and patient outcomes (e.g. Piening et al., 2013; Shantz et al., 2016). Accordingly, the causal chain between management practice and performance is complex, i.e., employees perceive, interpret and react to management practices subjectively, leading to behaviors and feelings that have spillover effects at group levels thus affecting performance (Bartram and Dowling, 2013; Kehoe and Wright, 2013; Shantz et al., 2016). Conway et al. (2016) considered monitoring performance through targets and performance indicators as sources of demands on workers. More specifically in healthcare, employee perceptions of performance management have been described as distractions from their roles (e.g. Nembhard et al. 2009), or additional workload (e.g. McCann et al. 2015). High levels of job demands in a workplace can be linked to anxiety and ill health, as for example when employees believe that performance

metrics do not recognize their efforts, or decreases in job satisfaction and commitment. For instance, Decramer et al. (2015) observed that nurses experienced low levels of job satisfaction due to perceptions of having their performance planned by management and the workload that they associated with performance measurement. Experiences of greater job demands can increase the likelihoods of errors and absences, and thus it can be argued that performance management requires employees who are robust to managerial control and can understand its logic as well as the demands that are placed on them. Some authors (e.g. Ooi et al., 2013; Ketokivi and Castaner, 2014), however, argued that targets and monitoring practices can provide greater clarity, objectivity and feedback. If this were the case, employees would be happier and develop positive feelings towards the organization that they would reciprocate with effort that could translate to better performance (Mihail and Kloutsiniotis, 2016). Indeed, the link between job satisfaction and performance has been observed in many studies (e.g. Bryson et al., 2017) and, in a healthcare context, at least two analyses (Akdere, 2009; Top et al. 2015) found positive association between job satisfaction and quality of service. Moreover, job satisfaction can translate to employee-commitment (e.g. Ang et al. 2013), which has been linked to employee-performance even in studies that were critical of performance management in the health sector (e.g. McCann et al. 2015). In summary, it can be hypothesized:

H2a: Targets and monitoring are associated with perceptions of job demands, wellbeing and organizational-commitment in a workplace.

H2b: Perceptions of job demands in a workplace are associated with the levels of job-related wellbeing and organizational-commitment in a workplace.

H2c: The levels of job-related wellbeing in a workplace is positively associated with the level of organizational-commitment in a workplace.

H2d: The pathways from targets (monitoring) to performance are via workforce job demands, wellbeing and organizational-commitment.

Interactions of different aspects of the job on the pathways to performance

Considering the likely negative effects of perceptions of job demands on worker's wellbeing, different models have been proposed in the management and work-psychology literatures. Specifically, the Job demands-Job control (JDC) model of Karasek (1979) has been influential. This model states that job control, i.e. the influence employees have over aspects of their work, is positively associated with employee wellbeing, and thus can dilute effects of high job demands on strain (i.e. anxiety). The greater control workers have over their job, the easier they can proactively conduit their energy in an appropriate way to positively respond to additional or unexpected demand in a job (Wong et al., 2007). For example, Van Yperen and Hagedoorn (2003) concluded that job control reduces fatigue, when nurses experience high job demands, and Hoff et al. (2015) found positive association between job autonomy and job satisfaction. By contrast, when employees have low job control and experience a need to act and be competent, they become more anxious, unhappy and disengaged in their jobs (e.g. Fila et al., 2017).

The role of supports as complement to decision latitude was addressed by Karasek and Theorell (1990), in their extension of the JDC model. It is argued that when managers are perceived to be helpful, fair and caring, relationships in the workplace are likely to become source of information and support in face of greater demands (Fila et al., 2017). A supportive management can provide employees with positive sense of identity and value, and facilitate problem-solving because employees expect their effort to pay off (Wood, 2008).

H3: The associations of job demands with job-related wellbeing and organizational-commitment are moderated by job control.

H4: The associations of job demands with job-related wellbeing and organizational-commitment are moderated by supportive management.

While analyzing job characteristics and job satisfaction in British workplaces, Wood (2008) expanded Karasek and Theorell's arguments, by considering the importance of employee participation. More recently, Conway et al. (2016) highlighted employee-voice as a potential resource for employee wellbeing. It may be argued that when management consult employees, they share their decision-making power (Parker and Price, 1994; Conway et al., 2016), and thus consultation can be a mechanism to foster perceptions of employee-job control. That is,

H5: There are positive indirect effects of consultative management on job-related wellbeing and organizational-commitment via perceived job control.

Targets, monitoring, job control and supportive management as resources

Following the Job Demands-Resource (JD-R) model (Bakker and Demerouti, 2014), it has been argued that having control over the job relieves perceived work pressures in healthcare (Shantz et al. 2016), since the opportunity to participate in the organization of work increases the likelihood of reaching performance objectives. Similarly, management's support can become a resource when employees face additional demands from targets and monitoring systems. Since the healthcare sector is inherently work-intensive (e.g. Bakker and Sanz, 2013), perceptions of a resourceful workplace may counteract additional demands that could follow from performance management (Wingerden et al., 2016), and thus it is hypothesized:

H6: The associations between targets and monitoring with job demands are moderated by the average job control in a workplace.

H7: The associations between targets and monitoring with job demands are moderated by the supportive management in a workplace.

The JD-R model also implies that job-related resources promote wellbeing (Hakanen et al. 2008). Shantz et al's. (2016) explained that perceptions of having job control and being supported by management are akin to motivational human resource management practices that can engage healthcare employees in a way that they feel valued and satisfied with their jobs. Indeed, Van Yperen and Hagedoorn (2003) observed that the perceived availability of support can keep nurses motivated in their jobs. Therefore, taking into account the motivational role of resources in addressing employees' needs for autonomy and empathy, and for achieving performance objectives (Bakker and Demerouti, 2014), any association between targets and monitoring with employee-wellbeing and attitudes may be contingent on employees' perceptions of job control and support. In line with arguments of Fernet et al. (2012), job resources may enable employees to internalize values and goals derived from targets and monitoring, so that they can be productive and committed in their jobs. In fact, von Vultée et al. (2007) noted that a supportive work environment encourages physicians to take on managerial responsibilities of the type implicit in QM, which, otherwise, they would tend to avoid. Hence, it is hypothesized:

H8: The associations between targets and monitoring with job-related wellbeing and organizational-commitment are moderated by the average job control in a workplace.

H9: The associations between targets and monitoring with job-related wellbeing and organizational-commitment are moderated by supportive management in a workplace.

The hypotheses are summarized in Figure 1, which depicts different pathways from targets and monitoring to performance.

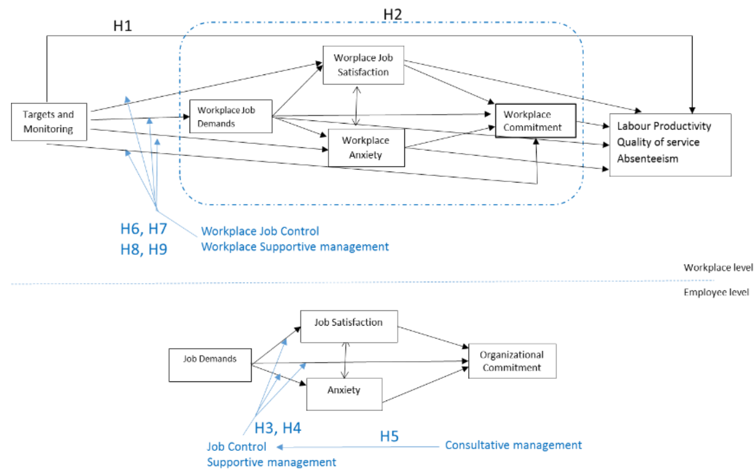

Figure 1: Paths from Targets and Monitoring to Performance

Methodology

Data

Hypotheses are tested via matched employee-workplace data in British healthcare (295 workplaces and 2,901 employees) extracted from the 2011 Workplace Employee Relations Survey (WERS2011; http://www.wers2011.info/). Two of the instruments in WERS2011 are used in this study: a survey of workplace practices based on a face-to-face interview with a senior manager responsible for human resource management at the workplace; a self-completion questionnaire that was distributed to a maximum of 25 employees in workplaces where the interview was conducted.

Measures

Table 1 summarizes the variables and their measurement. Practices and performance data are obtained from the survey of managers. Confirmatory factor analysis (CFA) implies four correlated factors for targets and a single factor for monitoring. A model with five correlated factors confirms the adequacy of the measurement to the data (CFI=0.908; RMSEA=0.07), and the corresponding factor scores are used as measures of different targets and monitoring. Performance is measured by the managerial respondent's assessment of labor productivity and quality of service, as well as the proportion of absences in the workplace. Perceptions of job demands, wellbeing, organizational-commitment, job control, supportive management and consultative management are measured as the mean of the items obtained from the survey of employees. Wellbeing assessments follow two of three dimensions by Warr (1990), which lead to measures of job satisfaction and anxiety. Employee's feelings of affection to the organization are summarized by three items in a measure of (affective) organizational-commitment.

The models that follow from Figure 1 are controlled at both levels. At workplace-level, controls are: size of establishment (logarithm of the total number of employees), size of total organization of which the workplace is a part, public or private status, years in operation, and proportion of operational and routine workers. At employee-level, characteristics that have been associated with employee wellbeing are also included, namely: being a manager, age, gender, tenure, low earnings, permanent contracts and fulltime.

Table 2. Measures

VARIABLE	MEASUREMENT	SOURCE
Factors		Battisti and Iona (2009), de Menezes (2012), van Wanrooy et al. (2013), de
Workforce related targets	Workplace has targets for absenteeism; Workplace has targets for employee job satisfaction; Workplace has targets for labor turnover; Workplace has targets for workforce training	
Economic Performance targets	Workplace has targets for unit labor costs; Workplace has targets for profits/return on investments; Workplace has targets for productivity; Workplace has targets for total costs; Workplace has targets for volume of sales/services provided	

Quality targets	Workplace has targets for customer/client satisfaction; Workplace has targets for quality of product and service	Menezes and Escrig(2017)
Strategy dissemination	Workplace is covered by a formal strategic plan which sets out objectives and how they will be achieved; Workplace has meetings between line managers and all the workers they manage; Regular information is provided on internal investments plans and/or staffing plans	
Monitoring	Workplace benchmarked itself against other workplaces in past 2 years; Workplace has managers-employees committees primarily concerned with consultation; Workplace keeps records concerning quality of product or service; Workplace has groups of non-managerial staff set up to address performance/quality	
Labor productivity	Labor productivity relative to other workplaces in the same industry (1-a lot below; 5-a lot better than average)	Bryson et al (2017)
Quality of service	Quality of service relative to other workplaces in the same industry (1-a lot below; 5-a lot better than average)	
Absenteeism	Percentage of work days lost through employee sickness or absence over the last 12 months	de Menezes (2012)
Anxiety	Mean of three items measuring how employees felt tense, worried and uneasy during the past few weeks (1-never, 5-all the time)	Bryson et al. (2017)
Organizational - Commitment	Mean of three items (1-strongly disagree; 5-strongly agree): (1) I share many of the values of my organization, (2) I feel loyal to my organization, (3) I am proud to tell people who I work for	de Menezes (2012)
Job satisfaction	Mean of nine items (1 very dissatisfied; -5 very satisfied) employees were asked about their satisfaction with: (1) the sense of achievement they get from their work; (2) the scope for using initiative; (3) the amount of influence the person has over their job; (4) the training the person received; (5) the opportunity to develop their skills in their job; (6) the amount of pay they receive; (7) job security; (8) the work itself; (9) the amount of involvement in decision-making	de Menezes (2012), van Wanrooy et al. (2013), de Menezes and Escrig (2017)
Job demands	Mean of two items (1-strongly disagree; 5-strongly agree): (1) my job requires that I work very hard; (2) I never seem to have enough time to get my work done	
Job control	Mean of five items (1-none; 4-a lot), asking employees how much influence they have over: (1) the tasks they do in their job; (2) the pace at which they work; (3) how they do their work; (4) the order in which they carry out tasks; the time they start or finish their working day	
Supportive management	Six-item scale based on a question that asked about the extent to which the managers at the workplaces had the following characteristics (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	Wood(2008), Wood and de Menezes (2011),
Consultative management	Three-item scale based on a question about employees' perceptions of how good managers were at the following three processes (1-very poor-; 5-very good): (1) seeking the views of employees or employee representatives, (2) responding to suggestions from employees or employee representatives, (3) allowing employees or employee representatives to influence final decisions	

Analysis Procedure

The hypotheses are tested by two-level Structural Equation Models, where employees are nested in workplaces, using MPlus version 7. Intra-class correlations of the variables at employee-level are above 0.05, thus implying significant between-group variation and justifying the adoption of a two-level analysis (Heck, 2001). In the case of absenteeism as a dependent variable, a negative binomial regression is used; otherwise, paths are estimated by linear regression. Three two-level path analyses are considered. The first model assesses the direct and mediation hypotheses (H1 an H2). The second model tests the moderations by job control and the role of consultative management (H3,H5,H6,H8). Finally, the role of supportive management (H4,H7,H9) is addressed in the third model.

Findings

The significant relationships identified in the first model are summarized in Figure 2. The only significant direct association with performance is between quality targets and productivity, therefore, H1 is mainly rejected.

H2a is partially supported; workforce related targets are positively associated with workplace job satisfaction and indirectly correlated with workplace commitment (b=0.062, p=0.021); a significant association between strategic dissemination and commitment is observed, but there is no association between targets or monitoring and job demands or anxiety at workplace-level. Regarding the associations between job demands and wellbeing (H2b) in workplaces, the observed pattern is as expected: job demands are negatively associated with job satisfaction and positively correlated with anxiety. Workplace job demands are not negatively associated with workplace commitment, but as hypothesized (H2c), workplace job satisfaction is. A negative and significant indirect association between strategy dissemination and absenteeism via workplace commitment (b=-0.085, p=0.047) is found, thus partially supporting H2d. The positive link between job satisfaction and absenteeism may be surprising, and should be interpreted with care. First, it is plausible that in good work environments, absences are

more likely to be reported. Secondly, job satisfaction is negatively associated with absenteeism via workplace-commitment (b=-0.312, p=0.033). Thirdly, as the intercept in the corresponding regression is not significantly different from zero, in the average workplace absences are negligible.

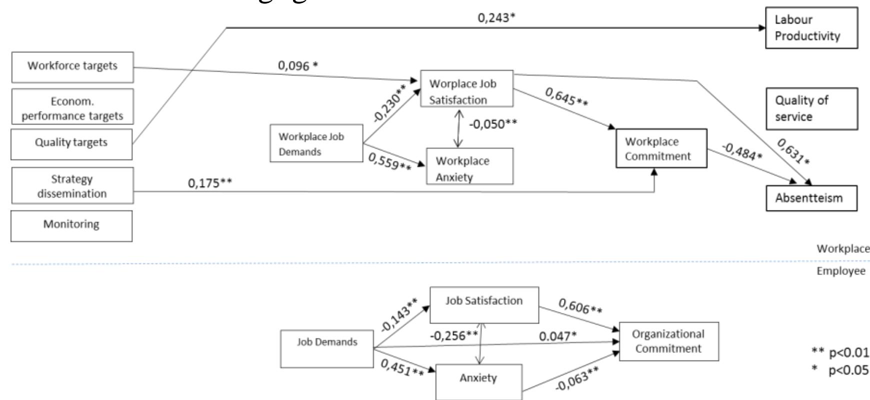

Figure 2. Significant direct associations in testing hypotheses 1 and 2

According to estimates of the second and third models, perceptions of job control and supportive management are positively associated with job satisfaction (b=0.273, p=0.000 for job control and b=0.494, p=0.000 for supportive management), organizational-commitment (b=0.057, p=0.009 for job control and b=0.203, p=0.000 for supportive management), and negatively correlated with anxiety (b=-0.112, p=0.000 for job control and b=-0.340, p=0.000 for supportive management). However, H3 and H4 are rejected since the interactions between job demands and job control or job demands and supportive management with wellbeing are insignificant.

H5 is supported. Consultative management is positively associated with job satisfaction (b=0.364, p=0.00) and organizational-commitment (b=0.147, p=0.000), and negatively associated with anxiety (b=-0.263, p=0.00). Additionally, significant indirect effects of consultative management via job control are observed for job satisfaction (b=0.045, p=0.000), organizational-commitment (b=0.010, p=0.011) and anxiety (b=-0.019, p=0.000).

Regarding the interactions between workplace job control and supportive management with targets and monitoring practices on job demands, wellbeing and organizational-commitment mixed results are found. In the case of job control, the interactions are not significant, both H6 and H8 are rejected. In the case of supportive management, workforce related targets together with perceptions of being supported by management can reduce perceptions of job demands (b=-0.225; p=0.021). Considering other targets and monitoring, no interaction is significant, and thus the data partially supports H7. H9 is also partially supported: supportive management may reduce perceptions of anxiety, when it is coupled with workforce related targets (b=-0.253; p=0.041) and quality targets (b=-0.227; p=0.011), but may also increase anxiety when in conjunction with economic performance targets (b=0.248; p=0.013) and strategy dissemination (b=0.372; p=0.003). In addition, the interaction between supportive management and economic performance targets is negatively associated with job satisfaction (b=-0.141; p=0.008). Finally, when the dependent variable considered is organizational-commitment, the interactions are not significant.

Conclusions

This study adds to the literature on performance management in the health sector. Taking into account the nesting of employees within workplaces, results show that having targets

on the quality of services can improve productivity in healthcare. It may well be that quality-targets are seen as good responses to productivity gaps, and that overall quality improvements may take longer to be achieved. Moreover, absenteeism can be reduced by policies that foster commitment and indirectly via strategic dissemination. These findings reinforce the importance of good communication channels in healthcare (Shantz et al., 2016), employees need to understand the strategy to deliver the service effectively.

Regarding the potential links between targets and monitoring and employee-level outcomes, strategy dissemination may increase levels of commitment in workplaces and workforce-related targets can lead to higher levels of job satisfaction, which are also positively linked to commitment. Hence, in terms of employee outcomes, good communication is important and workforce-related targets are doing their job. In addition, contrary to expectations based on critical management studies (e.g. McCann et al., 2015; Conway et al., 2016), targets and monitoring practices on their own seem unlikely to increase perception of workload nor are job demands negatively associated with performance. A focus on patients might mean that healthcare employees naturally expect high job demands. Yet, the results also indicate that when employees perceive an increase in job demands, there may be a decrease in job-related wellbeing.

As per the JD-R Model (Bakker and Demerouti, 2014), job control, supportive and consultative management are likely to be seen as resources, as they are positively associated with job satisfaction and commitment and negatively with anxiety. Consultative management can increase wellbeing either directly or via job control. However, the results suggest that greater job control is unlikely to offsett perceptions of job demands in healthcare, and thus question conclusions by de Jonge et al. (2000) that active jobs, defined as those with high demands and high control, imply greater wellbeing. The results appear to emphasize the value of participation (consultative management) and being well-informed (strategic dissemination).

As for the moderation of supportive management, perceptions of support together with workforce-related targets may reduce perceptions of job demands and anxiety. Nonetheless, economic performance targets can also decrease the likely benefits from supportive management for employee-wellbeing. In this context, it is noteworthy that economic performance targets are found to be unrelated to labor productivity, while quality targets may increase labor productivity.

Overall, this is a macro analysis of alternative pathways from targets and monitoring to performance in the healthcare sector. Further empirical studies are needed, where elements in performance management and wellbeing are considered in greater detail.

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