Lean management and employee well-being: Reconciling conflicting findings and ensuring successful implementation

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Abstract

'Lean management' is a management system that focuses on ensuring the efficient use of resources and eliminating waste, for the purpose of improving product quality, efficiency of processes and better responsiveness to customers. At every step of the lean process, the question asked is "what value is being added to the customer?". The performance advantages of lean management have been widely studied and consensus is emerging that lean management can pay dividends for multiple stakeholders. However, the impact of lean management on employee well-being is a current topic of lively debate. There is no consensus in the literature as to whether lean management improves or impairs employee well-being. Also, how to effectively implement lean to leverage improved and sustainable employee well-being, remains an important yet nascent topic of research inquiry. The purpose of this chapter is to introduce the topic (and appeal) of lean management before briefly reviewing the competing theoretical perspectives and empirical evidence on its impact on well-being. Following this, the chapter has two central aims. First, it introduces a framework, based on recent empirical research, which (1) helps reconcile the aforementioned conflicting findings, (2) provides a platform for future research to more comprehensively investigate the effects of lean management on employees, and (3) helps managers understand what specific actions can maximize the benefits while minimizing the potential harmful effects of lean management. Second, the chapter discusses some of the central emerging themes

explaining how lean management can be effectively implemented so that employee well-being is sustainably maintained.

Keywords: Lean management, JD-R model, lean job demands, lean job resources, lean implementation, well-being, HRM, HR practices

Introduction

Lean management is a multidimensional concept comprising a wide range of management practices, for instance work teams, supplier management, just-in-time (JIT) quality systems and cellular manufacturing, which are all embedded into one, integrated system (Shah and Ward, 2003). Lean management was first implemented in Japan, in the Toyota Motor Corporation (Pil and MacDuffie 1996). The Toyota Motor Corporation production line was designed to enable continuous process improvement, structured inventory management, waste reduction and quality improvement techniques (Black and Miller 2008). The success of the system which was widely celebrated and often referred to as Toyotism, left many American companies struggling to compete (Handel 2014). Consequently, many corporations in the United States and around the world, commenced implementing lean principles and practices themselves (Crute et al. 2003; Hasle et al. 2012). Lean management was seen as the antithesis of corporate bureaucracy and the new competitive weapon to deal with increased competition, changing markets, and economic crises that predominated in the 1970s and 1980s (Handel 2014). In this new work paradigm, success was not embedded in work practices associated with scientific management, but in making faster decisions, being flexible and innovative as well as ensuring employees were motivated, satisfied and thrive at work. Naturally, lean management became a central topic of academic research among scholars, with early results demonstrating evidence for its positive performance effects (e.g. Dalton, 1980). Subsequent studies reveal copious performance advantages associated with lean management including increased operational performance (e.g. Brown et al. 2006), financial performance (e.g. Eroglu and Hoffer 2014), marketing performance (e.g. Kou et al. 2015) and entire supply chain performance (e.g. Agarwal et al. 2006). In fact, the operational improvements and organisational performance advantages associated with lean management are apparent in much of the empirical research although the performance gains are still not universally accepted (Samuel

et al. 2015). While the interest in lean management originated in manufacturing with many positive results (Parker, 2003), it is not surprising to see its adoption has spread to health care (e.g. Lawal et al. 2014), service organisations such as call centres (Sprigg and Jackson 2006), banks (Bortolotti & Romano, 2012), and public administration (Radnor and Walley 2008) among many other contexts. Despite the growing optimism about the potential performance effects of lean management, its effects on employee well-being are significantly under-researched and this research domain is an ambiguous one given that the existing empirical evidence to date has yielded conflicting results (Bamber et al. 2014). We now turn to this debate, present the competing theoretical perspectives and provide a flavour of the competing empirical evidence permeating the literature to date. The rest of the chapter will articulate a key theoretical framework introduced into the lean management literature which represents significant progress in reconciling these conflicting findings before more concretely addressing the key themes of how lean management can be effectively implemented to ensure well-being is enhanced in a sustainable way.

Main text

The impact of lean management on employee well being

Introducing lean management principles promised to change everything for the better; eliminate waste, improve product quality, increase employee and customer satisfaction, and bring productivity to a higher level (Womack et al. 1990; Womack and Jones 1996). However, the effects that lean management actually has on the employee's experience is vigorously debated by scholars and from a theoretical and empirical standpoint, is highly under-researched (e.g. Bamber et al. 2014; Cullinane et al. 2014; Handel 2014). The lean management ideology has both its advocates and critics, and these views can be broadly classified into two perspectives; the unitarist perspective and the pluralist perspective, respectively (Bamber et al. 2014). The field of operations management, for example, tends to opt for a unitarist perspective, emphasising that lean management benefits organisations in terms of performance and employees in terms of well-being. Many social scientists, on the other hand, tend to adopt a pluralist perspective, and drawing from labour process theory, argue that while lean management may be good for organisations, it

ultimately seeks to gain control over employees, and in doing so frequently and significantly impairs their well-being (Anderson-Connelly et al. 2002).

From the more optimistic unitarist perspective, workers are believed to benefit from lean management through enhanced participation and teamworking, which enables them to engage in greater problem solving, thereby improving task performance (Taira 1996). Thus, lean management is viewed by many to benefit workers through enhancing their skills development and by providing them with greater autonomy, meaning and involvement in process improvement decisions (Turner 2012). From its inception, the introduction of lean management sought to make tasks more challenging and meaningful thereby removing the 'mind-numbing stress' associated with mass production (Womack et al. 1990) and eliminating the possibility of strained working conditions more generally (Batt and Appelbaum 1995). For example, the focus of lean management on reducing waste, errors and rework, could reduce employees job demands such as workload and reduce the need for recovery after a work day (de Koeijer et al. 2014). In the same vein, lean management has been touted to improve other personal work outcomes for employees such as their work characteristics (Parker, 2003), morale (Bhamu and Sangwan 2014), intrinsic motivation (De Treville and Antonakis 2006), satisfaction and commitment (Graban, 2008; Holden, 2011), and health and safety (Longoni et al. 2013).

Departing from the more optimistic view of lean management, an alternative pluralist perspective, challenges the notion that lean management is beneficial for employee well-being. This view purports that the cost savings associated with lean management are achieved by imposing excessive workloads on employees rather than through real efficiencies such as shorter decision times, thereby simply amounting to a "management by stress" managerial tactic (Parker and Slaughter 1988). A number of studies have indeed supported this negative perspective, demonstrating how lean management leads to work intensification and heightened levels of stress among employees (Anderson-Connelly et al. 2002; Bruno and Jordan 2002; Carter et al. 2013; Lewchuk and Robertson 1996). Prior research has also revealed that employees perceive higher levels of stress, fatigue and tension working under a lean management regime when compared to traditional operating companies (Landsbergis et al. 1999). In this study, the demise in well-being was attributed to the fast pace of work, the highly repetitive nature of the work, long working hours and the minimal rest breaks associated with lean management. In effect, this is why the common question arises "Is lean mean?" (e.g. Conti et al. 2006). Reviews on the topic of lean management

have largely concluded that lean management produces negative effects for employees' health and well-being although there are quite a few studies and reviews which reveal a mixture of positive and negative effects (e.g. Bhaumu and Sangwan 2014; Hasle et al. 2012).

In fact, many scholars, rather than adopting a purely unitarist or more nuanced pluralist perspective, point out the contextual nature of lean management and also highlight its multifaceted nature whereby some aspects of lean can positively affect, while others can negatively affect, employee well-being (Anderson-Connolly et al. 2002; Beraldin et al. 2019; Cullinane et al. 2013; Seppala and Klemola 2004). In this regard, many researchers highlight that the effects of lean management might have different impacts and meanings for different groups of workers (e.g. Kashefi 2009). For example, Seppala and Klemola (2004) revealed that, on average, white-collar employees (production managers) perceived that their work had variety and offered opportunities for one's skills and knowledge utilization albeit they also perceived constant time pressure. On the other hand, blue collar workers did not perceive greater job variety, use of knowledge and skills and had less opportunities for decision making and development. In the same vein, Proctor and Radnor (2014) found that while lean management lead to deskilling, task simplification and much greater work standardisation, which significantly undermined worker satisfaction, at the same time workers expressed satisfaction with the increased levels of teamworking. In another study, Conti et al. (2006) found among 1,391 workers from 21 manufacturing sites in four UK industry sectors, that while some lean management practices can be stressful, lean management as a whole is not inherently stressful for workers. In fact, their study found evidence for a nonlinear effect whereby the implementation of lean was initially stressful but this dissipated over time. Their study revealed that the important factor with respect to the impact of lean management on employee well-being is the managerial decisions taken in designing and implementing lean. Indeed, job resources such as supervisor support and colleague support were believed to play a critical role in ensuring lean management eventually yielded positive outcomes for employees. An additional interesting, and perhaps rather surprising finding from their study is that although lean management was characterized by a low control environment, this served benefits for workers such as automation, increased pride in the quality of products, and heightened job security, thereby ultimately reducing stress levels.

The findings from the research reviewed here highlight a number of important insights in relation to disentangling the effects of lean management on employee well-being. First, they

identify the multifaceted nature of lean management, which can simultaneously have practices which can be categorised as either soft or hard, and this can explain the potential positive or negative effects on employee well-being (e.g. Beraldin et al. 2019). In the same vein, because lean management practices may be pushing employee well-being in different directions, there is a high probability of employee well-being trade-offs. For example, lean management might enhance employees' knowledge and skills thereby improving happiness related well-being in the form of job satisfaction but at the same time increase their workload thereby undermining their health related well-being indicators such as stress. This possibility of trade-offs arising from management practices on different aspects of employee well-being i.e. happiness (e.g. job satisfaction), health (e.g. burnout), and relationship (e.g. trust) dimensions, is widely acknowledged in the strategic human resource management literature (e.g. Van de Voorde et al. 2012) and represents an important area of future research that needs to be entangled in the context of lean management (de Koeijer et al. 2014). Overall, this means that viewing lean management in its totality as well-being enhancing or well-being impairing, may be myopic. In addition, the amount or the extent to which the practices are adopted may also be an important factor to take into account as it may be that lean management practices are beneficial but after they reach an inflection point, can be harmful for employee well-being (Conti et al. 2006). The possibility that the effect of management practices are curvilinear has been widely stressed in the management literature in recent years and referred to as the 'too much of a good thing effect' (e.g. Pierce and Aguinis 2013).

Second, the findings also demonstrate the necessity to encapsulate the wide range of contextual factors to better understand the effects of lean management in all its complexity. The role of context has been neglected in much of the organisational behaviour literature (Rousseau and Fried 2001) and has been often "controlled away" by researchers rather than being empirically tested to understand its impact (Johns 2006, p. 289). In fact, the effects of lean management on employee well-being varies according to many contingencies including the type of organisation, the type of job that employees perform (e.g. blue collar versus white collar workers) and even the particular national culture in which it is practiced (Wong 2007). Finally, related to the contextual argument, the findings presented solidify the point that lean management is rarely experienced by employees in isolation and the practices associated with lean are experienced by employees within a much broader organisational context. There are many strategies that organisations can take, such as the provision of appropriate job resources, which may enhance the positive effects or protect

against the negative effects, of lean management on employee well-being (Beraldin et al. 2019; Cullinane et al. 2013) and these need to be borne out in future research on this topic. Indeed, the context of lean management implementation cannot be ignored (Fournier and Jobin 2018) and the type of managerial choices made in the design and management of the actual change (Conti et al. 2006) will also have profound implications for its effects on employee well-being.

In the following sections, we will outline a contextual framework which encapsulates these aforementioned contingencies and in particular helps us reconcile the conflicting findings on the relationship between lean management and employee well-being. The proposed framework offers practitioners guidelines to maximise the benefits and avoid the perils of lean management while at the same time offering a comprehensive avenue for future research pursuits on the topic. Following this, we will turn to a discussion on the key challenges for employee well-being with respect to the implementation of lean management, and offer concrete strategies based on previous research, to indicate how a sustainable culture change embodying lean management can be achieved whereby employee well-being can be maintained and thrive.

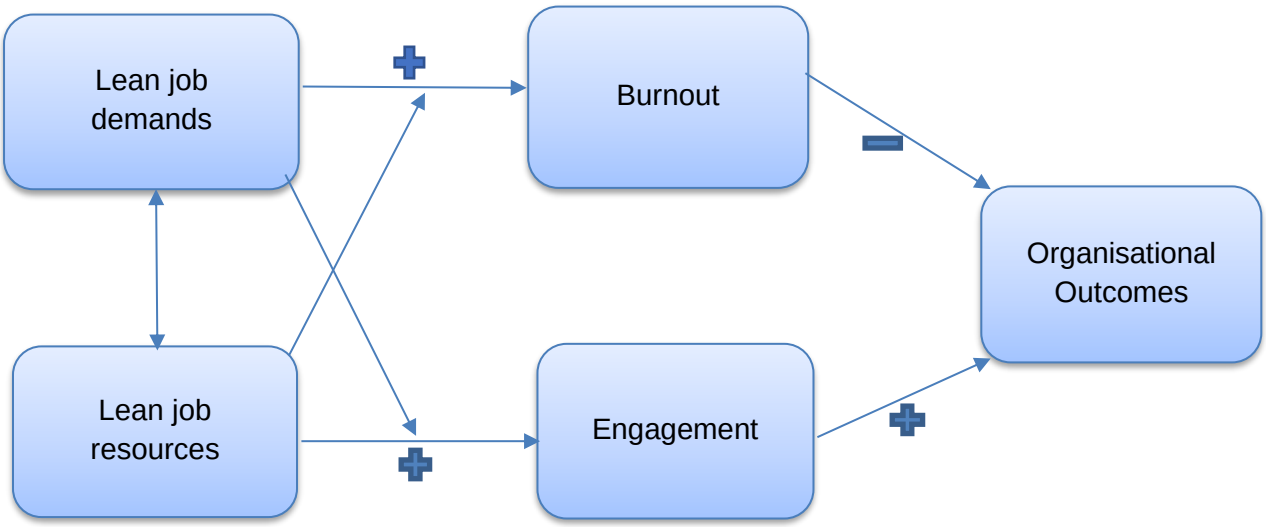
The impact of lean management on employee well-being: A job demands-resources model perspective

In the quest to better understand the conflicting results regarding the effects of lean management on employee well-being, scholars in recent years have applied a comprehensive framework to the lean management context. Specifically, Cullinane et al. (2014) suggest that the job demands-resources model (JD-R; Demerouti et al. 2001), a well-known and influential model in the field of occupational health psychology, can be applied to the lean context in order to better understand the mixed effects of lean management on employee well-being. The job demands-resources model proposes that each workplace has its own specific job demands and job resources. Job demands represent the physical, psychological or organisational aspects of the job that require effort which may have psychological, social and physiological costs for employees. On the other hand, job resources are defined as those physical, psychological or organisational aspects of the job that are (1) functional in achieving work related goals, (2) reduce job demands and their associated physiological, social and psychological costs, and (3) stimulate personal growth and development. The JD-R model highlights that job demands and job resources are expected to lead to two distinct psychological processes i.e. a health impairment pathway whereby job demands lead to

impoverished health/burnout and a motivational pathway whereby job resources lead to motivation/engagement (Bakker et al. 2004). In addition, the model proposes an interactive role of job demands and resources such that the negative effects of job demands on employee health/burnout can be buffered by job resources (the 'buffering effect') while the positive effects of job resources on employee motivation/engagement become increasingly salient in the presence of high job demands (the 'coping effect'; Bakker et al. 2007). Notwithstanding its limitations and criticisms (See Schaufeli and Taris 2014), the core propositions of the JD-R model have largely gained widespread empirical support in the literature and therefore it represents one of the leading models to explain employee well-being in the workplace (Bakker et al. 2004; Demerouti et al. 2001; Schaufeli et al. 2009).

Applying the JD-R model to the lean context, Cullinane and colleagues (2014) enrich our understanding of the effects of lean, by demonstrating that there are lean related job demands and resources, both aspects of lean job design, which have the potential to activate these two distinct aforementioned psychological processes i.e. a health impairment and motivational pathway. In line with the traditional JD-R model and in particular the adaptions of Cullinane et al. (2014), we apply the JD-R model to the lean context as depicted in Figure 1. The figure demonstrates how there are lean specific job demands and job resources which activate health and motivational outcomes for employees in the form of burnout and engagement, respectively. Burnout and engagement, in turn, are expected to be negatively and positively related to organisational outcomes, respectively. The diagram further depicts how lean specific job resources may protect or buffer against lean specific job demands and how lean specific job resources become increasingly pertinent in the face of lean specific demands.

Figure 1. The JD-R model in the lean context



Source: Adapted from Cullinane, Bosak, Flood and Demerouti (2014).

The application of the JD-R model to the lean context has profound implications for understanding the effects of lean management on employee well-being. First, the fact that the JD-R model can simultaneously evoke a motivational and health impairment pathway, means that we cannot regard lean management as a technique which has uniform positive or negative effects on employee well-being (Hasle et al. 2012). Instead, lean management has job design features that produce an environment which is demanding and resourceful thus having both exhausting and motivational properties (Cullinane et al. 2014). As a result, researchers are now much more attuned to the important distinction between the 'soft' and 'hard' practices which both together comprise a lean management strategy (Beraldin et al. 2019).

Second, the propositions of the JD-R model suggest interactive relationships. This further emphasises that lean management is unlikely have universal positive or negative effects but moves towards the question of how it can be implemented such that its benefits are maximised and its costs minimised (Hasle et al. 2012; Huo and Boxall 2018). Indeed the JD-R model shows, in a comprehensive way, how the impact of lean management on employee well-being is likely to depend on whether employees have sufficient and appropriate resources to combat the specific lean related job demands experienced. Specifically, lean specific job resources can buffer against the potentially negative effects of lean specific job demands on employee burnout. In addition, lean specific job demands can interact with lean specific job resources such that the full benefits

of resources can be reaped when employees are confronted with demands. The rationale for this interactive effect emanates from conservation of resources theory (Hobfoll 2002) and proposes that the effects of job resources on outcomes can be modest but become increasingly important when employees really need them (Schaufeli and Taris 2014). In other words, in highly stressful situations, it is likely that employees will require resources to cope with the specific demands they are confronted with to reduce stress. For researchers, the propositions of the JD-R model involving such interactive relationships highlight how important it is to go beyond testing direct relationships between lean management and employee well-being to fully understand its effects.

Third, the application of the JD-R model to the lean context draws attention to the fact that the demanding nature of lean management is not necessarily always a bad thing for employee well-being (Cullinane et al. 2013). Building on the work of Crawford and colleagues (2010), Schaufeli and Taris (2014) have distinguished between 'hindrance' and 'challenging' job demands in the JD-R model and note how they can have differential effects on employee outcomes. In this respect, hindrance demands are those demands that constrain individual's development and work accomplishment and consequently can cause burnout and result in a passive coping response manifested in disengagement (Le Pine et al. 2005). Examples of lean specific hindrance demands might include work overload (Huo and Boxall 2017), physical demands, work pace and monitoring pressure (Cullinane et al. 2013). Demands of this nature can cause negative emotions and impoverish employees' capacity to deal with such demands and to accomplish their work goals. On the other hand, challenging demands can be energy depleting but at the same time motivational in nature. Indeed, while challenging demands can be stressful, they are also viewed as motivational because they are linked to prospects for advancement and achievement (Crawford et al. 2010). In other words, such demands are viewed by employees as opportunities to learn, grow, achieve and display their skills that may be rewarded in the future. Examples of lean specific challenging demands might include heightened work complexity (Huo et al. 2019), problem solving demands and production responsibility (Cullinane et al. 2013) and work pace and task interdependencies (Beraldin et al. 2019). In the meta-analysis of Crawford et al. (2010), the authors were able to demonstrate more generally how challenges were positively related to both work engagement and exhaustion. In the lean context, the potential of lean specific job demands to represent either a 'hindrance' or 'challenge' has been acknowledged in the literature (Cullinane et al. 2013). Subsequent research has also acknowledged the complexity of demands in the lean context and

highlight that in the case of challenging demands, which can be simultaneously motivational and exhausting, it is important that they are also accompanied by the appropriate resources to maximise their advantages and minimise their disadvantages. For example, Huo and Boxall (2018) found that job resources (training, participation in decision making, and line manager support), had a 'buffering effect' in the relationship between problem solving demands and emotional exhaustion in a lean context. The authors also found empirical support for the 'coping effect' whereby the aforementioned resources were more strongly related to employee engagement when problem-solving demands increased. Similar findings were borne out by Beraldin et al. (2019) who found that softer lean management practices (SLPs) in the form of participation and managerial support, framed as positive resources, reduces the effects of JIT hindrance job demands on exhaustion, and JIT related hindrance demands enhance the positive effects of SLPs on work engagement. As a whole, this important advancement in the JD-R model in general and in the lean context in particular, highlights that demands are not always harmful and that to understand the effects of lean specific job demands on employee well-being, it is paramount to consider the accompanying job resources and in particular to acknowledge the specific type of job demand considered because such demands have the potential to be simultaneously motivational and energy depleting.

The above discussion pinpoints the important role of the JD-R model in reconciling the conflicting results on the impact of lean management on employee well-being. The core message is that lean management is unlikely to lead to uniform positive or negative employee outcomes. Instead, the question concerns how lean management is actually supported by the organisation and more broadly, how it is implemented. We now turn to a discussion of some of the key themes which have emerged advising on what can be done to ensure lean management is successfully implemented so that employee well-being prospers in a sustainable fashion.

The effective implementation of lean management for sustainable employee well-being

The effects of lean management on employee well-being, as depicted above, invariably depends on which particular lean practices are used, contextual factors and whether job resources are balanced with or buffer against lean specific job demands that could threaten employee well-being. One thing which is hard to find evidence on is how lean is actually implemented and in particular what strategies are used to ensure employees' needs are catered for so that the potential benefits of lean management materialise and sustain. While there are countless examples of where

lean management has been successfully implemented and sustainable outcomes achieved, there are as many examples where lean management has drastically failed to deliver for all the stakeholders involved. A seminal case on organisational benefits can be seen in the example of Virginal Mason Medical Centre in the United States, whereby lean management implementation was a success story, with benefits including improved quality of patient services care, reduced waiting times, optimization of space and scheduling of operating rooms as well as improved well-being outcomes (Danese et al. 2018). However, in the same context, there are cases which depict a bleaker picture in terms of lean management implementation. In Saskatchewen in Canada in 2008, the ministry of health implemented a multi-million dollar investment which brought lean management to the provinces health care system. Evaluating the impact of lean years later, research revealed that for every one dollar saved by lean, Saskatchewan spent $1,511, while patient outcomes did not improve, workload increased and staff morale declined (Moraros et al. 2016).
The latter example highlights that lean management implementation is not straightforward and 'getting it right' is important to avoid negative outcomes for organisations and employees alike. In fact, the implementation of lean management is believed to be fraught with difficulties and the rates of successful lean initiatives tend to be rather low (Bhamu and Sangwan 2014). The evidence suggests that positive and sustainable outcomes from lean management often fail to materialize because of inadequate attention to and concern for employees' needs and well-being in the process. Indeed, as the above review illustrates, lean management in itself has the potential to impair employee well-being without the appropriate conditions. Asked whether lean management is compatible with employees health standards, Adler (1998) responded with a "maybe-conditional on good implementation".

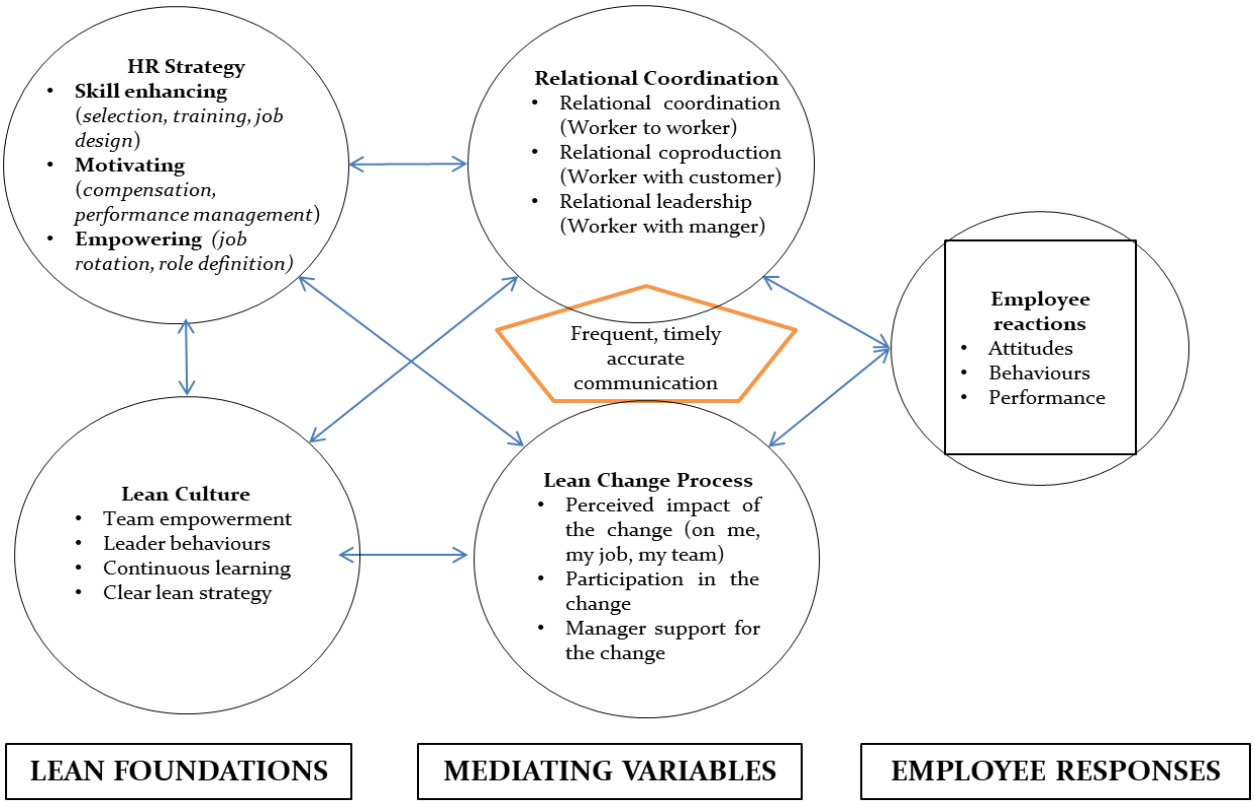
In a large scale study in the United States involving surveys and focus groups of over 1,000 employees and union leaders, employees reported widespread dissatisfaction with lean management and noted a drastic change in the levels of support by the organisation and many broken promises (Bruno and Jordan 2002). The researched employees noted a drastic change in the levels of support and care by their organisation after implementation. While initially promising daily meetings, new workplace practices which were reasonable, and greater empowerment, these did not arise and amounted to broken promises. Employees instead described their new working life under lean management as having less say over work processes, having little time to accomplish good work because of the pace of the production line, that safety had been neglected

and that the accelerated physical demands were draining (Bruno and Jordan 2002). In another study, Lewchuk and Robertson's (1996) research among 1,670 workers, revealed that while workers were promised more control over work, as well as more varied and challenging tasks, the conditions at work had severely worsened with control dissipating, work pace and load increasing, tasks becoming more repetitive and increased performance expectations introduced which significantly undermined employees health. These studies highlight the management and implementation challenges surrounding lean management inducing employee grievances and impaired well-being. In particular, it appears that more often than not, successful lean management implementation is dependent on whether the 'soft' or people oriented issues are centre stage or not (McMackin and Flood 2019). How to successfully manage the implementation of lean and how to ensure the sustainability of such changes while maximising employee well-being is still not fully understood (Bamber et al. 2014). A systematic literature review consisting of 240 studies from 2003-2015 indicates that very few studies have attempted to develop models for lean management implementation (Danese et al. 2018). We now turn to discuss some of the central and recurring themes which have indeed emerged in the scant literature, in order to explain what can be done to ensure that people issues are highlighted as a critical aspect of sustainable lean management. Our review of suggestions is by no means exhaustive but cover a relatively broad spectrum of the latest thinking on how to ensure the effective implementation of lean management for maximising employee well-being in a sustainable manner.

A rather general but central theme which emerges to account for why implementation problems arise with respect to lean management, is the over emphasis on the technical pillar at the expense of the social (people) pillar of lean implementation (Danese et al. 2018; McMackin and Flood 2019). The neglect of such social issues goes against the prescriptions of socio-technical systems theory which purports that work design, including lean management, should equally attend to the human and technical context in which the work is undertaken (Mumford, 2006). Failing to do so is akin to a form of ultra-Taylorism with detrimental ramification for employee well-being (Adler and Cole 1993). Reviewing selected systematic reviews on the topic, McMackin and Flood (2019) highlighted that there has been a welcome increase in studies examining the relevant factors associated with the social pillar of lean management implementation. These important factors, regarded as essential for successful lean implementation have included; organisational culture, team empowerment, continuous learning, leadership and manager

behaviours, HR strategy and change management. Integrating these factors, among others, they propose an overarching theoretical framework for the social pillar of lean whereby relational coordination theory is integrated as a crucial component for successful lean implementation. Relational coordination theory postulates that for successful work coordination, it is paramount that employees have shared goals, shared knowledge and mutual respect, which are supported by and enable frequent, timely and accurate information. In an environment characterised by high levels of relational coordination, McMackin and Flood (2019) argue that shared problem solving, rather than a blame culture, is critically necessary in the challenging situations of lean management implementation. At the same time, the process of implementation will be smoother and maintain employee well-being in the long term. This is because the relationship/people or social pillar of lean implementation is given priority given the focus on the relationships between workers, the relationship between workers and their leaders, and the relationship between workers and customers. The full model is depicted in Figure 2. The model specifically highlights how organisational factors referred to as 'lean foundations' (which include HR strategy and a lean culture), affect employee behaviours at the group level (which are in essence 'relational coordination' and the 'lean change process' i.e. how the change process of transitioning to lean is managed), which in turn influence employee responses (in the form of attitudes, behaviours and performance). The recursive arrows in the diagram also recognise that the proposed relationships are not necessarily linear but can work in both directions simultaneously. In doing so, the model encapsulates the complex and interdependent relationship between the HR strategy and lean culture. More broadly, the model showcases the wide spectrum of management actions that can be deployed to successfully implement lean management so that performance in addition to positive employee reactions such as employee well-being will be enhanced.

Figure 2. Theoretical Framework for the Lean Social Pillar



Source: Adopted from McMackin and Flood (2019).

Related to the aforementioned model and in particular the important link between HR strategy and lean management, it is perhaps not surprising that another predominant theme which has emerged in the literature to explain the conditions for successful lean management implementation, concerns the role of the HR function (Danese et al. 2018). What role (if any) HR specialists play (or should play) in the introduction of lean management and the implications for HR policies and practices is still not fully clear (Bamber et al. 2014). However, scholars have suggested that "the extent to which an organisation's HR system and culture are aligned with lean requirements will be positively related to employee reactions to lean implementation" (McMackin and Flood 2019, p.49). Although focusing on performance rather than employee well-being per se, Menezes et al. (2010) found that a high degree of integration between operations management and HRM is crucial to the success of lean management implementation. Specifically, the authors found

that the continuous improvement required by lean cannot be achieved, without employee participation and involvement. This is not surprising since adapting to and adhering to lean management requires employee commitment, motivation and attitude, thus workers cannot be disassociated from the implementation process if real cultural change is to be achieved (e.g. Fournier and Jobin 2018). Focusing on employee well-being, de Treville and Antonakis (2006) argue that when there is too much of a focus on slack reduction without appropriate employee involvement, lean management will have negative consequences for employee well-being. The challenge, however, is that production systems based on lean management imply standardisation of routines and operational uncertainty which although may produce efficiency, often manifests in lower levels of employee involvement and control. Indeed, practices such as total preventative maintenance (TPM), JIT inventory control and cycle time-time reduction, facilitate managerial rather than employee control over the pace of work and the production process (Huo et al. 2019). In essence, this is why the influential job demands-control model of Karasek (1979) was found to be of limited use in the lean management context for explaining employee health and well-being (Conti et al. 2006). Therefore, within the confines of lean management principles, managers need to creatively make use of empowering or involvement oriented HR practices, both in the implementation of lean management and side by side with other lean management practices in the long term. The feeling of such empowerment will be paramount for a sustainable lean management culture which maintains employee well-being in the process (Jones et al. 2006).

In the same vein, to maintain employee-being, at the implementation stage and beyond, HR professionals have an important role to play in cooperating with unions when implementing change, and ensuring the HR practices around hiring, performance management, rewards, and indeed empowerment, are compatible with the principles of lean management (Fournier and Jobin 2018). HR plays a key role in facilitating lean management by ensuring employees are ready for organisational changes associated with lean and that the practices are complementary rather than opposing (Bamber et al. 2014). To better understand this complementary nature of HR practices in the lean management implementation process, the framework of de Koeijer, Paauwe and Huijsman (2014) is informative. de Koeijer and colleagues (2014) introduced a theoretically-driven conceptual framework which links lean management, enabling HRM, strategic climate and wellbeing outcomes. The central tenet of the framework is that when lean management is combined with enabling HRM, mutual gains can be created in the form of improved organisational

performance and well-being. The enabling bundle of HR practices introduced consist of the following; training and development, performance appraisal and rewards, teamworking and autonomy, participation and job design, recruitment and selection as well as work/life balance and employment security. These HR practices are typically considered progressive HR practices in the strategic HRM literature and are typically referred to as high performance work practices, high commitment HR practices or high involvement work practices. Such practices have been found to yield positive performance outcomes and improve employee well-being (See Van de Voorde and Peccei 2019 for a review of studies). The added value of adopting enabling HR practices in the context of lean management implementation is that they signal and reinforce the values of the lean management strategy and make it more meaningful for employees by paying attention to the social pillar (people aspects) of work. Indeed, a climate of continuous improvement is more likely to materialise in a tangible way when HR practices encourage and reinforce employees to respond and behave in ways that support the objectives of lean management (de Koeijer et al. 2014). In addition, (and in line with the previously presented JD-R model), such HR practices can constitute vital job resources in themselves which may help to buffer against the potential negative aspects of lean management for employee well-being while at the same time enhancing their potential positive effects. For instance, providing employees with job security may buffer against the negative effects of lean management on relationship well-being in the form of trusting relationships (Graban, 2008). Similarly, advanced training and development practices linked to the specific requirements of lean can be seen by employees as a growth and learning opportunity (challenge demand) and as a positive resource enabling them to better accomplish their tasks and successfully adhere to lean protocols (Cullinane et al. 2014; Huo and Boxall 2017). This could manifest in terms of higher satisfaction (improved relationship well-being) and lower stress (improved health related well-being). The use of empowerment/involvement oriented HR practices could also constitute a valuable resource instrumental in heling employees cope with the new lean specific requirements. Indeed, if employees are involved and empowered to champion lean management from the outset, they will have a greater say in what the procedures will be, how they will be accomplished and when they will be accomplished, thereby having profound implications for their happiness and health related well-being. In summary, enabling HR practices are likely to buffer against the potential negative effects, and enhance the positive aspects, of lean management on employees' well-being (Koeijer et al. 2014).

The final prominent theme which emerges with regard to successful lean management implementation, concerns the role of the front line manager (e.g. Huo et al. 2019; Huo and Boxall 2018). Related to the role of enabling HRM discussed above, it should be noted that front line managers are the ones who are actually charged with the responsibility for implementing HR practices (Purcell and Hutchinson 2007). For example, line managers play a central role in offering training and development, carrying out the performance appraisal (and performance management more generally) and making pay decisions for employees. In effect, lean management cannot be implemented successfully without the support of front line managers (Huo and Boxall, 2017). In addition to their role in enacting lean management practices and enabling HRM practices, front line managers can also act as a pivotal resource to help employees deal with the accompanying demands associated with lean and thereby protect against impoverished well-being. Front line managers are likely to have a deep understanding of the particular demands faced by their employees and are thus in the best position to help them and offer support (Ray and Miller 1994). Support of such kind can be instrumental i.e. filling in for absent workers or directly helping employees with their heightened workload caused by certain lean management practices. However, support could also be emotional in nature whereby front line managers show empathy to employees and listen to their concerns thereby demonstrating care for their well-being. Huo and colleagues (2019) found that line manager support represents a vital job resource that helps employees cope with the work intensity under lean settings which in turn protects against the development of burnout and impaired well-being. Beraldin et al. (2019) also found that managerial support buffered against the negative effects of JIT job demands on burnout. Conti et al. (2006) found that support from the line manager was central in ensuring that the implementation of lean management eventually lead to successful employee outcomes i.e. improved well-being. Therefore, in the context of lean management implementation, the role of the front line manager in endorsing lean management (in addition to providing the appropriate support to employees) and successfully implementing HR practices which are in sync with the lean management philosophy, is imperative for success. However, given the increased expectations put on front line managers in the context of lean whereby they need to implement and manage lean practices, and enact and deal with a broader spectrum of people management issues (Townsend and Russell 2013), their own workload is likely to escalate and their own well-being may also deteriorate. Therefore, it is critical that senior managers pay attention to this issue and provide the appropriate support, training, and

rewards for line managers so that they have the ability, skills and motivation to support their own employees and successfully implement the lean related and general HRM policies and practices (Huo et al. 2019). Empirical support has found that providing front line managers with lean related training, top management support and higher levels of remuneration, is especially relevant for enhancing their engagement in a lean context (Huo and Boxall 2017).

Conclusions/Summary

Lean management has become a ubiquitous term in organisational life and is practiced across virtually all sectors of today' industry and service sectors. The appeal of lean management lies in its performance advantages which empirical research has widely substantiated across many organisational and cultural contexts. However, the performance advantages of lean management can sometimes outweigh the advantages for employees and especially their well-being. As depicted by the wide variety of studies reviewed in this chapter, there is fierce and ongoing debate about whether lean management improves or impairs employee well-being. To reconcile the conflicting evidence which permeates the literature, this chapter draws on recent work which integrates the JD-R model to the lean context. This all-encompassing contextual model allows us recognise the multifaceted nature of lean management practices and in particular to appreciate the fact that lean management is unlikely to lead to uniform positive or negative consequences for employees. Instead, lean management can have both motivational and exhausting properties and the central priority for managers should be to ensure that there is an adequate and appropriate balance of lean job demands and job resources. The integration of the JD-R model, however, also shows us the complexity of understanding the effects of lean management from a research and practical point of view as the model assumes any job demand and job resource is likely to influence employee well-being. Therefore, this is only the start of the journey for researchers to ascertain what specific lean job demands and job resources, and the combination of them both, is likely to work best to enhance employee well-being in a specific context. We are in special need of future empirical studies to examine the interrelationship between lean management and HR strategy to decipher how they can support each other to ensure sustainable employee well-being. What also becomes clear from anecdotal cases depicting organisational failures with lean management as well growing empirical evidence on the topic, is that 'getting right' the implementation process of lean management is imperative. In particular, focusing on the technical aspects of lean

management from the outset while neglecting the social (people) aspects, is a recipe for failure. On the basis of accumulating conceptual and empirical work, this chapter pinpoints what can be done to address these people aspects. Specifically, we see significant promise arising from lean management when it is implemented with a supporting lean culture in tandem with a supporting HR strategy aimed at fostering relational coordination in the organisation. In addition, HR professionals, historical guardians of employee well-being, will play a vital role in ensuring the social (people) aspects of lean are not neglected at the implementation stage and beyond, and that line managers are equipped to deal with the change process and strategy implications of lean management initiatives.

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