# Disentangling the nexus between HRM bundle and lean: understanding enabling HRM practices to support lean service

*Araz Zirar (A.Zirar@lboro.ac.uk)*
*Loughborough University*

*Alok Choudhary*
*Loughborough University*

*Clive Trusson*
*Loughborough University*

## Abstract

This paper explores how service organisations utilise HRM practices to support lean service. Data was collected using semi-structured interviews from five service organisations and supplemented by observations, secondary data and field notes. The findings suggest 18 enabling HRM practices to support lean practices. Together, they ensure that service organisations: (i) resource the right people to support lean, (ii) train employees for lean knowledge, (iii) align their performance with lean, (iv) reward and recognise them for desired lean-behaviour and outcomes, (v) provide them with fluid flow of information on lean projects, (vi) encourage discretionary behaviour in favour of lean and (vii) look after their health and safety.

**Keywords:** Lean service, Enabling HRM practices, Multi-case study

### Introduction

Lean is gaining momentum in the service sector (Suárez-Barraza, Smith and Dahlgaard-Park, 2012). Although it originated in the manufacturing sector, its potential to improve services is increasingly realised (Sunder, Ganesh and Marathe, 2018). Service organisations employ lean methodology to, among other objectives, improve their service delivery processes (Piercy and Rich, 2009). Such intended improvements aim to eliminate waste and create value for customers (Bowen and Youngdahl, 1998). Scholars argue that lean service has helped organisations with the reduction of time and improving the quality and quantity of service delivery (Lorden *et al.*, 2014). They also suggest that lean tools help organisations to promote employee innovative ideas in service delivery (Lindskog, Hemphälä and Eriksson, 2017).

However, recent evidence suggests that lean service is not a mere application of lean tools and techniques (Bortolotti, Boscari and Danese, 2015). It requires the effective involvement and buy-in of the workforce of service organisations (Uhrin, Bruque-Cámara and Moyano-Fuentes, 2017). It necessitates that service organisations endorse new working methods, practises and employee behavioural patterns (Wickramasinghe

and Wickramasinghe, 2017). For that reason, they need to utilise enabling HRM practices to orient their employees towards lean practices and improve their buy-in to lean ways of working (Abdi, Shavarini and Seyed Hoseini, 2006).

**Literature review**

The term 'lean' was initiated in the manufacturing sector to refer to a set of management practices geared towards improvements in the efficiency of production (Holweg, 2007). It was first used by Krafcik (1988) to specifically describe the Toyota Production System (TPS) and was later popularised in the West by Womack, Jones and Roos (1990) in *The Machine that Changed the World*.

The definition of 'lean', adopted in this paper, is that 'Lean is a bottom up approach where management plays a supportive and facilitating role in engaging shop-floor workers to form cross-functional self-directed work teams and apply Lean tools.' (Shah, Chandrasekaran and Linderman, 2008, p. 6683) This definition combines two major components of any lean programme: (i) the tools and techniques of lean and (ii) the people who work with these tools and techniques. These two components were also originally included in Ohno's (1988) description of Toyota Production System.

In recent years, the application of lean in the service sector has gained increased attention (Suárez-Barraza, Smith and Dahlgaard-Park, 2012). This recent literature responds to Bowen and Youngdahl's (1998) earlier argument in favour of transferring lean from a manufacturing context to a service context. They justified that lean is suitable for a service context and yields similar benefits to those in a manufacturing context. Since the publication of their research, lean has been extended to the service sector and a proliferation of research on lean service has been published (see, for instance: Ahlstrom, 2004; Abdi, Shavarini and Seyed Hoseini, 2006; Hanna, 2007; Suárez-Barraza, Smith and Dahlgaard-Park, 2012; Radnor and Osborne, 2013; Sunder, Ganesh and Marathe, 2018).

To enable employees to support lean practices, service organisations must address several issues related to people management that arise from lean service operations (Sparrow, Hird and Cooper, 2014). These issues include: (i) training employees in lean-related knowledge (Uhrin, Bruque-Cámara and Moyano-Fuentes, 2017), (ii) engaging employees in lean service (Bamber *et al.*, 2014), (iii) encouraging employees to use discretionary behaviour to support lean (Bevilacqua, Ciarapica and De Sanctis, 2016), (iv) motivating employees to conduct lean projects (Atkinson, 2010) and (v) devolving lean relevant HRM practices to line managers during the transition to lean (Gollan, Kalfa and Xu, 2015).

Addressing these issues require a proper utilisation of HRM practices (de Koeijer, Paauwe and Huijsman, 2014). Overlooking the role of HRM practices not only fails service organisations in orienting their employees to buy-in to lean practices but also makes them unable to ensure that their employees have the required lean knowledge and skills (Bonavia and Marin, 2006; Uhrin, Bruque-Cámara and Moyano-Fuentes, 2017).

However, one of the current discussions in this area is that despite the crucial role of HRM practices to support lean service, our understanding of how service organisations utilise such practices is limited (de Koeijer, Paauwe and Huijsman, 2014). One major issue is that there is significant ambiguity around the HRM practices that service organisations utilise to enable their workforce to support it. There is a lack of consensus about the number, the use of specific HRM practices and their relevance to lean service operations. There is also a lack of contextual and real-world understanding of the lean-relevant HRM practices in the literature. For that reasons, this study attempts to thoroughly explore how service organisations utilise HRM practices to support their

corporate lean programmes. In doing so, it attempts to answer how relevant is enabling HRM practices to lean service and what are these practices. It also attempts to answer how and why these practices are utilised to support lean service operations.

**Research methodology**

Multiple case studies were used to collect the primary data because a review of the existing literature revealed the infancy of research on HR-enabled lean service. In such a nascent stage of research, qualitative research, based on multiple case studies, allow researchers to explore the research area in-depth and its real-world context (Voss, Tsikriktsis and Frohlich, 2002; Barratt, Choi and Li, 2011; Yin, 2014).

Thus, this paper has used holistic (single unit of analysis) multiple-case design (Yin, 2014). The purpose was to elaborate, refine and extend theory (Voss *et al.*, 2016). The researchers obtained data for a deeper and grounded understanding of HR-enabled lean service across five case study organisations in the United Kingdom.

To collect the primary data, semi-structured interviews, direct observations and documental evidence were used (Eisenhardt and Graebner, 2007; Yin, 2014). A total of twenty-seven semi-structured interviews (plus four pilot interviews) were conducted with key actors across the five case study organisations. These organisations were:

- MyFinance provides investment products such as pension, life insurance, savings, mutual funds, asset management and banking. The number of interviews was 5 and the participants were Assistant Team Leader, Operations Manager, Head of Operational Services, Lead Lean Consultant and Managing Consultant.
- FineBank provides banking facilities, finance and insurance services and consumer and corporate banking. The number of interviews was 6 and the participants were Design and Transformation Lead, two Lean Leaders, Design and Delivery Agent, Lean Change Agent and Programme Support Manager.
- Hinance provides image-based cheque clearing services. The number of interviews was 4 and the participants were Fraud Team Leader, CUI Supervisor and Site Lean Agent, Fraud/EPU Supervisor and Site Manager.
- EastManage provides recycling and waste management services. The number of interviews was 4 and the participants were Head of Asset Management, Senior Operations Technician, Maintenance Manager and Plant Manager.
- HighEnd is a multi-temperature food distribution centre that services around 500 stores in the UK. The number of interviews was 8 and the participants were Distribution General Manager, Depot Operations Manager, CI Lead, Head of Communication and Services, Transport Shift Manager, Transformation Manager, Change Manager and Warehouse Dayshift Manager.

MyFinance, FineBank and Hinance were selected to understand HR-enabled lean service in the context of similar service activities i.e. financial services. The findings from these organisations were then compared with the findings from EastManage and HighEnd. This way, the analytical generalisation was improved and the overarching themes came from the synergy of themes of similar and different types of service activities (Gomm, Hammersley and Foster, 2000).

The interviews were supplemented by observations, secondary data and field notes. Multiple sources of secondary data such as organisational charts, photos of visual boards, reports, lean guides and articles of lean journey were collected to triangulate the interview data. The data was coded by means of NVivo 10 software package following the four stages of using NVivo to analyse qualitative data outlined by Bazeley and Jackson (2013). Thematic analysis was used to generate themes from the codes. The

approach followed the prescribed six stages of thematic analysis proposed by Braun and Clark (2006). To improve rigour in thematic analysis, Braun and Clark (2006, 2013) offer a 15-point checklist for 'good' thematic analysis. This checklist guided the researchers in terms of rigour from data analysis to reporting the overarching themes.

**Findings**

A common view amongst the interviewees was that lean service without proper utilisation of HRM practices jeopardise lean journey. For that reason, the interviewees overwhelmingly confirmed the vital role of utilising HRM practices to support lean practices. For instance, when Sue, a Design and Delivery Agent in the central lean team at FineBank, was asked on how she views the role of utilising HRM practices to support lean practices; she, emphatically, commented:

> God! Hugely, hugely! What we generally find when we are going to businesses [different departments at FineBank] who haven't had lean … is that they don't really understand what are the important things that there should be included in people management.

Another interviewee, who reflected on his personal experience of deploying lean practices in EastManage, suggested that '80%' of the time they spent on lean service was wasted with employees who did not buy-in to lean ways of service delivery:

> We've got the other guys, the sort of detractors, who say, you know, well, we've always doing it like this. It's always worked okay. Why do we need to change? And, I have to say that we've probably spent 80% of the time with minority of the people that don't buy-in to it. (Philip, Plant Manager, EastManage)

For that purpose, the case study organisations utilised several HRM practices to improve the buy-in of their employees to lean service. Utilising thematic analysis, analysis of the data resulted in the identification of 18 HRM practices: Recruitment and selection, Role profiling, Capacity planning, Absence management, Succession planning, Retention and release, Training and development, Career development, Performance management, Reward and recognition, Groups and teamwork, Employee voice, Employee communication and collaboration, Labour relations, Employee motivation, Employee involvement, Employee empowerment and Employee health and safety.

*Table 1: Lean maturity stages and the utilisation of proposed HRM practices*

| Lean maturity stage | | Beginner | In-Transition | | Advanced | Cutting-Edge |
|---|---|---|---|---|---|---|
| Case study organisations | | HighEnd | EastManage | Hinance | FineBank | MyFinance |
| HRM practices | Recruitment and selection | utilised | utilised | utilised | utilised | utilised |
| | Role profiling | realised | utilised | utilised | utilised | utilised |
| | Capacity planning | - | - | utilised | utilised | highly utilised |
| | Absence management | realised | - | - | - | utilised |
| | Retention and release | realised | utilised | utilised | utilised | utilised |
| | Succession planning | utilised | utilised | utilised | utilised | utilised |
| | Training and development | utilised | utilised | utilised | utilised | utilised |
| | Career development | realised | realised | utilised | highly utilised | highly utilised |
| | Performance management | utilised | utilised | utilised | utilised | utilised |
| | Reward and recognition | realised | realised | utilised | utilised | utilised |
| | Groups and teamwork | utilised | utilised | utilised | utilised | utilised |
| | Employee voice | utilised | utilised | utilised | utilised | utilised |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Employee communication and collaboration | utilised | utilised | utilised | utilised | utilised |
| | Labour relations | utilised | utilised | less utilised | utilised | less utilised |
| | Employee motivation | utilised | utilised | utilised | utilised | utilised |
| | Employee involvement | highly utilised | highly utilised | highly utilised | utilised | utilised |
| | Employee empowerment | realised | realised | realised | utilised | utilised |
| | Employee health and safety | utilised | utilised | utilised | utilised | utilised |

It is important, however, to bear in mind that the organisations were representing different stages of lean maturity (Netland and Ferdows, 2016). It was not expected for all to have been utilising the same HRM practices to support lean service. As Table 1 displays, majority of the proposed HRM practices were utilised by the organisations to support lean regardless of lean maturity stages.

There are, however, other practices, while they were utilised by the organisations in advanced stages of lean maturity, were realised to be utilised to support lean by the organisations at the early stages of lean maturity. Some other practices were highly utilised in Cutting-Edge and Advanced stages but not realised in Beginner or In-Transition stages. An interesting practice on the table is labour relations. It is less utilised by some of the organisations regardless of their lean maturity stage because they were less unionised.

The case study organisations used recruitment and selection to attract, shortlist, interview and select candidates who endorse their corporate lean programmes. Recruitment and selection enabled them to obtain required human resources to support their corporate lean programmes when such human resources were not available within the organisations. They also included lean-related elements in their job adverts to attract candidates with prior exposure of lean in similar or different business context. They assessed applications to shortlist candidates who had lean knowledge, skill-set and prior experience along with technical knowledge. They also asked lean-related questions in interviewing prospective candidates. These questions were mainly asked to elicit candidates' understanding of lean-related aspects and attitude towards change and lean service. Their selection decision was heavily impacted by the prospect that a candidate had strong technical knowledge, change attitude and lean desired behaviour coupled with their prior exposure to lean practices.

They used role profiling to create specific lean roles and bring clarity to their excising roles in terms of how much value their existing roles bring to their organisation and customers. They also tailored roles specifically to support lean service operations. Clarity around existing roles supported lean service in three ways: (i) it allowed the organisations to rationalise why a role should exist. (ii) And, thus, it necessitated for them to clarify their expectations of the exiting roles. (iii) it also enabled them to understand the tasks that an existing role holder does. This way, they balanced complex and simple tasks of a role.

They also utilised capacity planning to understand and plan the required human resources to meet customer demands and avoid overburdening employees to meet customer needs. To deliver value to customers and meet their needs efficiently and effectively and in a timely manner, line managers needed to understand how much human resource capacity they had within their teams and, mainly to know, if they were short of required capacity to meet customer needs. Further, they needed to understand

how they utilise surplus human resource capacity in their teams—because lean requires full utilisation of human resources.

The organisations utilised absence management to maintain a balanced workload for their employees. They tracked habitual pattern of employee absence as it did not only create unbalanced workload but also increased costs and overloaded available employees. Unplanned absence adversely impacted the organisations with their lean corporate programmes. It also created health issues for overloaded employees.

The organisations used succession planning to support their corporate lean programmes in two ways. Succession planning assisted them to sustain roles on 'lean teams'. They also utilised it to find successors for key lean roles such as team leaders, assistant team leaders and workplace coach.

The organisations utilised retention to retain their core employees on lean projects and release them from day to day responsibilities to work on lean projects. However, one must not understand 'release' purely as dismissing employees. It is true that lean might improve operational efficiencies. And, as a result, less number of staff members might be required to carry out the required work to meet customer demands. The case study organisations were cautious in portraying 'release' to mean dismissing employees. They were defining 'release' in the context of lean service as releasing employees from their day to day work to take extra work or work on lean projects in their area of work. As one interviewee clarified:

> … you could have the brillianest idea in the world but if you are not going to be released off your job … you're never gonna implement it. (Bill, Head of Communication and Services, HighEnd)

The organisations trained their employees and team leaders on lean-related knowledge to work on lean projects. They normally increased their budget of training and, thus, enrolled their employees in more training courses—lean-related training courses.

Employees who were enrolled in lean-related training courses were enabled to work as lean consultants, lean practitioners and lean experts in their organisation or elsewhere. These individuals were enabled to work an alternative career path to the one they started with in their organisation.

The organisations used performance management to ensure employees meet goals and targets of corporate lean programmes. Such activities increased the buy-in of employees to lean as the organisations injected lean-related key performance indicators to their performance management requirements.

The organisations used 'rewarding employees' to encourage repetition of a desired lean behaviour and outcome. Such activity came in the form of monetary and non-monetary rewards. Employees were also recognised for their continuous improvement ideas and their contribution to lean service.

Further, 'Employee voice' referred to the activities that provided employees with means to communicate their voice and concerns on lean with management and other employees. This also extended to mean that employees' voice and concerns of lean were taken into consideration in supporting lean practices. This understanding was confirmed when Tatiana (Fraud Team Leader, Hinance) stated:

> We, actually, had to help with some lean awareness sessions and air everybody's views, get anything out on the table to then go ahead with it [lean].

The organisations also organised employees into groups and teams to work on lean projects. This arrangement ensured that duplicate lean projects were not conducted in different functional departments. Further, it ensured that lean projects in a functional department did not adversely impact another department or employees within the department.

The organisations also used multiple communication channels to improve workplace communication. These channels were used to provide a fluid communication among employees on lean projects (and feedback on these projects). Utilisation of the workplace communication also increased collaboration among teams across the organisation on shared lean projects.

Furthermore, the organisations utilised labour relations to support lean. And so, they did not only involve their non-unionised employees in lean but also the unionised employees. However, it is necessary to acknowledge that not all the organisations had the same level of unionised employees.

Moreover, employee motivation was the force that energized, directed and sustained behaviour. Such force was vital to motivate employee discretionary behaviour in support of lean.

To direct employee discretionary behaviour to support lean, the organisations also utilised employee involvement and empowerment. Utilising this practice allowed the organisations to create a lean environment in which employees had an impact on improvement decisions and actions that affected their workplace.

Lastly, the organisations strived to ensure employees were safe when they conducted lean projects and stayed healthy and active in their workplace. They ensured that employees' well-being was looked after. Hence, health and safety and well-being was utilised to support their corporate lean programmes.

**Discussion**

Consistent with the literature, this research supports the work of the scholars who establish links between HRM practices and lean practices—whether in reviewing literature, such as Moyano-Fuentes and Sacristán-Díaz (2012), or proposing a conceptual model, such as de Koeijer, Paauwe and Huijsman (2014), or suggesting statistical significant relationship, such as Uhrin, Bruque-Cámara and Moyano-Fuentes (2017). This research advances them by providing real-world and contextual data.

Nevertheless, despite corroborating links of several HRM practices to lean, this study has been unable to demonstrate similar findings as some of the scholars on the relevance of reward and recognition, employee involvement and labour relations to lean service.

First, the current study suggests that service organisations utilise reward and recognition to manage and orient their employees to buy-in to lean ways of conducing their work. This understanding accords with the work of several previous scholars. For instance, the research of Netland, Schloetzer and Ferdows (2015) suggest that there is a positive link between nonfinancial rewards with extensive application of lean practices in an organisation (but they do not provide evidence for the same positive link between financial rewards and lean deployment). However, this finding is contrary to Martín and García (2010), Bonavia and Marin-Garcia (2011) and Marin-Garcia and Bonavia (2015). These scholars found reward and recognition to be irrelevant to lean practices.

This inconsistency may be due to differences in how reward and recognition is defined in this research and by these scholars. This discrepancy could also be attributed to two different contexts. This research collected the required primary data in service organisations in the UK. But these scholars collected their data in Spanish ceramics industries in Spain.

Second, the current study suggests that employee involvement is relevant to lean in service organisations. However, Vidal (2007) showed that because employees are dissatisfactory with lean, they are not involved in it. The reason for this is unclear but it may have something to do with the different research questions both studies have

attempted to answer. This research has attempted to answer how HRM practices are utilised by service organisations to support lean service. However, Vidal (2007) has attempted to compare employee satisfaction under lean and traditional Fordist manufacturing model. Therefore, the research questions have different perspectives: the one of this research is from organisation perspective—unitarist perspective—and the one that Vidal (2007) has attempted to answer is from employees' perspective—pluralist perspective (Ackers and Wilkinson, 2003).

Third, the findings also suggested that service organisations utilise labour relations to leverage unionised workers to support lean practices. They capitalise on labour relations to engage unionised employees in lean service. This does not appear to be the case for Godard (1998). He found that a minority of the respondents in his research reported that unionised employees are avoided than involved in lean by their organisation.

This inconsistency with Godard (1998) may reflect a two decade of time gap between when Godard (1998) collected data for his research and the current study. A possible explanation for this might be that this period of time has changed how organisations view unionized workers in a lean context.

Moreover, this study also was unable to demonstrate that job security is a relevant HRM practice to lean service. This finding differs from some published studies, for instance Bonavia and Marin-Garcia (2011). They have assumed that job security encourages employees to buy-in to lean.

There are, however, some possible explanations. A closer look at Bonavia and Marin-Garcia (2011) reveals why there might be such a difference. They found a statistical significant relationship between job security and lean by employing quantitative data from Spanish ceramics industries. In such a context, job security is expected of an employer (Lazear, 1990).

**Conclusion**

Employees of service organisations make or break lean. To engage them in lean practices, service organisations require a proper utilisation of enabling HRM practices. When such practices are not utilised, plans and actions that service organisations conduct to drive continuous improvement outcomes yield a limited application of lean tools and techniques. As an attempt to understand these enabling HRM practices, this study explored the relationship of HRM practices to lean in service organisations.

The findings demonstrate that HRM practices play an intermediary and enhancing role in any lean programmes. Thematic analysis allowed eighteen HRM practices to emerge as the relevant HRM practices to lean. Therefore, service organisations need proper utilisation of the proposed lean-specific HRM practices to support—and sustain—their corporate lean programmes.

These enabling HRM practices ensure that: (i) Service organisations have the required human resources to support lean. (ii) Their employees are trained for lean knowledge and skills. (iii) Employees' performance is aligned with lean targets. (iv) They reward employees for desired lean behaviour and outcomes. (v) Communication among employees is fluid to share information on lean projects. (vi) Their employees are empowered to use discretionary behaviour to engage in lean practices. (vii) Their employees are safe and healthy and their well-being is looked after.

The findings provide a grounded understanding of the HRM practices that enable employees to implement lean in the service sector. In doing so, the theoretical contribution is to elaborate, refine and extend the existing understanding of HR-enabled lean (de Koeijer, Paauwe and Huijsman, 2014; Sunder, Ganesh and Marathe, 2018). The practical contribution is to increase the awareness of service organisations of lean-

relevant HRM practices that they need to utilise to orient their employees to support lean (Holt, 2017).

## References


Abdi, F., Shavarini, S. K. and Seyed Hoseini, S. M. (2006) 'Glean lean: How to use lean approach in service industries?', *Journal Of Services Research*, 6, pp. 191–206.

Ackers, P. and Wilkinson, A. (eds) (2003) *Understanding Work and Employment: Industrial Relations in Transition*. Oxford, New York: Oxford University Press.

Ahlstrom, P. (2004) 'Lean service operations: translating lean production principles to service operations', *International Journal of Services Technology and Management*, 5(5–6), pp. 545–564.

Atkinson, P. (2010) 'Lean is a cultural issue', *Management Services*, 52(2), pp. 35–41.

Bamber, G. J. *et al.* (2014) 'Human Resource Management, Lean Processes and Outcomes for Employees: Towards a Research Agenda', *The International Journal of Human Resource Management*, 25(21), pp. 2881–2891. doi: 10.1080/09585192.2014.962563.

Barratt, M., Choi, T. Y. and Li, M. (2011) 'Qualitative case studies in operations management: Trends, research outcomes, and future research implications', *Journal of Operations Management*, 29(4), pp. 329–342. doi: 10.1016/j.jom.2010.06.002.

Bazeley, P. and Jackson, K. (2013) *Qualitative Data Analysis with NVivo*. SAGE Publications.

Bevilacqua, M., Ciarapica, F. E. and De Sanctis, I. (2016) 'Lean practices implementation and their relationships with operational responsiveness and company performance: an Italian study', *International Journal of Production Research*, pp. 1–26. doi: 10.1080/00207543.2016.1211346.

Bonavia, T. and Marin, J. A. (2006) 'An empirical study of lean production in the ceramic tile industry in Spain', *International Journal of Operations and Production Management*, 26(5), pp. 505–531. doi: 10.1108/01443570610659883.

Bonavia, T., Marin-Garcia, Juan A. and Marin-Garcia, J A (2011) 'Integrating human resource management into lean production and their impact on organizational performance', *International Journal of Manpower*, 32(8), pp. 923–938. doi: 10.1108/01437721111181679.

Bortolotti, T., Boscari, S. and Danese, P. (2015) 'Successful lean implementation: Organizational culture and soft lean practices', *International Journal of Production Economics*, 160, pp. 182–201. doi: 10.1016/j.ijpe.2014.10.013.

Bowen, D. and Youngdahl, W. (1998) '"Lean" service: in defense of a production-line approach', *International Journal of Service Industry Management*, 9(3), pp. 207–225. doi: 10.1108/09564239810223510.

Braun, V. and Clarke, V. (2006) 'Using thematic analysis in psychology', *Qualitative Research in Psychology*, 3(2), pp. 77–101. doi: 10.1191/1478088706qp063oa.

Braun, V. and Clarke, V. (2013) *Successful Qualitative Research: A Practical Guide for Beginners*. SAGE Publications.

Eisenhardt, K. M. and Graebner, M. E. (2007) 'Theory building from cases: Opportunities and challenges', *Academy of Management Journal*, 50(1), pp. 25–32. doi: 10.5465/amj.2007.24160888.

Godard, J. (1998) 'Workplace reforms, managerial objectives and managerial outcomes: The perceptions of Canadian IR/HRM managers', *The International Journal of Human Resource Management*, 9(1), pp. 18–40. doi: 10.1080/095851998341170.

Gollan, P. J., Kalfa, S. and Xu, Y. (2015) 'Strategic HRM and devolving HR to the line: Cochlear during the shift to lean manufacturing', *Asia Pacific Journal of Human Resources*, 53(2), pp. 144–162. doi: 10.1111/1744-7941.12055.

Gomm, R., Hammersley, M. and Foster, P. (2000) *Case Study Method: Key Issues, Key Texts*. SAGE Publications.

Hanna, J. (2007) 'Bringing 'lean'principles to service industries', *Harvard Business School Working Knowledge*.

Holt, P. (2017) *Leading with Lean: An Experience-Based Guide to Leading a Lean Transformation*. BOOM ELEVEN International. Available at: https://books.google.co.uk/books?id=7mepAQAACAAJ.

Holweg, M. (2007) 'The genealogy of lean production', *Journal of Operations Management*, 25(2), pp. 420–437. doi: 10.1016/j.jom.2006.04.001.

de Koeijer, R. J. J., Paauwe, J. and Huijsman, R. (2014) 'Toward a Conceptual Framework for Exploring Multilevel Relationships between Lean Management and Six Sigma, Enabling HRM, Strategic Climate and Outcomes in Healthcare', *The International Journal of Human Resource Management*, 25(21), pp. 2911–2925. doi: 10.1080/09585192.2014.953974.

Krafcik, J. F. (1988) ‘Triumph of the lean production system’, *MIT Sloan Management Review*, 30(1), pp. 41–52.
Lazear, E. P. (1990) ‘Job Security Provisions and Employment’, *The Quarterly Journal of Economics*, 105(3), pp. 699–726. doi: 10.2307/2937895.
Lindskog, P., Hemphälä, J. and Eriksson, A. (2017) ‘Lean tools promoting individual innovation in healthcare’, *Creativity and Innovation Management*, 26(2), pp. 175–188. doi: 10.1111/caim.12201.
Lorden, A. L. *et al.* (2014) ‘Measures of Success: The Role of Human Factors in Lean Implementation in Healthcare’, *Quality Management Journal*, 21(3), pp. 26–37.
Marin-Garcia, J. A. and Bonavia, T. (2015) ‘Relationship between employee involvement and lean manufacturing and its effect on performance in a rigid continuous process industry’, *International Journal of Production Research*, 53(11), pp. 3260–3275. doi: 10.1080/00207543.2014.975852.
Martín, T. B. and García, J. A. M. (2010) ‘Lean production, Human Resource Management, and their effects on organizational performance’, *Revista Europea de Direccion y Economia de la Empresa*, 19(4), pp. 117–134.
Moyano-Fuentes, J. and Sacrista´n-Dı´az, M. (2012) ‘Learning on lean: a review of thinking and research’, *International Journal of Operations & Production Management*, 32(5), pp. 551–582. doi: 10.1108/01443571211226498.
Netland, T. H. and Ferdows, K. (2016) ‘The S-Curve Effect of Lean Implementation’, *Production and Operations Management*, 25(6), pp. 1106–1120. doi: 10.1111/poms.12539.
Netland, T. H., Schloetzer, J. D. and Ferdows, K. (2015) ‘Implementing corporate lean programs: The effect of management control practices’, *Journal of Operations Management*, 36, pp. 90–102. doi: 10.1016/j.jom.2015.03.005.
Ohno, T. (1988) *Toyota Production System: Beyond Large-scale Production*. 1st edn. United States: Productivity, Inc.
Piercy, N. and Rich, N. (2009) ‘Lean transformation in the pure service environment: the case of the call service centre’, *International Journal of Operations & Production Management*, 29(1), pp. 54–76. doi: 10.1108/01443570910925361.
Radnor, Z. and Osborne, S. P. (2013) ‘Lean: a failed theory for public services?’, *Public Management Review*, 15(2), pp. 265–287. doi: 10.1080/14719037.2012.748820.
Shah, R., Chandrasekaran, A. and Linderman, K. (2008) ‘In Pursuit of Implementation Patterns: The Context of Lean and Six Sigma’, *International Journal of Production Research*, 46(23), pp. 6679–6699. doi: 10.1080/00207540802230504.
Sparrow, P., Hird, M. and Cooper, C. (2014) ‘Lean management and organizational effectiveness’, in *Do we need HR? Repositioning people management for success*. United Kingdom: Palgrave Macmillan, pp. 86–110.
Suárez-Barraza, M. F., Smith, T. and Dahlgaard-Park, S. M. (2012) ‘Lean Service: A literature analysis and classification’, *Total Quality Management & Business Excellence*, 23(3–4), pp. 359–380. doi: 10.1080/14783363.2011.637777.
Sunder, V., Ganesh, L. S. and Marathe, R. R. (2018) ‘A morphological analysis of research literature on Lean Six Sigma for services’, *International Journal of Operations & Production Management*, 38(1), pp. 149–182. doi: 10.1108/IJOPM-05-2016-0273.
Uhrin, Á., Bruque-Cámara, S. and Moyano-Fuentes, J. (2017) ‘Lean production, workforce development and operational performance’, *Management Decision*, 55(1), pp. 103–118. doi: 10.1108/MD-05-2016-0281.
Vidal, M. (2007) ‘Lean Production, Worker Empowerment, and Job Satisfaction: A Qualitative Analysis and Critique’, *Critical Sociology*, 33(1–2), pp. 247–278. doi: 10.1163/156916307X168656.
Voss, C. *et al.* (2016) ‘Reflections on context in service research’, *Journal of Service Management*. Edited by P. Anders Gustafsson and Professor Rod, 27(1), pp. 30–36. doi: 10.1108/JOSM-04-2015-0115.
Voss, C., Tsikriktsis, N. and Frohlich, M. (2002) ‘Case research in operations management’, *International Journal of Operations & Production Management*, 22(2), pp. 195–219. doi: 10.1108/01443570210414329.
Wickramasinghe, V. and Wickramasinghe, G. L. D. (2017) ‘Effects of HRM practices, lean production practices and lean duration on performance’, *The International Journal of Human Resource Management*, 0(0), pp. 1–46. doi: 10.1080/09585192.2017.1407954.
Womack, J. P., Jones, D. T. and Roos, D. (1990) *The Machine that Changed the World*. New York: Rawson Associates.
Yin, R. K. (2014) *Case Study Research: Design and Methods*. SAGE Publications.