

AN ANALYSIS OF RECENT REFORMS OF POLICE MANAGEMENT IN ENGLAND AND WALES

Andrew Harry Barton

This work is submitted in partial fulfilment of the requirements of the
Nottingham Trent University for the degree of Doctor of Philosophy on
the basis of published work.

January 2014

This is the intellectual property of the author. You may copy up to 5% of this work for private study, or personal, non-commercial research. Any re-use of the information contained within this document should be fully referenced, quoting the author, title, university, degree level and pagination. Queries or requests for any other use, or if a more substantial copy is required, should be directed in the owner(s) of the intellectual Property Rights.

Abstract

Since the late 1970s successive UK governments, have attempted to implement reforms across the English and Welsh police services. Poor management practice, scandals and reductions in budgets have directed observers to call for a more business-like approach, focusing upon operational as well as organisational reform.

Paradoxically although public attitudes towards the police are generally positive it is evident that the social context of policing is changing. The police in England and Wales face the problem of reducing costs while at the same time satisfying the demands and expectations of a society which has become far more divisive and fragmented.

The challenge for the police therefore is to introduce innovative ways of improving efficiency and productivity, whilst at the same time improving public opinion as to their effectiveness in their 'fight against crime.' This will require significant reform, which will have a major impact on police organisations in England and Wales, calling into question their values and future role.

This thesis describes influential elements of the reform process through a meta-analysis (an objective and quantitative methodology for synthesizing previous studies and research on a particular topic into an overall finding), comprising eight papers. These are put forward to provide the platform for understanding the apparent difficulty in reforming the police in England and Wales.

To provide a framework for discussion three key themes are identified – 'Environment', 'Occupational Culture' and 'Lean,' that may contribute to future strategic consideration

within the police. Through this lens it is clear that they are not mutually exclusive but overlap as the police reform agenda has evolved over time.

The first theme therefore takes an ‘environmental’ perspective and locating discussions within the backdrop of the 2008 global financial crisis, I have highlighted how the UK coalition government’s Comprehensive Spending Review (CSR, 2010) demanded a major review of the strategic and operational functions of the police service. As a result significant budgetary cuts have been made across the police service in England and Wales resulting in significant structural changes and reform of many operational processes.

The second theme identifies that radical reforms across the police service have been long overdue and it has been the ability of the police, to a large extent through the strength of their ‘occupational culture’ to resist reform that has often led to a situation of spiralling costs but little evidence of successful implementation of improvement frameworks.

Of the improvement frameworks available, the ‘lean’ perspective is often favoured due to its emphasis on easily understood tools and techniques that can be quickly and relatively cheaply acquired. This area of ‘lean’ constitutes the third theme within this thesis and draws upon research within the established domain of lean manufacturing.

The key themes are therefore orientated to reflect on research that I have been conducting over the past ten years and the eight journal articles published in support of this research. As such they make their own contribution to the existing conceptual and empirical literature relating to the police.

Beyond this I also provide some context to the underlying difficulties in implementing police reform and from my research findings I highlight four areas for consideration. First, the importance of human resource management (HRM) practices in developing the workforce and creating an environment for change. Second, all papers share an interest in improving performance. Third, the adoption of continuous improvement and a lean thinking approach. Fourth and finally, the financial impact of the UK government's Comprehensive Spending Review (CSR, 2010) and changes to the governance structures of the police with the election of Police and Crime Commissioners in 2012 have the potential to provide a significant impact on the reform of the police in England and Wales.

Acknowledgements

I have been very fortunate to enjoy and benefit from the continuing opportunity to research and converse with a diverse, talented and inspired group of colleagues, over the years, and thanks go to them for their patience and critical insights into much of the research papers contained in this thesis.

Special thanks are due to my co-researchers and colleagues, notably Professor Rick Delbridge of Cardiff Business School, Cardiff University; Professor Malcolm Beynon of Cardiff Business School, Cardiff University; Dr Lisa Thomas of Salford Business School, Salford University and Dr Nestor Valero-Silva of Nottingham Business School, Nottingham Trent University.

This thesis benefited immeasurably from the positive and insightful comments from my supervisor Professor David Smith, to whom I owe a special and sincere acknowledgement and debt of gratitude. I would also like to gratefully acknowledge the encouragement and unwavering support of Professor Carole Tansley.

Table of Contents

Abstract	1
Acknowledgements.....	4
Table of Contents	5
Figures.....	6
List of published works submitted with appropriate summaries.	7
1.0 An Analysis of Recent Reforms of Police Management in England and Wales	12
1.1 Introduction.....	12
1.2 The thesis	13
1.3 The author's orientation to the topic	15
1.4 Technical requirements for the submission of the thesis	16
2.0 Providing a thematic framework for police reform	18
2.1 Theme 1 – Environment.....	18
2.1.1 Manufacturing sector.....	18
2.1.2 Police.....	20
2.2 Theme 2 - Occupational Culture.....	23
2.2.1 Police.....	24
2.2.2 Shopfloor workers	25
2.2.3 Contrasting the two occupational cultures	27
2.3. Theme 3 – Lean	27
3.0 Advancing the police reform agenda	Error! Bookmark not defined.
3.1 Developing the police workforce.....	33
3.2 Improving Police Performance	36
3.3 The adoption of a Lean thinking approach within the police	40
3.4 Finance and Governance.....	41
4.0 Conclusion	43
References.....	43

Figures

Figure 1: Key themes from published works (2003-2013) and their chronological relationship with the Government reform agenda in the Police service in England and Wales.....12

Figure 2: The diversity of approaches to Lean within the police and criminal justice service.....30

List of published works submitted with appropriate summaries.

Paper 1

Barton, H. (2003) Understanding occupational (sub) culture – a precursor for reform: The case of the police service in England and Wales'. *International Journal of Public Sector Management. Vol.6.5.pp. 346-358.*

Barton highlights the slow moving reform agenda for the police service in England and Wales, with successive governments both Labour and Conservative having attempted to implement reform over the previous two decades. This paper highlights Labour government legislation which is intended to reform how the police are managed, financed and judged against specific performance targets. Barton identifies police occupational (sub) culture in the form of discretion, solidarity and autonomy as having the capacity to resist or slow this reform process.

Paper 2

Barton, H. and Delbridge, R. (2004) HRM in support of the learning factory: evidence from the US and UK automotive components industries. *International Journal of Human Resource Management. Vol.15:2. pp. 331-345.*

Within this paper Barton and Delbridge investigate Human Resource Management (HRM) practices in eighteen automotive component plants in the UK and US. Their empirical contribution is made through providing qualitative and quantitative data from a matched sample of

plants thereby allowing a detailed comparative analysis. They provide an empirical contribution through bringing HRM and operations management together to consider people and organizational issues in manufacturing.

Paper 3

Barton, H and Delbridge, R. (2006) Delivering the “learning factory”? Evidence on HR roles in contemporary manufacturing. *Journal of European Industrial Training. Vol. 30:5. pp. 385-395.*

This paper was developed as a consequence of the same research project from which **Paper 2** emerged. In this case it evidences the emergence of new forms of work organisation which are seen as consistent with the concept of the ‘learning factory’. It draws upon data from over 130 interviews with those workers engaged in team based operations and reflects upon the emerging role of first-line and team-based supervisors. The paper contributes to the growing evidence of the devolvement of traditional ‘managerial’ responsibilities to lower levels within increasingly ‘lean’ manufacturing organisations.

Paper 4

Barton, L. and Barton, H. (2011) Challenges, issues and change: what’s the future for UK policing in the 21st Century. *International Journal of Public Sector Management Vol.24:2,pp.146-156.*

This paper analyses the dual challenge for the police of responding to the demands of the government and public for improvements in police efficiency and effectiveness in the context of reduced police budget. The paper highlights tangible areas of policing activity that could benefit from the implementation of new techniques such as the 'Lean' principles of management as a means of focusing on more cost effective ways of utilising future police resources. It also identifies the impact that the election of Police and Crime Commissioners (PCCs) will have on the nature of policing in England and Wales. The contribution it makes is to draw together and contextualise specific areas of police practice that could benefit from new ways of working and posit improvements in efficiency for the future through the impact of PCCs.

Paper 5

Barton, H. and Beynon, M. (2011) Targeted criteria performance improvement: An investigation of a "most similar" UK police force. *International Journal of Public Sector Management* 2011.Vol.24:4.pp. 356-367.

(Best paper award: British Academy of Management (BAM) Public Management Track, 2010).

In this paper secondary data (British Crime Survey) and the PROMOTHEE ranking techniques are used to illustrate performance rank improvement of a police force amongst their Most Similar Force (MSF) group. This demonstrates that innovative modelling has the potential to add value to techniques that are currently used in the area of police performance improvement, in this case sanction detection levels. The paper uses a modern ranking technique previously unused in this area.

Paper 6

Barton, H. and Beynon, M. (2012) Policing for the People: A cluster based investigation of the relationship between police force operational performance and public opinion. *International Journal of Emergency Services. Vol.1:1.pp. 29-38.*

(Best paper award UK Public Administration Committee Conference (PAC) 2011).

Barton and Beynon use secondary data (British Crime Survey) and the fuzzy c-means clustering technique to exposit clusters of police forces based on sanction detection levels, relating them in the statistical analysis with public opinion on the police. The results demonstrate the connection between the police's attempt to fight crime and improve public opinion. With the public opinion measures considered post the establishing of police force clusters, the results show the public does notice the level of sanction detections achieved. This demonstrates that there is a significant link in the relationship between the levels of sanction detection within police forces and public opinion about their ability to fight crime.

Paper 7

Barton, H. and Valero-Silva, N. (2013) Policing in partnership: a case study in crime prevention. *International Journal of Public Sector Management. Vol.26:7. pp. 543-553.*

Set against a backdrop of major police reform in England and Wales this paper outlines an exploratory study of police multi-agency working. This partnership approach to crime prevention

is identified as an opportunity for the police to more effectively target resources both, to reduce local levels of criminality and to improve public confidence. Analysis of the case study adds tangible evidence to theoretical discourses on the benefits of multi-agency work in the context of police reform and ongoing reductions in local police budgets.

Paper 8

Barton, H. (2013) 'Lean' policing? New approaches to business process improvement across the UK police service. *Public Money and Management*. Vol.3:3. pp. 221-224.

The reduction in police budgets as a consequence of the coalition government's 2010 Comprehensive Spending Review (CSR), changing governance structures as a result of the election of Police and Crime Commissioners (PCCs) in November 2012, and ongoing reforms of the police in England and Wales provides the backdrop for this paper. Within it an analysis is made of the likely impact that the introduction of 'Lean Thinking' could have on improving police performance. This is seen as one of the central aims of the UK coalition government along with improving the level of confidence and trust of the police service in England and Wales.

1.0 An Analysis of Recent Reforms of Police Management in England and Wales

1.1 Introduction

Since the late 1970s, successive United Kingdom (UK) governments have placed significant emphasis on improving the operational effectiveness, efficiency and cost of delivery of UK public services (HM Treasury and Cabinet Office, 2004; HM Treasury, 2006; Home Office, 2008; Home Office, 2010.) (**Papers 4, 5, 6 and 8**). Specifically, the more audit centred approach to public administration, often referred to as 'new public management' (NPM) (**Papers 4 and 5**), has led to public service reform initiatives that have focused on performance improvement (Neely *et al*, 1995; Fryer *et al*, 2009) and providing better value for money (Pollitt & Bouckaert, 2000; Boyne *et al*, 2004) (**Paper 5**). Such reforms have been debated, within the 43 police forces that constitute the police service for England and Wales and in some cases implemented (through the sharing of procurement and ancillary back office functions between local constabularies; change in police officer pension regulations to reduce the future cost to the police budget; process improvements in terms of crime reporting) (Barton, 2003 p. 348) (**Paper 1**). Yet the application of NPM principles has not realised the key performance improvements that might have been anticipated (HM Treasury and Cabinet Office, 2004; Barton & Barton, 2011 (**Paper 4**); Barton, 2013 (**Paper 8**)). As a consequence of this slowness to change, the police service has increasingly become the focus of scrutiny (Flanagan, 2008; Home Office, 2010; Barton & Barton, 2011 (**Paper 4**); The Lord Stevens, 2013).

Despite the slow pace of reform over the past forty years there remains a clear expectation from the current UK coalition government for the police to rise to the challenge of improving their performance across a broad cross-section of activities (**Papers 4, 5, 6 and**

8). If fully implemented this is likely to have a fundamental impact on the nature of policing in England and Wales (Barton & Barton, 2011). (**Paper 4**).

1.2 The thesis

This thesis provides a meta-analysis (An objective and quantitative methodology for synthesizing previous studies and research on a particular topic into an overall finding) comprising eight papers put forward to provide the platform for understanding the apparent difficulty in reforming the police in England and Wales. To provide a framework for analysis three key themes are identified that may contribute to future strategic consideration within the police. Through this lens it is clear that they are not mutually exclusive but overlap as the police reform agenda has evolved over time (**See Figure 1 below**).

The first theme, '**Environment**', simply refers to, 'the setting or conditions in which a particular activity is carried out' (Oxford Dictionary, 2011). In my contributing papers I have recognised that the social context of policing is changing (Barton, 2003) (**Paper 1**) with police facing the problem of satisfying the demands and expectations of a society, which has become more divisive and fragmented. At the same time police are struggling to maintain the trust and confidence (Barton & Beynon, 2012) (**Paper 6**) of traditional police supporters in the light of miscarriages of justice and allegations of corruption. This is set against a legislative agenda that has incrementally increased the ways in which the police are managed, financed and judged against specific performance targets (Barton, 2003 p.346) (**Paper 1**); Barton & Barton (2011) (**Paper 4**).

The second theme, '**Occupational culture**', describes the shared values, beliefs and norms associated with a particular occupation or type of work (Oxford Dictionary, 2011) such as that of a police officer or shop floor worker. An occupational culture exists independently of the particular organisation where the employee works. Within this thesis police occupational culture is highlighted as one of the most significant impediments to change in policing organisations (Barton, 2003 p. 347) (**Paper 1**); (Barton, 2011) (**Paper 4**).

The third and final theme '**Lean**', has no standard definition (Shah & Ward, 2007). To some researchers, lean means the application of various lean tools or techniques including 5S, visual management, value stream mapping (VSM) and Kanban system (Achanga et al, 2006; Koh et al., 2007). Within this thesis however I take the view supported by other researchers (Hines et al., 2004, 2011; Rich et al. 2006) that Lean is more of a management philosophy, that utilises certain tools and techniques. It is a broader definition that embeds a culture of continuous improvement and focuses on adding value. (Barton, 2013) (**Paper 8**).

The key themes are therefore orientated to reflect on research that I have been conducting over the past ten years and the eight journal articles published in support of this research (**produced at the front of this thesis as a list of research publications**). As such they make their own contribution to the existing conceptual and empirical literature relating to the police. Beyond this however the contribution that this cumulative literature provides, is to provide some context to the underlying difficulties in implementing police reform. I choose to do this through looking at four key characteristics that are evident within the majority of my published papers.

First, the importance of human resource management (HRM) practices in developing the workforce and creating an environment for change. (**Papers 1, 2, 3 and 4**). Second, all papers share an interest in improving performance (**Papers 1-8**). Third, the adoption of continuous improvement and a Lean thinking approach. With its roots in manufacturing the current application within the police is seen to have the potential of advancing the police reform agenda (**Papers 2, 3, 4 and 8**). Fourth and finally, an analysis is made of 40 years of government sponsored reports and legislation designed to encourage and facilitate police reform (**Papers 1, 4-8**), which have at their core a focus on finance and a revision of governance structures. Specifically the Comprehensive Spending Review (2010) and election of Police and Crime Commissioners in November 2012 are highlighted as having a significant impact on the police reform agenda (**Papers 4 and 8**). Added together they identify a significant shift in strategic responsibility and focus in terms of the future organisational development of the police service in England and Wales.

1.3 The author's orientation to the topic

From the outset my interest in this topic stems from experiences gained during a thirteen year career within the Metropolitan Police (Met) (1983-1996). This career included: participation in public order policing events (miners' strike, 1984; Wapping newspaper dispute, 1986; Broadwater Farm riots, 1990), three years as a neighbourhood support officer (1985-1988) and, upon promotion, three years as a police sergeant based in the East End of London (1988-1991). The final five years within the Met were spent in various personnel and policy roles working predominately at New Scotland Yard under the command of the Assistant Commissioner Territorial Operations (ACTO).

Upon retirement in 1996 I joined the UK government's internal auditing agency, the Audit Commission as a Value for Money (VFM) auditor and undertook both local and national audits that examined the effectiveness and efficiency of public sector organisations in England and Wales. More specifically I was involved in the development and monitoring of police performance through the analysis of performance measures developed internally within the Audit Commission and used to benchmark individual police forces. The strengths and weaknesses of such performance measures and the identification of more novel mathematical approaches to monitoring police activities are discussed within the third theme of this thesis. This area of research enquiry has continued, following my career move from the Audit Commission into academia.

1.4 Technical requirements for the submission of the thesis

In order to be submitted for a PhD by published works there are three basic requirements for this thesis:

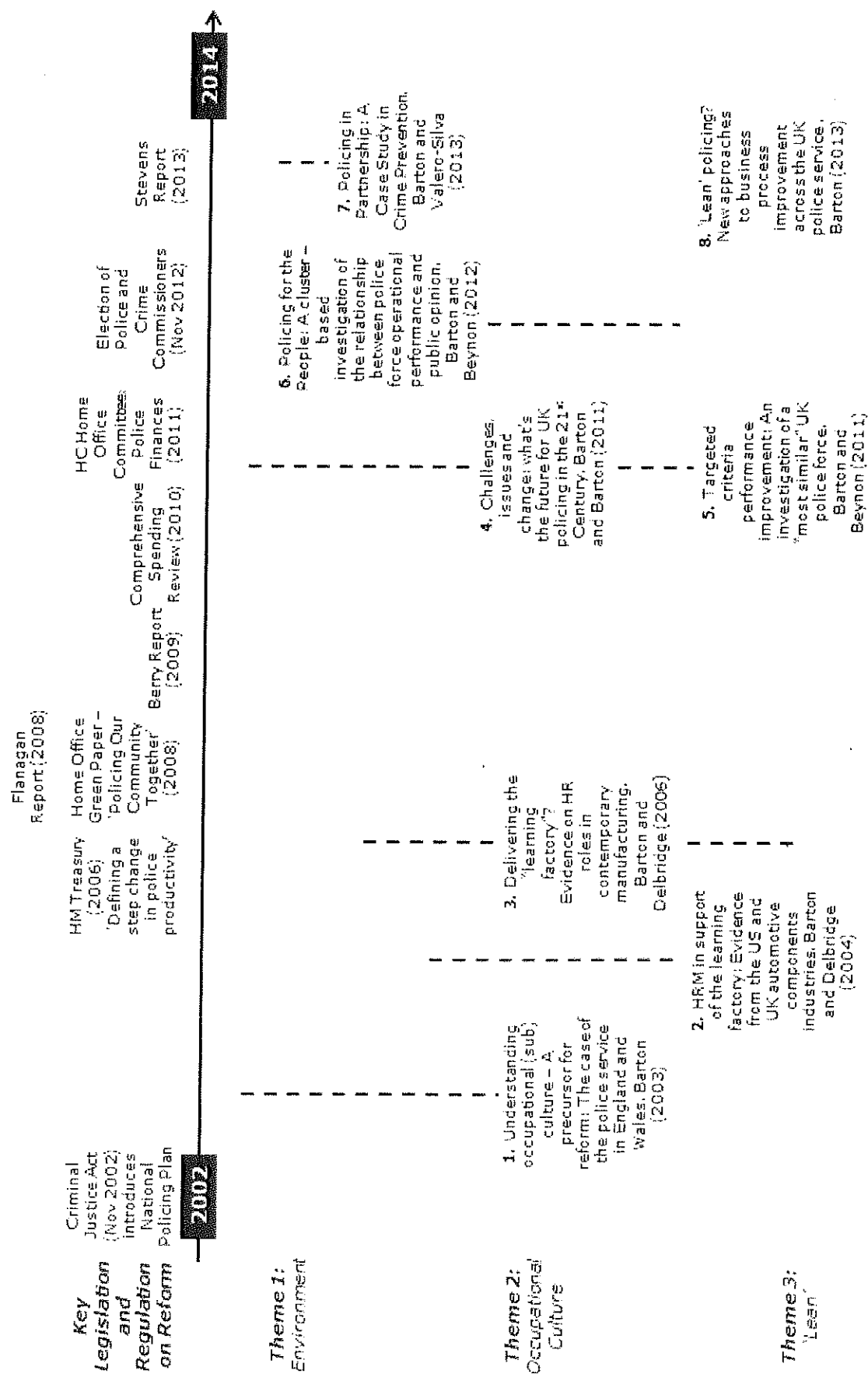
There needs to be an **analysis** of the publications being submitted;

There is a need to demonstrate the **significance and contribution** that these publications make to the current understanding of the subject;

The relationship of the publications needs to be evidenced within a **coherent body of work**.

The structure of this thesis will therefore reflect that of point 3. And points 1 and 2 will be described within the following body of work, although these will be discussed in the context of three key themes (Environment, Occupational Culture and Lean).

Figure 1: Key themes from published works (2003-2013) and their chronological relationship with the Government reform agenda in the Police service in England and Wales



2.0 Providing a thematic framework for police reform

The three themes of Environment, Occupational Culture and Lean (**See Figure 1**) are used to frame the eight publications (**produced at the front of this thesis as a list of research publications**) that I draw upon throughout this thesis to seek to understand and identify the reasons for the slowness of police reform across the police service of England and Wales. From the outset the papers clearly overlap thematically and the chronological development of the papers mirrors both policy and practice developments that continues to influence the police reform agenda within England and Wales.

2.1 Theme 1 – Environment

The Oxford Dictionary, 2011, defines the term ‘environment’ as the ‘The setting or conditions in which a particular activity is carried out,’ by implication therefore environments can change. In considering this theme my research conducted over a period of ten years (**Papers 1-8**) compares and contrasts the response to environmental change within the automotive manufacturing sector and the police.

2.1.1 Manufacturing sector

During a two year study (1999-2000) I conducted research within eighteen manufacturing plants of first tier, automotive component suppliers (Barton & Delbridge, 2004 p.331) (**Paper 2**) in the UK and US. A key finding from this research identified manufacturers’ speed of reaction to changes in the external environment (Barton & Delbridge, 2006) (**Paper 3**) as being an

essential element in maintaining their competitiveness. During interviews within the plants, ‘managers suggested that the constant change within a learning factory environment presented opportunities to raise levels of awareness and commitment to the objectives of the organization, particularly when explaining why changes were necessary and what role employees could play to ensure a successful outcome’ (Barton & Delbridge, 2004 p.342) **(Paper 2)**. Such research findings confirm earlier studies (Huselid, 1995) identifying the emergence of management practices (Barton & Delbridge, 2004 p.343) **(Paper 2)** that encourage employee involvement in which continuous improvement is seen as central in sustaining the organisation’s competitive advantage (Barton & Delbridge, 2006 p.390) **(Paper 3)**. Barton & Barton, 2011 p.152 **(Paper 4)** highlight from their research on the police that, ‘it is important that first line managers within the police understand how to develop a feeling of empowerment amongst their subordinates. Prior to the implementation of any specific empowerment intervention police ‘managers’ have to encourage their subordinates to feel that they have the power over significant aspects of their work, and identify how they may be able to develop a sense of ownership in their work and in their force.’

This awareness amongst managers of the need to engage more closely with shopfloor and front line workers (Barton & Delbridge, 2006 p. 386) **(Paper 3)** and within the police (Barton & Barton, 2011) **(Paper 4)** as a means of encouraging greater participation throughout the organisation would be consistent with the notion of the ‘learning factory’ where an emphasis is placed on more innovative and adaptive workplace practices. Given the

harsh economic environment imposed by the 2008 global financial crisis this philosophy would appear to have helped the automotive sector in the UK to survive the challenges of the recession (Jaguar Land Rover (JLR), Nissan and Toyota all report healthy increases in production and sales) and the US (Ford, Toyota). Indicating successful reform programmes in terms of strategic orientation of the firms and operational performance of workers, following the 2008 global financial crisis.

2.1.2 Police

Barton & Barton, 2011 p. 153) (**Paper 4**) following extensive research on the origins of police reform identify that ‘successive governments have ‘wrestled’ with the police to bring about reform and yet stubbornly change is slow.’ Barton, 2004 p. 342 (**Paper 1**), traces the origin of this reform agenda back to the early 1980s although Barton & Barton, p.146 (**Paper 4**) identify that ‘Since the 1970s, successive UK governments have placed significant emphasis on improving the operational effectiveness, efficiency and cost of UK public services,’ This aspiration has been the driver for much of the primary legislation and focus of government sponsored reports on police reform. In his analysis however Barton, 2003 p. 355 (**Paper 1**) identifies that ‘they (police) have still successfully resisted widespread reform. This is all the more surprising given the social context of policing is changing (Barton, 2003) (**Paper 1**) with police facing the problem of satisfying the demands and expectations of a society, which has become more divisive and fragmented. At the same time (Barton & Beynon, 2012) (**Paper 6**) identify in their research that the police are struggling to maintain

the trust and confidence of traditional police supporters in the light of miscarriages of justice and allegations of corruption. Given this current environment Barton, 2013 p. 222 (**Paper 8**) identifies that the police need to 'increase levels of public satisfaction through the delivery of improvements in policing services'. This relationship between improving police performance as a means of generating increasing levels of citizen satisfaction, confidence and trust in the police service has been one of the central planks of the coalition government's agenda on law and order. This however will have to be achieved within a climate of financial austerity following the UK Government's 2010, Comprehensive Spending Review (CSR).

Barton & Beynon, 2012 p.30 (**Paper 6**) contribute to this debate by recognising that the impact of the CSR will require a fundamental reform of the way that policing services are managed and operated. The police therefore face a major challenge to meet the dual demands of a reducing budget (The CSR demanded cuts of £545 million across the police service in England and Wales by 2014) and increasing levels of public satisfaction (Barton, 2013 p.223) (**Paper 8**) through the delivery of improvements in policing services (Barton & Beynon, 2012) (**Paper7**). This has been an important element in the UK coalition governments' strategy on law and order as identified within the, Police Reform and Social Responsibility Act, 2011. This Act abolished police authorities which were replaced in November, 2012 by directly elected Police and Crime Commissioners (PCCs). The intention of this reform in the police governance structure is for the PCCs to maintain and improve local police performance through

strategic oversight of their forces. To enhance local accountability of police through clearer strategic overview of policing plans, budgets and to appoint and be responsible for monitoring the performance of the Chief Constable (Barton, 2013 p. 224) (**Paper 8**). Barton, 2013 (**paper 8**) identifies the appointment of PCCs as pivotal in realising government's long held aspiration for significant police reform.

Notwithstanding such changes in the governance structures of the police in England and Wales, Barton, 2004 p. 357 (**Paper 1**) identified from his police research ten years ago, that, unless efforts are made to engage individual police officers, particularly the lower ranks, in the process of police reform, it is unlikely that any meaningful and long lasting change will occur. This engagement with and emphasis placed on teamwork and devolution of increased responsibilities to the 'shopfloor' is one of the key research findings (Barton & Delbridge, 2006 p.394) (**Paper 3**) from the studies in both UK and US automotive component industries. This is also one of the key reasons underlying the manufacturing plant's abilities to quickly change in the face of a rapidly changing external environment. This is currently quite clearly not the case within the police service of England and Wales.

In summary my research over the last ten years (Barton, 2003; Barton & Barton, 2011; Barton, 2013) (**Papers 1, 4 and 9**) points to a failure of successive attempts at police reform which would appear to result from a combination of factors. These include a succession of poorly conceived legislative and policy initiatives that have resulted in cynicism among rank

and file officers; the strength of feeling within the police service for the maintenance of 'constabulary independence'; failure to understand the strength of police occupational culture, with police officers suspicious of the purpose of reform (Barton, 2003) (**Paper 1**).

However Barton, 2013 p.223 (**Paper 8**) in a commentary on assessing the state of current day police reform identifies both, the impact of the UK Government's, 2010 Comprehensive Spending Review (CSR) and the election of Police and Crime Commissioners (PCCs) as having a significant impact on accelerating the police reform process.

2.2 Theme 2 - Occupational Culture

The term 'occupational culture' is defined in the Oxford Dictionary, 2011, as: 'the shared values, beliefs and norms associated with a particular occupation or type of work such as that of a police officer or shop floor worker. An occupational culture exists independently of the particular organisation where the employee works.'

Given this definition Barton (2003) (**Paper 1**) analysed in depth the nature of police occupational culture and the particular elements of this culture that have enabled the police in England and Wales to slow the reform of operational and human resource practices. This is contrasted with the more dynamic working environments observed within automotive manufacturing plants in the UK and US (Barton & Delbridge, 2004) (**Paper 2**), where the occupational culture is one focused on embracing change. The purpose of this comparison is to identify whether there are characteristics of the

occupational culture observed within manufacturing settings that might be used to accelerate the reform agenda within the police.

2.2.1 Police

2.2.1.1 For the police service in England and Wales, (Barton, 2003 p.346) (**Paper 1**) noted that, 'Going back to 1829, the service is steeped in tradition, and as a consequence instituting any meaningful and lasting organisational and cultural reforms are certain to be a major challenge.' This long history coupled with the uniqueness of the role that police have traditionally occupied in society has been referred to by a number of authors as creating a 'closed occupational world' (Bittner, 1967.; Reiner, 1992, Skolnick, 1994; Crank, 1998). Within this world, 'their power as an occupational group lies both within their informal independence as individual officers out on the street and the solidarity ascribed to an occupation dependent on mutual support and trust. Police officers exist within a particular social subsystem where they learn from one another's work habits, strengths, weaknesses and preferences. Loyalty and solidarity provide the cultural foundations for the social identity of the police as they interact with other social groups (Crank, 1998); (Barton, 2004 p. 350) (**Paper 1**).

The strength of this occupational culture has been described by Savage (1991, p. 440) as the 'Berlin wall of policing.', a culture that is difficult to dismantle, and is why I have identified that without taking organisational culture into account, many attempts at reform will become frustrated (Barton, 2003, p. 350) (**Paper 1**). The particular aspects of police occupational culture

that I have described as having an impact on the success of any reform agenda are: First, police discretion (Barton, 2003 p. 231) (legislation may be in acted however police interpretation of how it may be administered can have a negative impact on the success of its implementation i.e. stop and search powers) (**Paper 1**). Second, solidarity (Barton, 2003 p.353) (the ability of the Police Federation to mobilise its members to protest against government reform proposals has been demonstrated on many occasions) (**Paper 1**). Third and finally, autonomy; I have argued that the most powerful influence on the public's perception of the police is at the micro level, namely that of the uniformed police officer on the street. The success of any reform initiatives has to be judged on the opinion of the end users of policing services, namely the public, which to a large extent is determined by the attitude and behaviour of individual officers to meeting their expectations (Barton, 2003, p. 355) (**Paper 1**); (Barton & Beynon, 2012) (**Paper 6**).

2.2.2 Shopfloor workers

The closed occupational world of the police can be contrasted with the dynamic environment in which shop floor workers operate within the automotive manufacturing sector where: 'organisations exist within a state of flux and potentially shift from one organisational form to another.' (Barton & Delbridge, 2004 p. 334) (**Paper 2**).

These observations were formed by the author following a study (**Papers 2 and 3**) of US and UK automotive component suppliers. The study included plants manufacturing disc brake calipers, exhaust systems and seats (Project

funded by the UK Government's Engineering and Physical Sciences Research Council, grant GR/L93591). In total, eighteen plants were included in the study, split equally between the US and UK. The bulk of the research was conducted during 1999 and 2000. Each plant was visited on two separate occasions. The information gathered included questionnaire data detailing management practices and analysing particular plant level performance measures. Interviews were also conducted with workers, team leaders and managers, including HR managers, and from observations of team and problem solving meetings. In total the project involved over 130 face-to-face, semi structured interviews. (Barton & Delbridge, 2004 p. 387) (**Paper 2 and 3**).

In describing the occupational culture, exhibited amongst workers in the plants it is clear that a strong team orientation is driven by a necessity to be competitive across the two dimensions of quality and productivity. Within such work environments, change is an accepted part of working life with innovation and adaptation being seen as central to organisational survival. This attitude was seen in turn to have an important influence on overall firm performance (Barton & Delbridge, 2004 (**Paper 2**); Barton & Delbridge, 2006) (**Paper 3**). Our research (Barton & Delbridge 2004; 2006 **Papers 2 and 3**) findings confirmed earlier observations by authors such as Delaney & Huselid, 2006 who identified the importance of the behavioural aspects of employees on ensuring competitive success through a commitment to continuous improvement (CI) activities. Bessant and Francis (1999) were early pioneers of such research developing a behavioural model describing the evolution of continuous improvement capabilities....this (model)

provides a specification for the particular behaviours which need to be acquired and embedded in the organisation in order to enable CI capability... This is an evolutionary learning process (within the learning factory), with a gradual accumulation and integration of key behaviours over time (Bessant and Francis, 1999, p. 1107). This in the case of manufacturing organisations has often proven pivotal in ensuring the maintenance of a 'high performance' organisation. (Barton & Delbridge, 2004 p.332) **(Paper 2)**.

2.2.3 Contrasting the two occupational cultures

An attempt to adopt a 'learning factory' (Barton & Delbridge, 2004) **(Paper 2)**; Barton & Delbridge, 2006 **(Paper 3)** approach, into policing organisations might be anticipated to have merit. Such pressures have not, until recently, (UK Government's Comprehensive Spending Review, 2010, raised the prospect of police redundancies) prompted rank and file officers to accept fully the need for speedy reform. To develop new forms of work organisation within the police that emphasise high commitment work systems and potentially the adoption of lean operations (Barton & Delbridge, 2004) **(Paper 2.)** will require a significant understanding of the power of police occupational culture to resist change. Without this the process of police reform will continue to falter to the detriment of both the police and the public.

2.3 Theme 3 – Lean

Many organisations (originally manufacturing but increasingly in the service sector} have attempted to encourage continuous improvement (CI) through a 'Lean thinking'

approach (Barton, 2013) (**Paper 8**). The concept of Lean as advocated by Womack & Jones, 1996, identifies five core principles. Namely: specifying value (i.e. customer value); making product flow smoothly; identifying the value stream; building a pull system (i.e. information flows from customer (citizens) to raw material providers (police)) and continuous improvement with the aim of achieving perfection. According to Womack and Jones, (1996), lean can benefit organisations at both strategy and operational levels. Lean researchers (Holweg, 2007; Hines et al. 2011) propose that developing knowledge workers by continuous learning contributes to the fifth principle of lean, that of continuous improvement. This is confirmed by Radnor (2010) in a review of business process improvement methodologies in the public services and by Barton and Delbridge (2001) in an analysis on contemporary manufacturing in the context of the 'learning factory.' (Barton & Delbridge, 2004 (**Paper 2**); Barton & Delbridge, 2006 (**Paper 3**).

At its simplest Lean has the core idea of maximising customer value while minimising waste. Lean means creating more value for customers with fewer resources. To accomplish this lean thinking should change the focus of management from an introspective organisational perspective to one that seeks to understand customer value and focuses its key processes to continuously improve. This has been observed to be the case in manufacturing organisations (Barton & Delbridge, 2004 (**Paper 2**); Barton & Delbridge, 2006 (**Paper 3**), but within the police service mixed (Barton, 2013) (**Paper 8**) results are observed. Within Flanagan's (2008) report the adoption of a Lean variant in the form of 'QUEST; is identified as an opportunity 'to engender and embed a culture of continued improvement, where culture change is the essence in successful process improvement work' (Flanagan, 2008 p. 32) (**Paper 4**).

Barton, 2013 investigates the reality of the impact of such process improvement initiatives on individual police forces in 2011 through a pilot study of 5 police forces within England and Wales. **(Paper 8)** The intention was to observe the reality, and not the reported rhetoric surrounding the nature, variety and scope of Lean initiatives being pursued across the police service in England and Wales. In the first instance 14 Chief Constables and Borough Commanders (London) were contacted and 5 agreed to participate in an initial pilot study. This study **(Paper 8)** adopted a commonly used research methodology of case studies. Yin (2009) describes them as a valid approach that follows the desire to understand complex social phenomena **(Paper 7)**. The strength of this approach is related to its power to explore complex social phenomena through the use of quantitative and qualitative data, and the freedom for the researcher to frame and organise data, establishing connections between context and data that could be insightful and perhaps contribute to future research questions (Barton & Valero-Silva, 2013 p. 547) **(Paper 7)**.

Through the use of case study examples the intention was to examine primarily the nature of Lean initiatives being undertaken and to observe whether these were consistent with an increasing literature on the application of 'Lean thinking' in the public sector. Such literature identified that both operational and organisational benefits can be seen to materialise from the adoption of such an approach (Papadopoulos et al. 2008; Radnor, 2010) **(Papers 4, 7)**. Of the five sites identified four were in Constabularies and the fifth was a Metropolitan London Borough.

In order to progress this, initial meetings were held with the chief constable's designated liaison officer/s (Police Constabularies) the Borough Commander in London and the Head of the Local Criminal Justice Board for a region of Wales. Each area was visited over a two day period and meetings were held between myself and

police officers and civilian staff involved in Lean implementation projects within their force areas. If available, documentary evidence was collected to inform my observations. The outcomes of those initial meetings were reported to provide an insight into the diversity of approaches within the police and criminal justice service (Barton, 2011) **(Paper 8) (Figure 2)**.

Radnor et al. (2012 p. 324) would identify with such observations as identified in **Figure. 2** as ‘unsurprising’ in the context of their own recent research in which they argue: ‘the model and implementation of Lean to date has been defective.’ The current implementation of Lean in public services has focused on the technical tools without an understanding of the principles and assumptions of Lean or, the context in which it is being implemented. This point is emphasised by Berry (2009 p. 11) who identified both the cost and ‘danger that (police) forces will seek to apply a few Lean tools and techniques to produce impressive short-term results, instead of seeking sustainable, continuous improvement and a true cultural shift.’ (Barton 2013 p. 222) **(Paper 8)**.

Clearly employee engagement will have a major impact on the success of any Lean implementation strategy as its success is predicated on the construct of people, notably front line staff, to make it happen (Liker & Meier, 2006) **(papers 2,3,4 and 8)**. It would therefore seem justified that the utilisation of the workforce (police) and their development should be an important area for action for police reform initiatives to be effectively implemented (Barton & Barton, 2011 p. 151) **(Paper 4)**.

Figure 2: The diversity of approaches to Lean within the police and criminal justice service

Case Study	Geographical location	Nature of Lean	Objectives	Issues/ Achievements	Assessment
1	Welsh Constabulary	Use of Lean tools and techniques observed. Adoption of broader interpretation of Lean, in terms of encouraging culture change (Radnor, 2010; Hines, 2011).	Following a critical external audit of Crown Prosecution Service (CPS). Lean audit of process from arrest to summary trial readiness.	All workshops of multi-agency format. After 6 months a number of process changes were made through the project with business benefits including cost savings. The lean approach continues to be supported through short daily team briefings and the use of team information boards (TIBs).	Good evidence of cultural change identified through good multi agency approach to Lean implementation and co-production of initiatives with users.
2	Metropolitan Police Borough	No evidence of Lean adoption	To maintain staff morale in the face of government financial cuts through setting clear objectives.	Whilst accepting reality of progressive business improvement development, Borough Commander not wedded to idea that 'lean' was the answer.	No evidence of any adoption of Lean methodologies.
3	Small Constabulary in South of England	Engaged in performance improvement programme in form of a 'Lean' variant (QUEST)	QUEST designed to deliver benefits and support senior officers to make re-investment decisions and seeks to build professional capabilities to deliver continuous improvement.	Chief Inspector trained as Lean Implementation Manager. Able to demonstrate initiatives that had improved the processing times of persons arrested. Other 'successes' visually represented on display boards in Police HQ. Focus on securing additional resources from savings.	Evidence of utilisation of Lean tools and techniques. 'Low hanging fruit' and some doubts about sustainability of initiatives.
4	Mid- sized Constabulary in Central England	Adopted Home Office QUEST (Lean variant) programme for productivity and performance improvement.	Identified in Annual Policing Plan for 2010/11. That Lean would be used to 'ensure people see us using staff, budgets and all other resources wisely to deliver value for money.'	Viewed as a success by Chief Constable. Force intends to review the way in which they are structured to deliver its services, based on previous Lean programme. In terms of delivering better value for money savings from planned efficiencies to be made available for re-investment in targeted areas of the service.	Lean programme viewed as a success, but seen simply as a 'cost saving' opportunity. Little evidence of culture change and focus on end users of services.
5	Small Constabulary in South West England	Lean had been implemented across some areas of the force by 'lean implementation champions'. Now discontinued	Funding previously secured for productivity and performance improvement programme.	Small team had demonstrated small savings from VFM initiatives through project. Decision made by senior officers that there knowledge would be better diffused throughout the organisation, therefore unit to be disbanded.	Lean initiatives cancelled as a cost saving measure.

3.0 Advancing the police reform agenda

Having analysed the three key themes of this thesis in the context of police reform, I now go on to discuss how my research contributes to **four** areas of knowledge that offer an insight into ways that the police reform agenda might be advanced. First, the importance of human resource management (HRM) practices in developing the workforce and creating an environment for change. The originality here comes from comparing the working environments of automotive component manufacturers (**Papers 2 and 3**) with the police (**Papers 1 and 4**). From the outset my research identifies striking differences in worker commitment and participation in change programmes. Within the automotive component industry, change is accepted as part of organisational life, contrast this within the police where it has traditionally been seen as a threat and to be resisted. My research further confirms the usefulness of progressive HR practices in facilitating employee engagement which I identify as an area for the police to develop.

Second, all papers (**Papers 1-8**) share an interest in improving performance. With the current UK coalition government demanding improvements in the police performance management system, two papers (**Papers 5 and 6**) are included within this thesis that provide original contributions to the police performance literature. **Paper 5** looks at targeted criteria performance improvement within the police and uses a modern ranking technique (PROMOTHEE) previously unused in this area. A further novel contribution to the literature is also provided by **Paper 6**, which employs fuzzy c-means, a clustering technique nascent in this area of research. This original research demonstrates that there is a significant link in the relationship between the sanction detections levels of police forces and public opinion about their ability to fight crime.

Third, the effectiveness of continuous improvement practices and the application of Lean principles in the automotive component industries are highlighted in **Papers 2 and 3**. This knowledge is used in a comparative assessment of the utility of Lean with the police service of England and Wales (**Papers 4 and 8**). These papers add to an emerging literature of studies of Lean within public service organisations and contribute significantly to the limited knowledge of the application of Lean within the police. Further by utilising the knowledge obtained from the extensive research within Lean manufacturing, ideas for the successful implementation of business process methodologies such as Lean are explored.

Fourth and finally, the papers specifically focusing on the police (**Papers 1, 4-8**) pay particular attention to the financing and governance of the police in England and Wales. Specifically the impact of the coalition government's Comprehensive Spending (CSR) in 2010 and the election of Police and Crime Commissioners in November 2012 are highlighted as having the potential to make a significant impact on the police reform agenda (**Papers 4 and 8**). Added together they identify a significant opportunity for a strategic and operational reorientation of the police service in England and Wales.

3.1 Developing the police workforce

Barton & Delbridge, 2004, 2006, (Papers 2 and 3) highlight the influence of human resources in the determination of firm/organisational performance within manufacturing organisations (Purcell & Hutchinson, 2007). This has been further supported through a variety of divergent theoretical frameworks (Jackson & Schuler, 1995) that emphasise the importance of effective HRM practices. Effective HRM practices are therefore seen as important in providing support for improving worker

performance through influencing employee attitudes (Barton & Barton, 2011) (**Paper 4**). This would be in line with the proposition of human capital theory which suggests the importance of employees in providing economic value to their organisations (Barton & Delbridge, 2004 p. 224) (Paper 2). Youndt et al. (2006) contend that this is achieved through the skills, knowledge and abilities of individual employees. This was observed through research conducted between 1999-2000 by the author within eighteen UK and US first tier automotive suppliers (Barton & Delbridge, 2006 p. 388) (**Paper 3**).

Within these organisations our interviews with employees identified how particular HR practices such as recruitment and selection, performance appraisal and the effect of policies on discipline and reward impacted on employee attitudes. As the research developed we concluded that it was the integrated bundling of these practices, defined by Delaney & Huselid (1996) as ‘high commitment’ work practices, that had an important influence on employee productivity and as a result overall firm performance (Oliver, Delbridge & Barton, 2002); Barton & Delbridge, 2004; Barton & Delbridge, 2006) (**Papers 2 and 3**). Our research findings further supported earlier observations by Huselid & Delaney, 2006 who identified the importance of the behavioural aspects of employees on ensuring competitive success through a commitment to continuous improvement (CI) activities.

Additionally given this perspective Guest, 1997 and Truss 2001 identify motivational theory as an area in which the relationship between good HR practices and individual performance has an important influence. Here ‘discretionary effort’ is identified as the causal link between ‘high commitment’ or high performance work systems (HPWS) and overall firm performance. (Barton & Delbridge, 2006 p. 387) (**Paper 3**). I have previously identified the area of ‘discretion’ as an important element of police

occupational culture and an area that can have a significant positive or negative effect on police reform (Barton, 2004 p. 351) **(Paper 1)**.

Research into 'high performance work practices', which has concentrated on explaining differences in operational performance, suggests that methodologically the absence of widely accepted measures of 'progressive' or 'high-performance' HRM practices makes it difficult to compare findings across different studies (Barton and Delbridge, 2004) **(Paper 2)**. However despite divergent approaches to HRM, there does appear to be a commonality of purpose that presupposes that there are complementarities, or synergies, both within HRM practices and between a firm's HRM practices and its competitive strategy, that are intended to have a positive effect on organisational performance (Delaney and Huselid, 1996; Florida *et al.*, 1998; Barton and Delbridge, 2004; Barton and Delbridge, 2006) **(Papers 2 and 3)**.

This is recognised by Barton and Barton, 2011 **(Paper 4)** with respect to developing the UK police workforce. Here the importance of effective HR practices for influencing employee attitudes and improving police performance is seen as central to police reform. In order to achieve this Flanagan (2008) makes the case for a robust system of HR management running throughout the Police Service viewed as necessary to ensure that strategic manpower objectives are met (Barton & Barton, 2011 p.151) **(Paper 4)**.

This should be seen as particularly important within an organisation such as the police where discretionary behaviour, sometimes referred to as organisational citizenship behaviour (OCB) (Bateman & Organ, 1983; Ehrhart, 2004) can have such an important part to play in maintaining the confidence and trust of the public **(Paper 4)**. The more effective internal HR practices become, particularly in the areas of management and 'leadership' (particularly of front line officers) then the greater the

likelihood they will be able to influence appropriate employee behaviours and attitude that encourages public trust and confidence in the police (Barton & Beynon, 2012 p.2) **(Paper 6)**.

3.2. Improving Police Performance

Barton & Beynon, 2011 p.358 **(Paper 5)** identify in their research paper that much work has been undertaken in the area of police performance management, both at a governmental level (Spottiswoode, 2000, Home Office, 2009) and academically (Barton and Beynon, 2006; Larson and Blair, 2009).

In terms of other techniques utilised to investigate police performance, Barton & Beynon, 2011 p. 358 **(Paper 5)** identify there has also been the use of data envelopment analysis (Verma and Gavirneni, 2006) and stochastic frontier analysis (Thanassoulis, 1995), which have used a range of measurements, input and output, on which to base their performance studies. A related comment was outlined in the government sponsored Spottiswoode (2000) report which identified the need for more efficiency based measurements. Drake and Simper (2005) succinctly describe the appropriateness of whether to employ input and output (efficiency) or just output (performance) criteria (see also Dadds and Scheide, 2000; Drake and Simper, 2005).

In earlier research, Beynon and Barton (2006) investigated the ability to model the rank performance of a police force with respect to its most similar force (MSF) group, including the identification of the minimum changes in its sanction detection levels that would improve their perceived performance ranking. The technique utilised in these studies was the PROMETHEE outranking method of multi-criteria decision making (Brans and Vincke, 1985; Brans *et al.*, 1986; Barton & Beynon, 2012 p.357) **(Paper 5)**. The identification of prescribed minimum changes to improve a police

force's performance ranking, a feature of the uncertainty based analysis with PROMETHEE (Hyde *et al.*, 2003) (**Paper 5**).

Despite the availability of techniques for measuring performance, on police performance management, Flanagan (2008) makes a number of recommendations. Among these he concludes that;

'Forces should focus effort on high potential areas for improved productivity, such as demand management ... procurement, and flexible working',
(Flanagan, 2008:34).

In so doing they need to learn lessons from organisations characterised as being 'high performing.' Barton & Barton, 2011, (**Paper 4**) highlight this, with the need to establish new thinking in line with a best in class approach to the development of effective performance measures.

I argue as a result of my own research (Barton & Delbridge, 2004) (**Paper 2**) within the automotive component industries, that an important yardstick for evaluating any management strategy including performance measurement within the police should concern its usefulness. It is important to ask specific questions as to what officers get from performance measurement, how it is measured and how widely is performance measurement used in a given organisation? Performance is also affected as much by social and political conditions, legal structures and as it is by explicit management action.

In the United Kingdom (UK) and more specifically in England and Wales the UK Government continues to conduct or sponsor research into the complexities surrounding appropriate performance measures for the police (Home Office, 2008; Flanagan, 2008; Berry, 2009; HMIC 2010, Barton & Beynon, 2011) (**Papers 4 and 5**). This is in addition to legislative changes that have been made with the intention of giving a clearer focus to police performance priorities (Barton & Barton, 2011; Barton, 2013) (**Papers 4 and 8**). As a result the nature and type of performance indicators (PIs) have changed over the years in relation to the police service (Barton & Beynon, 2011) (**Paper 5**) with the focus in 2013 changing too fewer but ‘better’ PIs.

There is no agreement about the precise role played by the PIs in organisations (Smith, 1990). Logically there cannot be a correct list of performance indicators and they can only be judged in terms of their usefulness and the cost of generating the information they contain relative to the benefits derived from their use. What is clear from my research is that the use of innovative modelling has the potential to add value to techniques that are currently used in the area of police performance improvement, for instance in the case of sanction detection levels (Barton & Beynon, 2011) (**Paper 5**). At the fundamental level this could be viewed in terms of ‘Where to start from first, and from there?’ with respect to targeting certain types of crime. (Barton & Beynon, 2011 p. 1) (**Paper 5**). As a consequence it enables the police at force level to target performance improvement within a specific area of measured operational policing namely sanction detection levels. This is achieved through the use of force crime statistics and the application of PROMOTHEE (Preference Ranking Organization Method for Enrichment Evaluation) which is an outranking method of multi-criteria decision making. As such it can elucidate a ranking (performance) of

alternatives (police forces) through the comparative differences of values over a number of different criteria (sanction detections). This enables a force to make targeted criteria analysis of a particular crime and as such if desired can allocate resources in an attempt to reduce it (Barton & Beynon, 2011 p. 360) **(Paper 5)**. This novel approach to performance improvement is one of the contributions that this thesis provides to both the literature and as a practical tool for use within police forces.

Another useful application of mathematical modelling techniques presented by the author (Barton & Beynon, 2012) **(Paper 6)** is an exploratory study of the ability to cluster police forces based on their sanction detection levels over a number of different offence groups and whether these clusters have different associated public opinions towards them. In our paper we employ fuzzy c-means clustering technique, which through the allowance for object's degrees of membership to different clusters. It is a particularly appropriate technique for discerning patterns amongst ambiguous data (such as with sanction detection level data) (Barton & Beynon, 2012 p. 3) **(Paper 5)**. The results of this analysis show the public does notice the level of crime within their local community. There is also a significant link between the, perception of the public as measured through public opinion surveys (British Crime Survey) of confidence in their local police to fight crime. Again, Barton & Beynon, 2012 **(Paper 6)** therefore provide a novel contribution to the literature on police performance improvement techniques and one that Police and Crime Commissioners (PCCs) might draw upon as they develop new performance management systems for their forces. The need for this has been particularly highlighted in the UK coalition government's Comprehensive Spending Review (CSR, 2010). (Barton & Beynon, 2011 p. 358) **(Paper 5 and 8)**. The Review outlines clear expectations for the police to rise to the

challenge of improving their performance across a broad cross-section of activities which in turn is likely to have a fundamental impact on the nature of policing in the UK.

3.3 The adoption of a Lean thinking approach within the police

Notwithstanding the importance of improving performance, more generally there has also been recognition of the need to improve the quality and reduce costs across the police in England and Wales (Barton & Barton, 2011) (**Paper 4**). In response to this, the last few years have seen an increase in application of business process improvement methodologies such as Lean, across the UK public services as a mechanism for achieving such objectives (**Papers 4 and 8**).

In terms of the methodologies employed, the application of Lean has an extensive literature (Bhatia & Drew, 2006; Radnor et al., 2006; Hines et al., 2008; Barton, 2013) (**Papers 4, 5, 6 and 8**). Successful implementation would appear to offer potential benefits to public organisations through both enhancing customer satisfaction whilst at the same time reducing costs (Dedhia, 2005; O'Rourke, 2005). As such, this would appear to have the potential of being a particularly useful innovation within the police service and its applicability has been identified by various authors (Berry, 2009; Flanagan, 2008; Barton, 2013) (**Papers 4 and 8**) with the potential for substantial operational and organizational benefits seen to materialise from its adoption (Papadopoulos & Merali, 2008). Although to date the most cited examples of lean application have been within the health services (Radnor & Walley, 2008). There is evidence that in other public service environments improvements in service performance, improved processing times and achieving 'better value for money' have

resulted from such lean interventions (Hines & Lethbridge, 2008; Barton, 2013) **(Paper 8)**.

Barton, 2013 p.223, **(paper 8)** (Figure 2) highlights that to date the implementation of Lean across the police service in England and Wales is not consistent and the results are at this stage ambiguous. Such observations confirm the concerns of Berry, (2009 p. 11) who identifies that the implementation of Lean is dependent on people, notably 'frontline staff' to make it happen. This conclusion is confirmed by my previous research (Barton & Delbridge, 2004) **(Paper 2)** within the automotive components industry which identifies the importance of direct shopfloor participation and commitment to Lean implementation and continuous improvement activities.

Barton, 2013 **(Figure 2)** also highlights the failure of some police force areas to commit sufficient resources to Lean to ensure the continuance of such programmes. Berry (2009) identifies that there is both a cost and a danger that some police forces will seek to apply a few Lean tools and techniques to produce impressive short term results (Barton & Barton, 2011 p.151), instead of seeking sustainable, continuous improvement and a true cultural shift.

3.4 Finance and Governance

Running in parallel with UK coalition governments' police reform agenda a 2010 United Nations report identified amongst others two key questions to be addressed in consideration of how reforms to public services and how service delivery might be improved: First, how can public administration secure the provision and expansion (maintenance) of public services under the conditions presented by the (financial)

crisis, and how can citizens be engaged to that end? Second, how can multilevel governance and decentralization contribute to better public service delivery at the local level? (United Nations, 2010: 12).

These questions are pertinent when considering the impact of proposed reforms on the police service in England and Wales. Such reforms reinforce a long held aspiration by successive UK governments that public service organizations should become more accountable (**Papers 4 and 8**), customer focused and responsive to stakeholder needs (**Papers 4, 6 and 7**) (Ackroyd, 1995; Pollitt, 2000; Osborne 2006; Fryer et al. 2009). And that this should be achieved through a transformation of management practices, processes and culture. (Andrews et al. 2006; Bitici et al. 2006).

In terms of the budgetary impact of the financial crisis (2008) the UK coalition government's response in the shape of the 2010 Comprehensive Spending Review (CSR) identified the need to reduce the police budget (Barton, 2013) (**Paper 8**) across the police forces of England and Wales. Policing is expensive and much of the work over the last forty years in terms of government efforts at police reform has been directed at getting better value for money from policing services (Barton and Valero-Silva, 2013 p.1) (**Paper 7**). As a result of the Police Reform and Social Responsibility Act, 2011, the responsibility for achieving this in conjunction with Chief Constables rests with the Police and Crime Commissioners (PCCs) (November, 2012) (**Paper 4**). The PCCs and their respective police forces therefore faces the dual challenge of reducing costs whilst at the same time maintaining levels of public confidence and trust in the services they provide (Larsen & Blair, 2009; Bradford, 2011) (**Papers 4, 6 and 8**).

The mechanisms by which this is intended to be achieved are fourfold. First there will be a greater level of local accountability for individual Chief Constables following the election of local PCCs as of November 2012, The PCCs are now responsible for ‘the budget, staff, estate and other assets in their force area’ and to ensure that there are appropriate performance management systems in place (HC 511:17) (**Paper 4 and 8**). Second, there will be a greater focus on partnership working throughout the Criminal Justice System (CJS) (Barton & Valero-Silva, 2013) (**Paper 7**) Thirdly, overall responsibility for managing the performance of police forces has shifted from the Home Office to Her Majesty’s Inspectorate of Constabulary (HMIC). Fourthly, the Home Office will neither set nor maintain top-down numerical performance targets or specify the nature of the performance indicators to be used (other than an indicator for confidence) for individual police forces (**Paper 4 and 5**).

4.0 Conclusion

Since the late 1970s successive UK governments, have attempted to implement reforms across the English and Welsh police services. From a financial standpoint policing is ‘expensive’, with a budget approaching £13 billion and employing upwards of 230,000 operational and support personnel, the police service in England and Wales is a significant organisation not only in cost terms but in its impact upon society. Paradoxically although public attitudes towards the police are generally positive it is evident that the social context of policing is changing. The police in England and Wales face the problem of reducing costs while at the same time satisfying the demands, of a society, which has become far more divisive and fragmented.

The challenge for the police therefore is to introduce innovative ways of improving efficiency and productivity, whilst at the same time improving public opinion as to their effectiveness in their ‘fight against crime.’ This will require significant reform, which will have a major impact on police organisations in England and Wales.

Research is ongoing but the evidence provided within this thesis and the contribution that it makes to the literature suggests some significant steps towards reform of the police in England and Wales and describes influential elements of the ongoing reform process through a meta-analysis (an objective and quantitative methodology for synthesizing previous studies and research on a particular topic into an overall finding), comprising eight papers. These are put forward to provide the platform for understanding the apparent difficulty in reforming the police in England and Wales.

To provide a framework for discussion three key themes are identified – ‘Environment’, ‘Occupational Culture’ and ‘Lean,’ that may contribute to future strategic consideration within the police. Through this lens it is clear that they are not mutually exclusive but overlap as the police reform agenda has evolved over time.

From an ‘environmental’ perspective and locating discussions within the backdrop of the 2008 global financial crisis, I have highlighted how the coalition government’s Comprehensive Spending Review (CSR, 2010) demanded a major review of the strategic and operational functions of the police service (**Paper 4 and 8**). As a result significant budgetary cuts have been made across the police service in England and Wales resulting in significant structural changes. Driven by the Police Reform and Social Responsibility Act, 2011, changes have included the direct election of Police and Crime Commissioners (PCCs) in November 2012. This fundamental revision of the governance structure of the police from the traditional ‘tripartite’ governance

arrangements (Home Office, police authority and chief constable) has significantly changed the policing landscape. The duly elected PCCs are now responsible for the appointment of their chief constables, for the budget, staff, estate and other assets in their force area and to ensure that there are appropriate performance management systems in place. PCCs thus provide a new governance mechanism, able to critically review existing budgets and implement widespread reform.

Such radical reforms across the police service have been long overdue and it has been the ability of the police, to a large extent through the strength of their ‘occupational culture’ to resist reform that has often led to a situation of spiralling costs but little evidence of improvements in service performance (**Paper 1, 4 and 8**). Contrast this situation to that of private sector organisations, that over the last decades have constantly been under pressure to reform working and operational practices.

For example I have described how western automotive manufacturers having experienced similar internal and external pressures during the 1980’s and 1990’s, employed methods that transformed their industry (**Paper 2 and 3**). I have argued within this thesis that such methods might provide opportunities to support the transformation of policing (**Paper 4 and 8**). My work within the domain of operational improvement within automotive manufacturing and the police illustrates how selected improvement methods can deliver improvements in a range of organisational measures (**Papers 4, 5, 6 and 8**). Compared with traditional thinking, and consistent with the context of policing, the new approaches are able to perform well in terms of both cost and performance without experiencing traditional trade-offs in service levels. From this perspective, the potential benefits of employing similar improvement frameworks make them highly appealing within the public sector

context (Radnor and O'Mahoney 2013). Of the improvement frameworks available, the 'lean' perspective is often favoured due to its emphasis on easily understood tools and techniques that can be quickly and relatively cheaply acquired (Hines et al. 2004). This area of 'lean' constitutes the third theme within this thesis and draws upon research within the established domain of lean manufacturing (**Papers 2 and 3**).

Lean transformations have been stated as requiring changes in both operational and organisational systems, within the police service this means that both operational police officers and administrative support staff need to be engaged in improvement activities. Further research in the police context will help extend the work of Greasley (2004), by relating improvements to a range of organisational stakeholder and long term aims of improvement initiatives outside human resource practices.

The key themes are therefore orientated to reflect on research that I have been conducting over the past ten years and the eight journal articles published in support of this research. As such they make their own contribution to the existing conceptual and empirical literature relating to the police. Beyond this however the contribution that this cumulative literature provides, is to provide some context to the underlying difficulties in implementing police reform.

Unfortunately, much literature focuses upon translating business process techniques into short term improvements in a limited range of performance measures realised in isolated interventions. Whereas the work changes necessary for long term, strategic improvements, require the engagement of all staff (both police and civilian). Recognising this requirement I chose to look at four key areas that could have or are having an influence on the police reform agenda.

First, the importance of human resource management (HRM) practices in developing the workforce and creating an environment for change (**Paper 1, 2, 3, 4 and 7**).

Second, all papers share an interest in improving performance (**Papers 1-8**). Third, the adoption of continuous improvement and a lean thinking approach. With its roots in manufacturing the current application within the police is seen to have the potential of advancing the police reform agenda (**Papers 2, 3, 4 and 8**). Fourth and finally, an analysis is made of 40 years of government sponsored reports and legislation designed to encourage police reform which have at their core a focus on finance and governance (**Papers 1, 4 and 8**).

What is clear from research evidenced within this thesis is that these four ‘areas’ are not mutually exclusive. Police reform is most likely to be sustainable through the effective interaction of these four different elements. For example evidence suggests that effective ‘lean’ implementation is predicated on the construct of people, notably ‘front line staff’ to make it happen and deliver improvements to the customer (Womack et al.1990, Hines et al. 2004; Berry, 2009). However, appreciation of lean concepts also illustrates that frontline staff do not operate in isolation, with their success being equally reliant on other organisational members contributing to the value stream that they operate within (Hines et al. 2004). While short term cost savings may be impressive, without embedding new, and revised values and beliefs within those affected, improvements are likely to be short lived until behaviours revert to pre-intervention levels (Bateman, 2005; Vest and Gamm, 2009).

In order to address this issue, *“developing a culture that creates the involvement of everyone in the organization is critical for the implementation of the lean philosophy”*

(Radnor and Walley, 2008: 14). Such a focus on key behavioural characteristics recognises a paradox amongst, and a cross-over between both public and private sector organisations. Understanding of these key elements of an organisation's occupational sub-culture are likely, to an extent, to predict the (un)successful outcome of significant change programmes or any attempts at whole scale organisational reform. To address such issues, systematically developed, strategically oriented performance measurement systems may play a key role in aligning perceptions of those in the organisation toward improvement.

A further issue for consideration within the police service, is that roles are considerably more defined, with established professional identities that may have been developed through extensive practice based training (Drucker, 1955: 292); McNulty (2003) illustrates how professionals may deliberately subvert managerial improvement programmes that attempt to reorganise their complex work practices. Consequently, automotive workers may be more willing to accept and implement new manufacturing techniques, when compared to doctors, nurses or police constables, who may resist changes to a much greater extent, as illustrated by Waring and Bishop (2010) and Radnor et al. (2012). Without characterising and understanding these behavioural elements, organisations will have little chance in innovatively and proactively changing as well as sustaining that change.

This exploration of the implementation of lean within the police services illustrates a diversity of approaches to implementation, aims and outcomes, reflecting the complexity of the public sector environment (Waring and Bishop 2010). While the case data (**Papers 4 and 8**) report on implementing the same underlying philosophy and concept within largely the same context, different constabularies approached lean

in very different ways. To overcome, or at least mitigate this complexity, Osborne et al. (2010) identify the need to develop a body of theory rooted in a 'public service dominant-logic'. Rather than picking and choosing individual elements of standard lean tools, they suggest that lean needs to be comprehensively re-imagined in order to embrace public services and the requirements of the context. Such a view is remarkably consistent with the transfer of lean knowledge even within the automotive sectors. Manufacturers new to the concept have become lean by developing their own, "*mutated emulation*" of lean, appropriate for their particular context (Lee and Jo 2007: 3665).

'Lean' has been applied very effectively within manufacturing organisations to the point where manufacturing is considered to have moved into a "post-lean age" (MacCarthy et al. 2013). Consequently, it has not been an unreasonable assumption that the principles of 'lean' could be adapted for utilisation within public service organisations. However, what has tended to result, is the transfer of the easily codified tools and techniques that often define lean, while overlooking the underlying philosophies and principles, that are more embedded within exemplar organisations (Hines et.al. 2004; Womack et al. 1990). The current research has thus attempted to analyse a lean implementation within the public service sector, in order to identify key practices to facilitate the development of a lean philosophy that promote knowledge creation within the public service context.

The police service, under extreme pressure from successive governments to reform, has adopted new business methodologies including 'lean', in the anticipation of a quick and significant improvement in performance. The findings of my research are broadly consistent with wider literature on both manufacturing and service contexts,

that the initial adoption of a few 'lean' tools and techniques can provide a starting point for the elimination of certain types of waste. However, this evidence is diffuse and the current research illustrates that within the police, improvements have been varied in terms of commitment of the police to adopt the deeper, more philosophical and cultural underpinning of 'lean' principles. This highlights the need for a more holistic conceptualisation and implementation of lean, in order for the underpinnings of lean to become embedded in an organisation in order to drive continuous, rather than isolated, short term improvement.

Within the thesis, I discuss this apparent weakness by critically reflecting on lean's relevance to the policing context and identify weaknesses within research conducted on police (**Papers 4 and 8**). Future research needs to address such limitations through a new theoretical perspective (Radnor et al. 2012; Osborne et al. 2013). This new perspective critiques lean within a public service setting and sets out a series of propositions that identify the need for more innovative approaches to public management theory, through the adoption of a 'public service dominant' approach to enrich lean thinking and promote organisational reform (Osborne et al. 2013). To further develop this insight, further research will be required, with the police service presenting an interesting organisation in which to further explore and test such new theoretical propositions.

In summary therefore, it is in the key areas of finance and governance coupled with improvements in human resource management practices, the application of new business process methodologies such as lean and a focus on performance improvement that my research indicates as having the greatest potential for progressing, the police reform agenda.

References

- Achanga, P., Shehab, E., Roy, R. and Neldor, G. 2006. Critical success factors for lean implementation within SMEs, *Journal of Manufacturing Technology Management*, Vol. 17 (4) pp. 460-471.
- Ackroyd, S. 1995. From public administration to public sector management, understanding contemporary change in British public services. *International Journal of Public Sector Management*, Vol. 8 pp. 19-32.
- Andrews, R., Boyne, G. & Enticott, G. 2006. Performance failure in the public sector. *Public Management Review*. Vol. 8 pp. 273-296.
- Barton, H. and Delbridge, R. 2001. Developments in the Learning Factory: Training Human Capital. *Journal of European Industrial Training*, Vol 3 pp 465-472.
- Barton, H. (2003) Understanding occupational (sub) culture – a precursor for reform: The case of the police service in England and Wales’. *International Journal of Public Sector Management*. Vol.6 (5) pp. 346-358.
- Barton, H. and Delbridge, R. 2004. HRM in support of the learning factory: evidence from the US and UK automotive components industries. *International Journal of Human Resource Management*. Vol.15 (2) pp. 331-345.
- Barton, H and Delbridge, R. 2006. Delivering the “learning factory”? Evidence on HR roles in contemporary manufacturing. *Journal of European Industrial Training*. Vol. 30 (5) pp 385-395.
- Barton, H. and Beynon, M.J. 2006. Getting to the Top: An analysis of performance ranking amongst MSF groups in Wales. *British Academy of Management Conference Proceedings*. ISBN 0-9549608-2-3.

- Barton, H. and Beynon, M. 2011. Targeted criteria performance improvement: An investigation of a “most similar” UK police force. *International Journal of Public Sector Management*. Vol. 24 (4) pp. 356-367
- Barton, H. and Beynon, M. 2012. Policing for the People: A cluster based investigation of the relationship between police force operational performance and public opinion. *International Journal of Emergency Services*. Vol.1 (1) pp.1-12.
- Barton, H. and Valero-Silva, N. 2013. Policing in partnership: a case study in crime prevention. *International Journal of Public Sector Management*. Vol.26 (7) pp.543-553.
- Barton, H. 2013. Lean policing? New approaches to business process improvement across the UK police service. *Public Money and Management*. Vol. 3(3) pp. 221-224.
- Barton, L. and Barton, H. (2011) Challenges, issues and change: what’s the future for UK policing in the 21st Century. *International Journal of Public Sector Management* Vol.24 (2) pp.146-156.
- Bateman, N. (2005) 'Sustainability: the elusive element of process improvement.'
International Journal of Operations & Production Management 25 (3) pp. 261-276.
- Bateman, T.S. and Organ, D.W. 1983. Job satisfaction and the good soldier: the relationship between affect and employee citizenship. *Academy of Management Journal*, Vol. 26 (4) pp. 587-95.
- Berry, J. 2009. Reducing Bureaucracy in Policing: Full Report. London: Home Office.
- Bessant, J. & Francis, D. 1999. Developing strategic continuous improvement capability. *International Journal of Operations and Production Management*. Vol.19 (11) pp 1106-19.
- Bhatia, N. and Drew, J. 2007. Applying Lean production to the public sector. *McKinsey Quarterly* (June)

- Bitici, U., Mendibil, K., Nudurupati, S., Garengo, P. & Turner, T. 2006. Dynamics of performance measurement and organizational culture. *International Journal of Operations and Production Management*. Vol.26 pp.1325-1350.
- Bittner, E. 1967. The Police on Skid-row: A Study of Peace-keeping. *American Sociological Review*. Vol.32 (5) pp. 699-715.
- Boyne, G., Martin, S. and Walker, R. 2004. Explicit reforms, implicit theories and public service improvement. *Public Management Review*. Vol. 6 (2) pp. 211-28.
- Bradford, B. 2011. Convergence, not divergence? Trends and trajectories in public contact and confidence in the police. *British Journal of Criminology*, Vol. 51 pp. 179-200.
- Brans, J.P. and Vinche, P.H. 1985. A preference ranking organization method: the PROMOTHEE method for multi criteria decision making. *Management Science*, Vol. 31 pp. 647-56.
- Crank, J.P. 1998. *Understanding Police Culture*. Cincinnati: Anderson Publishing Company.
- Dadds, V. and Scheide, T. 2000. Police performance and activity measurement. *Trends and Issues in Crime and Criminal Justice Series*. Vol. 18 pp. 1-6.
- Dedia, N.S. 2005. Six Sigma basics. *Total Quality Management*, Vol.16 (5) pp. 567-574.
- Delaney, J.T. and Huselid, M.A. 1996. The impact of human resource management practices on perceptions of organizational performance. *Academy of Management Journal*. Vol. 46 pp. 740-751.
- Drake, L.M. and Simper, R. 2005. The measurement of police force efficiency: an assessment of UK Home Office policy. *Contemporary Economic Policy*, Vol. 23 (4). pp. 465-82.
- Drucker, P.F. (1955) *The Practice of Management*. Edited by Meredith Belbin. Oxford: Butterworth-Heinemann.
- Ehrhart, M.G. 2004. Leadership and procedural justice climate as antecedents of unit-level organizational citizenship behaviour. *Personnel Psychology*, Vol. 37 (1) pp. 61-94.
- Flanagan, R. 2008. *The Review of Policing – Final Report*. London. HMSO.

- Florida, R., Jenkins, D. and Smith, D.F. 1998. The Japanese Transplants in North America: Production Organization, Location, and Research and Development. In Boyer, R., Chanaron, J.J., Jurgens, U. and Tolliday, S. (eds). *Between Imitation and Innovation: The transfer and Hybridisation of Production Models in the International Automotive Industry*. Oxford. Oxford University Press.
- Fryer, K, Antony, J. & Ogden, S. 2009. Performance management in the public sector. *International Journal of Public Sector Management*. Vol.22 pp. 478-498.
- Greasley, A. (2004) 'Process improvement within a HR division at a UK police force.'
International Journal of Operations & Production Management 24 (3) pp. 230-240.
- Guest, D. 1997. Human resource management and performance: a review and research agenda. *International Journal of Human Resource Management*, Vol. 8 (3) pp. 263-276.
- HC 511 2011. Policing: Police and Crime Commissioners, House of Commons, Home Affairs Committee, Second Report of Session 2010-11. London, UK.
- Hines, P., Holweg, M. and Rich, N. 2004. Learning to evolve: a review of contemporary lean thinking, *International Journal of Operations & Production Management*. Vol.24 (9/10) pp. 994-1011.
- Hines, P. and Lethbridge, S. 2008. *New Development: Creating a Lean University*. Public Money and Management. Vol. 28 (1)
- Hines, P., Found, P., Griffiths, G. and Harrison, R. 2011. *Staying Lean: Thriving not simply surviving*. 2nd ed. Productivity Press, New York, NY.
- HM Treasury and Cabinet Office, 2004. *Developing Decision Making: Delivering Better Public Services: Refining Targets and Performance Management*. HM Treasury and Cabinet Office, London.
- HM Treasury, 2006. *Delivering a step change in productivity*, PEG 24 (06), HM Treasury, London.

- HM Treasury Comprehensive Spending Review. 2010. London: UK.
- HMIC 2010. 'Valuing the Police: Policing in an age of austerity', London, UK.
- Home Office, 2008. Efficiency & Productivity Strategy for the Police Service, 2008-11. London.
- Home Office. 2009. Protecting the Public; Supporting the Police to Succeed. London. HMSO.
- Home Office. 2010. *Police Service Strength: England and Wales*. 30 September. London, HMSO. London.
- Hough, M., Maxfield, M., Morris, B., & Simmons, J. 2007. The British Crime Survey over 25 Years: Progress, Problems, and Prospects. In M. Hough and M. Maxfield (eds), *Surveying Crime in the 21st Century*. Cullompton: Willan.
- Holweg, M. 2007. The Genealogy of Lean Production. *Journal of Operations Management*. Vol. 25 pp. 420–437.
- Huselid, M.A. 1995. The Impact of Human Resource Management Practices on Turnover, Productivity and Corporate Performance. *Academy of Management Journal*, Vol.38 pp. 635-72.
- Hyde, K.M. and Maier, H.R. and Colby, C.B. 2003. Incorporating uncertainty in the PROMOTHEE MCDA method. *Journal of Multi-criteria Decisions Analysis*. Vol. 12 (4/5) pp. 71-91.
- Jackson, S.E. and Schuler, R.S. 1995. Understanding Human Resource Management in the Context of Organizations and their Environments. In Rosenweige, M.R. and Porter, L. W. (eds) *Annual Review of Psychology*, Vol. 46 pp. 237-64.
- Koh, S., Demirbag, M., Bayraktar, E., Tatoglu, E. and Zaim, S. 2007. The impact of supply chain management practice on performance in SMEs. *Industrial Management and Data Systems*, Vol.10 (1) pp. 103-124.

- Larsen, J.E. and Blair, J.P. 2009, The importance of police performance as a detriment of satisfaction with police, *American Journal of Economics and Business Administration*, Vol.1 pp. 1-10.
- Lee, B-H, and Jo, H-J. (2007) 'The mutation of the Toyota production system: adapting the TPS at Hyundai Motor Company.' *International Journal of Production Research* 45 (16) pp. 3665-3679.
- Liker, J. and Meier, D. 2006. *The Toyota Way Fieldbook: A Practical Guide for Implementing Toyota's 4 Ps*, McGraw-Hill, New York, NY.
- MacCarthy, B. L.;Lewis,M.;Voss,C. and Narasimhan,R. (2013) 'The same old methodologies? Perspective on OM research in the post-lean age.' *International Journal of Operations & Production Management* 33 (7) pp. 934-95
- McNulty, T. (2003) 'Redesigning public services: challenges of practice for policy.' *British Journal of Management* 14 (s1) pp. S31-S45.
- Neely, A., Gregory, M., & Platts, K. 1995. Performance measurement system design: A literature review and research agenda. *International Journal of Operations & Production Management*. Vol. 15(4) pp. 80-116.
- Oliver, N.; Delbridge, R. and Barton, H. 2002. Lean production and manufacturing performance improvement in Japan, the US and UK 1994-2001. ESRC Centre for Business Research, University of Cambridge. Working Paper No.232.
- O'Rourke, P. 2005. A multiple case comparison of Lean Six Sigma deployment and implementation strategies, ASQ Conference on Quality and Improvement Proceedings, pp. 581-591.
- Osborne, S. 2006. The new public governance? *Public Management Review*. Vol. 8 pp. 377-87.
- Osborne, S. 2010. Delivering Public Services: Time for a New Theory? *Public Management Review*. 12(1) pp. 1-10.

Osborne, S. and Strokosch, K. (2013), 'It takes two to tango? Understanding the co-production of public services by integrating the services management and public administration perspectives.' *British Journal of Management*, in press.

Papadopolous, T. and Merali, Y. 2008. Stakeholder Network Dynamics and Emergent Trajectories of Lean Implementation Projects: A study in the UK National Health Service. *Public Money and Management*. Vol. 28 (1) pp. 41-48.

Pollitt, C. 2000. Is the emperor in his underwear? An analysis of the impacts of public management reform. *Public Management*. Vol.2 pp. 181-99.

Pollitt, C.& Bouchaert, G. 2000. *Public Management Reform. A Comparative Analysis*. 2nd ed. Oxford University Press, Oxford.

Purcell, J. and Hutchinson, S. 2007. Front line managers as agents in the HRM performance causal chain: theory, analysis and evidence. *Human Resource Management Journal*. Vol. 17 (1) pp. 3-20.

Radnor, Z., Walley, P., Stephens, A. & Bucci, G. 2006. Evaluation of the Lean Approach to Business Management and its Use in the Public Sector. Full Report. Scottish Executive.

Radnor, Z. and Walley, P. 2008. Learning to walk before we try to run: adapting lean for the public sector. *Public Money and Management*. Vol. 28 (1) pp. 37-49.

Radnor, Z. 2010. Review of Business Process Improvement Methodologies in Public Services. Aim Research Report.

Radnor, Z. J., Holweg, M. & Waring, J. 2012. Lean in Healthcare: The Unfilled Promise? *Social Science and Medicine*. Vol. 74 (3) pp. 364–371.

Radnor, Z. and O'Mahoney, J. (2013) 'The role of management consultancy in implementing operations management in the public sector.' *International Journal of Operations & Production Management* 33 (11/12) pp.1555-1578.

- Reiner, R. 1992. Police research in the United Kingdom: a critical review, in Tonry, M and Morris, N. (eds), *Crime and Justice: A Review of Research*. Vol. 15 pp. 435-508. University of Chicago Press, Chicago, IL.
- Rich, N., Bateman, N., Esain, A., Massey, L. and Samuel, D. 2006. *Lean Evolution: Lessons from the Workplace*. Cambridge University Press, New York.
- Savage, S. 1991. Review of Mollie Weatheritt, police research, some future prospects. *The British Journal of Criminology*. Vol 31 (4) pp. 440-2
- Scarman, The Rt., The Lord 1981. *The Brixton Disorders, 10-12 April, 1981; Report of an Inquiry by Rt.Hon. The Lord Scarman, OBE*. London. HMSO.
- Shah, R. and Ward, P.T. 2007. Defining and developing measures of lean production. *Journal of Operations Management*. Vol.25 pp. 785-805.
- Skolnick, J.H. 1994. *A Sketch of the Police Officer's Working Personality. Criminal Justice in America: Theory, Practice and Policy*. Upper Saddle River, NJ: Prentice-Hall, 89-113.
- Smith, P.C. 1990. The use of performance indicators in the public sector. *Journal of the Royal Statistical Society Series A*. Vol.153 (1) pp. 53-72.
- Spottiswoode, C. 2000. *Improving Police Performance*. Public Services Productivity Panel, HM Treasury, London.
- Thanassoulis, E. 1995. Assessing police forces in England and Wales using data envelopment analysis, *European Journal of Operational Research*. Vol. 87 pp. 641-57.
- The Lord Stevens of Kirkwhelpington QPM 2013. *Policing for a Better Britain*. Report of the Independent Police Commission.
- Truss, C. 2001. Complexities and controversies in linking HRM with organisational outcomes. *Journal of Management Studies*, Vol. 10 (4) pp. 551-571

- United Nations, 2010. Challenges to and opportunities for public administration in the context of the financial and economic crisis. Economic and Social Council, E/C.16/2010/2.
- Verma, A and Gavirneni, S. 2006, Measuring police efficiency in India; an application of data envelope analysis, *Policing: An International Journal of Police Strategies & Management*, 29, pp 125-145.
- Vest, J. R. and Gamm, L.D.(2009) 'A critical review of the research literature on Six Sigma, Lean and studergroup's hardwiring excellence in the United States: the need to demonstrate and communicate the effectiveness of transformation strategies in healthcare.' *Implement Sci* 4 (1) pp.35-48.
- Waring, J. J. and Bishop. S.(2010) 'Lean healthcare: rhetoric, ritual and resistance.' *Social science & medicine* 71 (7) pp.1332-1340.
- Womack, J. & Jones, D. 1996. Lean Thinking: Banish the Waste and Create Wealth in your Organisation. New York: Simon and Schuster.
- Yin, R.K. 2009. Case Study Research, Design and Methods. Sage, London.
- Youndt, M.A.. Snell, S.A.. Dean, J.W., and Lepak, D. P. 1996. Human Resource Management, Manufacturing Strategy, and Firm Performance. *American Academy of Management Journal*. Vol. 4 pp 836-866.