

Public Confidence Modelling: A Locally Based Approach to Police Performance Management

Michael George Perkins

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University of York
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ABSTRACT

In the UK, the ability of the police to function effectively depends on the authority that they can command, rather than the force that they can deploy. It is therefore essential that police retain their image as the legitimate defenders of the British public. This can only be achieved through maintaining levels of public confidence in policing.

This thesis presents the analysis of a large-scale survey, designed to assess the perceptions of York residents towards crime, their local area, and the police. Structural Equation Modelling is used to assess the drivers of public confidence in York, and create a framework to understand the multiple interactions between the factors tested in the study, and the main dependent variable of public confidence. This framework is tested to evaluate whether there are differences within the city that affect how the public confidence framework functions.

Previous studies on the determinants of public confidence have mainly focused on locations outside the UK, used aggregated national data, or studied public confidence in large, metropolitan urban areas. No research has been carried out examining public confidence in an urban area with similar characteristics to York.

We contribute to knowledge by revealing the drivers of public confidence in the smaller urban area of York. We develop a public confidence framework that provides a holistic understanding of the nature of public confidence in York, showing that an understanding of the relationships between all factors in a public confidence model is essential if the true nature of this concept is to be understood. We demonstrate that even in a homogenous environment, differences in the overall framework of public confidence exist, depending on the perceptions people hold about their local area. Several potential strategies are presented to assist the North Yorkshire Police in improving levels of public confidence within York.

TABLE OF CONTENTS

Abstract	ii
Table of Contents	iii
Table of Tables.....	xi
Table of Figures	xiii
Acknowledgements	xiv
Author's Declaration.....	xv
Chapter 1. Introduction	1
1.1 Background	1
1.2 North Yorkshire and the City of York	2
1.3 Public Confidence in Austerity	3
1.4 Research Motivation	4
1.5 Research Goal and Questions	5
1.6 Methodology Overview	6
1.7 Research Contributions	8
1.7.1 Contributions to Knowledge	9
1.7.2 Contributions to Practice and Policy.....	9
1.7.3 Methodological Contributions	10
1.8 Conclusion and Structure of the Thesis	11
Chapter 2. Performance Measurement and Performance Management.....	14
2.1 Introduction to the Literature Review	14
2.1.1 Aims and Objectives of the Literature review	14
2.1.2 Methodology	17
2.2 Introduction to Performance Measurement and Performance Management.....	17
2.2.1 Definitions.....	18
2.2.2 Development of PMM as an Academic Discipline.....	23

2.2.3 Why Measure and Manage Performance?	24
2.3 Introduction to Performance Measurement and Management Systems (PMSs) ..	25
2.3.1 The Development of PMSs	26
2.3.2 PMS Features	27
2.3.3 Performance Management in the Public sector v Performance Management in the Private Sector	28
2.4 Performance Measurement and Management Systems in Policing	29
2.4.1 Performance Measurement and Management Systems (PMSs) Policing Literature Search	30
2.4.2 The Balanced Scorecard.....	33
2.4.3 Activity-Based Costing	37
2.5 Concluding Remarks	39
Chapter 3. Performance Measurement and Management of the Police	41
3.1 Introduction	41
3.2 Structure and Accountability of the Police Forces of England and Wales	42
3.3 Police Performance Management in England and Wales	43
3.4 Modern History of Police Performance Management and the Rise of New Public Management.....	43
3.4.1 Under the Conservative Party	44
3.4.2 Under New Labour.....	46
3.4.3 Under the Coalition	50
3.5 Who Watches the Watchers: HMIC and the Role of Public Confidence in Police Performance Measurement and Management Systems (PMSs)	52
3.5.1 Introduction.....	52
3.5.2 Current Role of HMIC	53
3.5.3 Relevant Police PMSs.....	53
3.6 Concluding Remarks.....	58

Chapter 4. Public Confidence in Policing	61
4.1 Introduction	61
4.2 The Importance of Public Confidence in Policing.....	63
4.3 The Measurement of Public Confidence in the UK.....	65
4.3.1 The British Crime Survey/Crime Survey of England and Wales	65
4.3.2 Concerns with Using BCS/CSEW Data to Measure Public Confidence	68
4.4 The Assessment of the Drivers of Public Confidence	69
4.4.1 Classification of Studies.....	69
4.4.2 Evaluation of SEM Investigations into the Drivers of Public Confidence	71
4.4.3 Summary of Public Confidence SEM Studies	77
4.5 Factors Assessed in the Research.....	80
4.5.1 Public Confidence (PCON).....	80
4.5.2 Police Dealing with Local Issues (PDEAL).....	82
4.5.3 Police and the Community (PCOM).....	83
4.5.4 Police Interactions with the Public (PINT)	84
4.5.5 Local Area Cohesion (LAC)	87
4.5.6 Local Area Problems (LAP).....	88
4.5.7 Local Area Safety (LASAFE).....	90
4.5.8 Fear of Crime (FOC).....	91
4.6 Demographic and Situational Variables.....	93
4.6.1 Summary of the Drivers of Public Confidence	94
4.7 Concluding Remarks	97
Chapter 5. Methodology.....	98
5.1 Introduction	98
5.2 Quantitative Research Strategy	98
5.3 Research Design.....	99

5.3.1 Introduction	99
5.3.2 Stage 1: Factor Development	100
5.3.3 Stage 2: Survey Design and Administration	100
5.3.4 Stage 3: Preliminary Data Analysis	100
5.3.5 Stage 4: Factor Analysis.....	101
5.3.6 Stage 5: Simple Structural Model of Public Confidence in York	101
5.3.7 Stage 6: Revised Structural Model of Public Confidence in York	101
5.3.8 Stage 7: Public Confidence Framework Testing.....	102
5.3.9 Stage 8: Research Implications	102
5.3.10 Research Design Framework	102
5.4 Research Methods	103
5.4.1 Introduction	103
5.4.2 Factor Analysis	103
5.4.3 Structural Equation Modelling	109
5.5 Concluding Remarks	112
Chapter 6. Data Collection and Preliminary Data Analysis.....	113
6.1 Introduction	113
6.2 Data Collection.....	113
6.2.1 Introduction	113
6.2.2 Survey Design and Testing Methodology.....	113
6.2.3 Scale Development.....	116
6.2.4 Survey Release	121
6.2.5 Data Protection and Data Management.....	122
6.2.6 Anonymity of Participants	122
6.2.7 Combined University of York/City of York Council Survey	123
6.3 Preliminary Data Analysis	124

6.3.1 Introduction	124
6.3.2 Survey Statistics and Data Cleansing.....	124
6.3.3 Missing Value Analysis	126
6.3.4 Outliers and Normality.....	129
6.3.5 Testing Non-Response Bias	130
6.3.6 Results of Key Survey Indicators.....	130
6.3.7 Data Weighting	131
6.4 Concluding Remarks	131
Chapter 7. Factor Analysis.....	132
7.1 Introduction	132
7.2 Exploratory Factor Analysis	132
7.2.1 Introduction	132
7.2.2 Results	133
7.2.3 Interpretation of Results and Re-Specification of Factors	137
7.3 Confirmatory Factor Analysis.....	138
7.3.1 Introduction	138
7.3.2 Preliminary Stages	139
7.3.3 Measurement Model Development	139
7.3.4 Measurement Model Testing.....	142
7.3.5 Non-Normality and Bootstrapping.....	144
7.3.6 Construct Validity: Convergent, Discriminant and Nomological Validity..	145
7.3.7 Assessment of Model Fitness by Comparison with Competing Models	149
7.3.8 Common Method Variance	150
7.4 Concluding Remarks	151
Chapter 8. The Simple Structural Model of Public Confidence In York.....	152
8.1 Introduction	152

8.2 Simple Structural Model Development.....	153
8.3 Simple Structural Model Results	155
8.4 Simple Structural Model Discussion.....	158
8.4.1 Police Influenced Factors (PIFs).....	160
8.4.2 Local Perspective Factors (LPFs)	163
8.4.3 Intermediary Factor (IF).....	165
8.5 Concluding Remarks.....	167
Chapter 9. The Revised Structural Model of Public Confidence in York	168
9.1 Introduction.....	168
9.2 Revised Structural Model Development	168
9.2.1 Links within the Local Perspective/Intermediary Factors	169
9.2.2 From the Local Perspective/Intermediary Factors to the Police Influenced Factors	170
9.2.3 Links within the Police Influenced Factors.....	172
9.3 Revised Structural Model Results.....	175
9.4 Revised Structural Model Discussion: A New Framework of Public Confidence in York	177
9.4.1 Links within the Local Perspective/Intermediary Factors	177
9.4.2 From the Local Perspective/Intermediary Factors to the Police Influenced Factors	179
9.4.3 Links within the Police Influenced Factors.....	182
9.4.4 Direct, Indirect and Total Effects present in the model	185
9.5 Concluding Remarks.....	190
9.6 Testing the Homogeneity of the New Framework of Public Confidence in York	191
9.6.1 Introduction.....	191
9.6.2 Framework Testing Development.....	192

9.6.3 Framework Testing Results	194
9.6.4 Framework Testing Discussion.....	195
9.6.5 Concluding Remarks.....	199
Chapter 10. Recommendations and Implications.....	201
10.1 Introduction.....	201
10.2 Existing Impact of the Study within York	201
10.2.1 Dedicated Council Cabinet Post.....	201
10.2.2 Improvements to Anti-Social Behaviour Strategies.....	201
10.2.3 Strengthened Collaborations	202
10.3 Recommended Changes to Policy and Practice within York.....	203
10.3.1 Increased Police Visibility	203
10.3.2 Continued Focus on Reassurance, Neighbourhood and Community Policing	204
10.3.3 Improved Communication from the Police.....	205
10.3.4 Improving the Interactions between the Police and the Public.....	207
10.3.5 Homogeneity of Policing Operations.....	209
10.3.6 The use of Geographical Information Systems (GIS) Technology.....	210
10.3.7 Influencing the Local Perspective Factors	211
10.4 Implications for the Performance Measurement and Management of the North Yorkshire Police.....	212
10.5 Concluding Remarks.....	215
Chapter 11. Conclusions	218
11.1 Introduction.....	218
11.2 Chapter Revisit.....	219
11.3 Research Contributions	222
11.3.1 Contributions to Knowledge and Academic Debate.....	222
11.3.2 Contributions to Practice and Policy.....	226

11.3.3 Methodological Contributions	227
11.4 Limitations of Research	229
11.4.1 Potential Sample bias	229
11.4.2 Cross-Sectional Nature of the Survey and SEM Causality	230
11.4.3 Unexplored Factors	231
11.4.4 Fluidity of Public Confidence Terms	232
11.5 Future Research Directions	233
11.5.1 Inclusion/Exclusion of Factors	233
11.5.1 Utilisation of Other Data Sources	234
11.5.2 Wider Applicability of the Revised Structural Model	235
11.6 What Next for the Role of Public Confidence in Police PMM?	236
Appendix A: Previous SEM Models of Public Confidence	238
Appendix B: Copy of Survey	243
Appendix C: Original Factor/Variable Key	256
Appendix D: Complete Factor/Variable Key for SEM	261
Appendix E: Operation Spoke Invitation	263
Appendix F: Press Release 1	264
Appendix G: Press Release 2	266
Appendix H: Weighting Calculations	268
Appendix I: Ward Perception Calculations	270
Definitions	272
List of References	274

TABLE OF TABLES

Table 1 General Inclusion/Exclusion Criteria.....	17
Table 2 Performance Management and Performance Measurement Inclusion and Exclusion Criteria.....	18
Table 3 Criticisms of Traditional PMM Measures	27
Table 4 Search Protocol for Performance Measurement and Management Systems	30
Table 5 PMS Literature Survey Results.....	32
Table 6 Summary of Balanced Scorecard Implementations in the police	35
Table 7 Search Strategy and Protocol for England and Wales Police PMM.....	41
Table 8 Search Strategy and Protocol for Public Confidence literature	62
Table 9 Summary of Public Confidence Modelling Studies.....	79
Table 10 Public Confidence Factor Summary	97
Table 11 GOF Indices	108
Table 12 Survey Development and Testing	114
Table 13 Number of Responses per Distribution Channel.....	125
Table 14 Operation Spoke Mailing Statistics.....	126
Table 15 Cronbach Alpha Values	133
Table 16 EFA Results	136
Table 17 Revised Cronbach Alpha Values	138
Table 18 Model Fit Indices	143
Table 19 Bootstrapped Standardised Regression Weights and Standard Errors.....	146
Table 20 Validity and Reliability Table.....	147
Table 21 Correlation and SIC Estimates for Constructs	148
Table 22 Inter-Factor Correlations.....	149
Table 23 Comparison with Competing Models	150
Table 24 Construct Information	153

Table 25 Comparison of Model Fit Indices	156
Table 26 Simple Structural Model Path Estimates	158
Table 27 Factor Groupings.....	160
Table 28 Comparison of Model Fit Indices for the Revised Structural Model of Public Confidence	176
Table 29 Bootstrapped Path Estimates of the Revised Structural Model	177
Table 30 Direct Standardised Effects of the Revised Structural Model	186
Table 31 Indirect Standardised Effects of the Revised Structural Model.....	187
Table 32 Total Standardised Effects of the Revised Structural Model.....	188
Table 33 Comparison of the Implied Ordering of Factor Importance	189
Table 34 Public Confidence Framework Testing: Revised Structural Model	195
Table 35 Behaviours to be Discouraged/Encouraged in Police-Public Interactions.....	209

TABLE OF FIGURES

Figure 1 Methodological Framework.....	8
Figure 2 Literature Review Framework.....	16
Figure 3 Policing Performance Assessment Framework. Source: Police Standards Unit and Home Office, (2004) p.6	55
Figure 4 AsPACS Framework. Source: Home Office (2007a) p.17.....	57
Figure 5 Research Design Framework.....	103
Figure 6 CFA Measurement Model Path Diagram	106
Figure 7 SEM Structural Model Path Diagram.....	110
Figure 8 Missing Value Analysis	127
Figure 9 Missing Value Patterns	128
Figure 10 Scree Plot.....	134
Figure 11 Proposed Measurement Model	141
Figure 12 Simple Structural Model of Public Confidence.....	155
Figure 13 Revised Structural Model of Public Confidence in York.....	173
Figure 14 Dukes and Portillos (2009) Model 1. Source: <i>ibid.</i> p. 307	238
Figure 15 Dukes and Portillos (2009) Model 2. Source: <i>ibid.</i> p. 309	238
Figure 16 Hinds and Murphy (2007) Structural Model. Source: <i>ibid.</i> p. 34.....	239
Figure 17 Jackson and Sunshine (2007) Model 1. Source: <i>ibid.</i> p. 225.....	240
Figure 18 Jackson and Sunshine (2007) Model 2. Source: <i>ibid.</i> p. 227.....	240
Figure 19 Jackson and Bradford (2009) Model 1. Source: <i>ibid.</i> p. 504.....	241
Figure 20 Jackson and Bradford (2009) Model 2. Source: <i>ibid.</i> p. 506.....	241
Figure 21 Jackson et al. (2009) Structural Model. Source: <i>ibid.</i> p. 1762.....	242
Figure 22 Jackson and Bradford (2010) Structural Model. Source: <i>ibid.</i> p. 246	242

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AUTHOR'S DECLARATION

I hereby declare that this thesis entitled 'Public Confidence Modelling: A Locally Based Approach to Police Performance Management' represents the results of my own work except where specified in the thesis.

Michael George Perkins

CHAPTER 1. INTRODUCTION

1.1 Background

Public confidence is a concept that underpins the entire system of policing in the United Kingdom. If the public lose confidence in the police, their ability to maintain public order will be diminished, which could have potentially disastrous consequences on a national scale. As the police of England and Wales depend on the authority that they can command, rather than the force that they can deploy as a final resort (Hough, 2003), it is therefore essential for public order that the police do everything in their power to maintain their image as the legitimate defenders of the British public.

Unfortunately, police forces are constantly at risk of losing public confidence, due to a range of factors including falling levels of police visibility (Sindall and Sturgis, 2013), dissatisfaction with the handling of public-police interactions (McCluskey, Mastrofski and Parks, 1999; Sunshine and Tyler, 2003b; Skogan, 2006), and the misapplication of police powers (Dunleavy and Hood, 1994). As it is recognized in the context of public confidence that trust is easier to lose than to gain (Brown and Evans, 2009), a key challenge faced by police forces is trying to discover evidence-based, front line policing tactics that can maintain or improve public confidence, in order that these risks can be mitigated.

Whilst working with the North Yorkshire Police (NYP) on process improvement projects, the importance of integrating public confidence into policing activities was constantly discussed, as it was the sole, top-down target in place at the start of this research. The NYP, like most police forces in England and Wales, was wary of the wide range of frameworks and models that have been used to monitor the performance of the police (see Chapter 3), but were also keen to know about the factors that affect public confidence. This was partly due to a desire to achieve targets, but also because the risk of not understanding public confidence could result in the lack of public support to the NYP.

Whilst the importance of public confidence in the national police Performance Measurement and Management (PMM) strategy was reduced when the Coalition government came to power in 2010 (see section 3.4.3), more recently, the role of public

Chapter 1. Introduction

confidence in the local PMM plans of a number of police forces of England and Wales is growing. This is due to the influence of the Police and Crime Commissioners (PCCs) (elected in November 2012), seeking to ensure that residents are confident in all aspects of the work of their local police forces. As a result of the publication of the Police and Crime plan published by the PCC for North Yorkshire, increasing public confidence has been established as a key goal over the period 2013-2017 (Mulligan, 2013a), therefore placing public confidence firmly on the performance management agenda for the NYP over the next four years.

The collaborating police force, along with most UK police forces, does not currently focus on structuring their front line policing using any established analysis that boosts public confidence, therefore, the NYP wishes to support a research programme designed to model the policing factors that affect public confidence in a resource-constrained environment. In order to maximise the potential benefits of this research, it was decided that the focus of the project would be the city of York, the main urban area in the county of North Yorkshire.

1.2 North Yorkshire and the City of York

The North Yorkshire Police were established in 1974 under the 1972 Local Government Act (Great Britain, 1972). They are the police force responsible for the Police Force Area (PFA) of North Yorkshire, which encompasses the county of North Yorkshire, as well as the unitary authority of York. Of the 43 police forces of England and Wales, the PFA of North Yorkshire covers the largest area by size. However, with the exception of York, the majority of this area is rural, with a low population density. The area currently has the lowest recorded crime rates of all police forces in England and achieved a drop of 8% in recorded crime figures over the period 2012/2013 (Mulligan, 2013b).

The unitary authority of York is the major population centre of North Yorkshire with a population of 198, 000 residents from a North Yorkshire total of 796, 000 (Office for National Statistics, 2011). In terms of comparison, this makes York the 86th largest local authority in England (Office for National Statistics, 2012b). Despite its relatively small size, the city is ranked as the fourth best performing economy of 64 UK cities, and scores highly for overall levels of employment, education and health (City of York Council, 2013b). Covered by its own Safer Neighbourhood Command policing district,

the urban area of York provides a contrast to the rural remainder of the county and this has clear implications for policing activities in the county. Because of the potential differences in both the policing strategies and the priorities of residents in these two different areas, a study examining the drivers of public confidence in North Yorkshire as a whole would provide results that would likely not prove useful to either area. In order to maximise the potential of the research, the focus of this study was therefore chosen to be the city of York.

1.3 Public Confidence in Austerity

The 2010 Comprehensive Spending Review (HM Treasury, 2010) unveiled major cuts for public sector bodies, including the police service. In real terms, these cuts amount to a 20% reduction in funding over the four-year period from 2010 to 2014. (HM Treasury, 2010). Whilst the Coalition government has claimed that a reduction in the police budget will not necessarily mean a reduction in the number of front-line officers, (Cameron, 2011) this has been challenged. Her Majesty's Inspectorate of Constabulary (HMIC) estimates that these funding cuts will result in a total reduction in police force numbers (including officers, staff and Police Community Support Officers (PCSOs)) of 34,100 over the period March 2010-March 2015 (HMIC, 2011a).

The severity of these cuts has meant that police forces must attempt to retain front-line services with a real term funding gap. The need for forces to operate with greater efficiencies has therefore increased, and their ability to provide improvements in service, despite these funding cuts, is being assessed by HMIC through Value For Money assessments (Home Office , Association of Chief Police Officers and Association of Police Authorities, 2010.) in addition to the normal system of external force monitoring (see section 3.5.2). These cuts mean that forces need to make significant efficiency and performance gains in order to avoid cutting front line services whilst retaining police visibility; a key driver of public confidence. Even if forces are able to retain police visibility through organisational efficiencies, Sindall and Sturgis (2013) argue that any cuts in police numbers are still likely to lead to erosions in public confidence.

Therefore, a full understanding of how public confidence can be improved through other areas is essential to forces, as it will help ensure that any erosions in confidence

due to falling police numbers and reduced visibility are offset by the introduction of new strategies and operations aimed at increasing public confidence in other ways. The present research aims to enable this, by showing how the North Yorkshire Police can influence other factors that have an effect on public confidence. By assessing which factors have the largest influence on public confidence, and also examining how they affect each other, we can show the NYP operating in York where their efforts may result in the largest outputs in terms of rises in confidence. This will therefore assist them in achieving the spending cuts that are now a reality of the current landscape of police PMM, whilst at the same time retaining public confidence.

The need to consider citizen evaluations of services as part of an overall PMM strategy has long been recognised, with Percy (1986) cautioning that abandoning such measures could lead to significant costs in terms of reduced responsiveness to the public. We show in Chapter 3, how public confidence has been a consistent thread of police PMM in recent history, and that its importance as a local measure of importance is becoming even more prominent. In the current climate of austerity in policing, recognising the importance of public opinion in both the quality and the efficiency of the services that forces provide will continue to be critical if increases in public confidence are to be obtained.

1.4 Research Motivation

This study approaches public confidence from a performance management perspective (see Chapter 2); taking the view that, as the most stable performance indicator used in police PMM (see Chapter 3), the accurate measurement and understanding of the drivers behind this ephemeral concept (see Chapter 4) are extremely important, if improvements in public confidence levels are to be achieved.

Whilst a large number of factors have been previously evidenced as having an effect on public confidence (see Table 10), studies examining the simultaneous effects of these factors on public confidence are limited to those evaluated in section 4.4. Whilst all of these studies have examined public confidence using a similar methodology as the present study, several of these studies are based on data collected from countries outside of the UK (Hinds and Murphy, 2007; Dukes, Portillo and Miles, 2009). According to Kautt (2011), the empirical research on public confidence in the UK is limited.

Therefore, more research is required in the UK to establish both the key drivers of public confidence in smaller urban environments, and a more holistic understanding of these issues, as transferring public confidence policy and practice to the UK from other countries is risky, given the differences in national contexts (Kautt, 2011).

Furthermore, previous information available to the NYP on confidence issues has been limited to the overall confidence figures provided by the British Crime Survey/Crime Survey of England and Wales (see section 4.3) or force-wide Public Attitudes Surveys¹. This has meant that there is currently no appropriate evidence available suggesting how to improve public confidence in areas such as York.

This dearth of information has led to a degree of uncertainty within the NYP as to whether past evidence on the factors affecting public confidence is relevant to York. If public confidence has not been previously assessed in detail in an area similar to York, how can the initiatives and operations designed to improve confidence based upon this past evidence be trusted? Given the increasingly critical eye being cast on police spending, police managers must be confident that any expenditure on public confidence activities will be both effective and cost-efficient before allowing this to take place.

1.5 Research Goal and Questions

Based upon this gap in the literature, the current problems faced by the NYP and the current landscape of policing in austerity that they are operating in; the overall goal of the research is:

“To better understand how national and international public confidence factors can be adopted within a local policing framework with the intention of improving public confidence”.

Based upon this overall goal, four specific research questions have been developed in order to achieve this goal. The specific questions that will be addressed in the research are as follows:

¹ The last NYP Public Attitude Survey was carried out in 2010 by an external surveying company on behalf of NYP. Budget restrictions have meant that this has not been repeated.

Chapter 1. Introduction

1. *What are the factors that most affect people's levels of public confidence in the police in York?*
2. *How do these factors interact with each other to form an explanatory framework of public confidence in York?*
3. *Is the framework of public confidence homogenous throughout York?*
4. *How can public confidence in the police in York be improved?*

Understanding the most influential drivers of public confidence in York, and developing appropriate initiatives in order to improve this would be highly beneficial for the North Yorkshire Police operating in York. In addition, having an understanding as to *where* in York these initiatives would be most successful will allow the NYP to improve the public's perceptions of the services they provide, in the most cost efficient way possible. As well as the benefits gained from increased public confidence of the public they serve, this will also demonstrate to HMIC that the force is attempting to improve its services during austerity during Value For Money audits.

This increased knowledge of public confidence will allow the NYP to focus their PMM activities around this extremely important target, which has seen an increase in focus after falling to the sidelines since the Coalition government was elected in 2010.

1.6 Methodology Overview

In order to answer the research questions detailed above, a robust methodology that could be both general enough to assist in understanding public confidence throughout York, but detailed enough that any initiatives or operations could be adapted to local areas if necessary was required. A quantitative based methodology is therefore preferred over a qualitative one. As we wished to examine the effects of a number of different factors on public confidence, and at the same time, examine the interactions between these factors, we decided to use Structural Equation Modelling (SEM) in order to analyse the underlying factors affecting Public Confidence in the police of York. Structural Equation Modelling is:

“...a technique to specify, estimate, and evaluate models of linear relationships among a set of observed variables in terms of a generally smaller number of unobserved variables” (Shah & Goldstein, 2006, p. 149)

Chapter 1. Introduction

SEM is a form of multi-linear regression modelling, which allows for the simultaneous examination of relationships between multiple factors, whilst also accounting for error in the measurement instrument. It also allows for an assessment of the directional relationships between hypothetical constructs that cannot be measured directly, by examining the relationships between all measured items that act as indicators of the underlying constructs. SEM is examined in more detail in section 5.4.3

This research uses SEM to explore the impact of a number of different factors on the public confidence situation in York. Two structural models aimed at exploring public confidence in York are produced. The first is named the simple structural model, as it seeks only to explore the direct drivers of public confidence in York without considering any confounding effects of the other factors in the study. The second model is named the revised structural model, as it seeks to explore public confidence in York in a more holistic manner by examining how each of the factors interact with each other to affect public confidence. The factors that will be used to explore public confidence in the study are listed below. These factors are introduced in section 4.5, and are explored in detail in Chapter 8.

1. Police Dealing with local concerns (PDEAL): Whether York residents believe the police are dealing with the issues that matter in York.
2. Police and the Community (PCOM): Whether York residents believe the police are engaging with their community.
3. Police Interactions with the public (PINT): The perceived quality of interactions between the police and the public in York.
4. Fear of Crime (FOC): York residents' worry about specific crimes occurring to them.
5. Local Area Problems (LAP): The perceptions that York residents hold about the problems that exist in their local area.
6. Local Area Cohesion (LAC): The perceptions that York residents hold regarding the social cohesiveness of their local area.
7. Local Area Safety (LASAFE): How safe York residents perceive their local area to be.

Before these factors can be assessed in a structural model, a number of steps must be carried out to ensure that any results gained are both representative of the overall population of York, and are methodologically valid. The methodological framework of the research, which includes all of these steps, is shown in Figure 1.

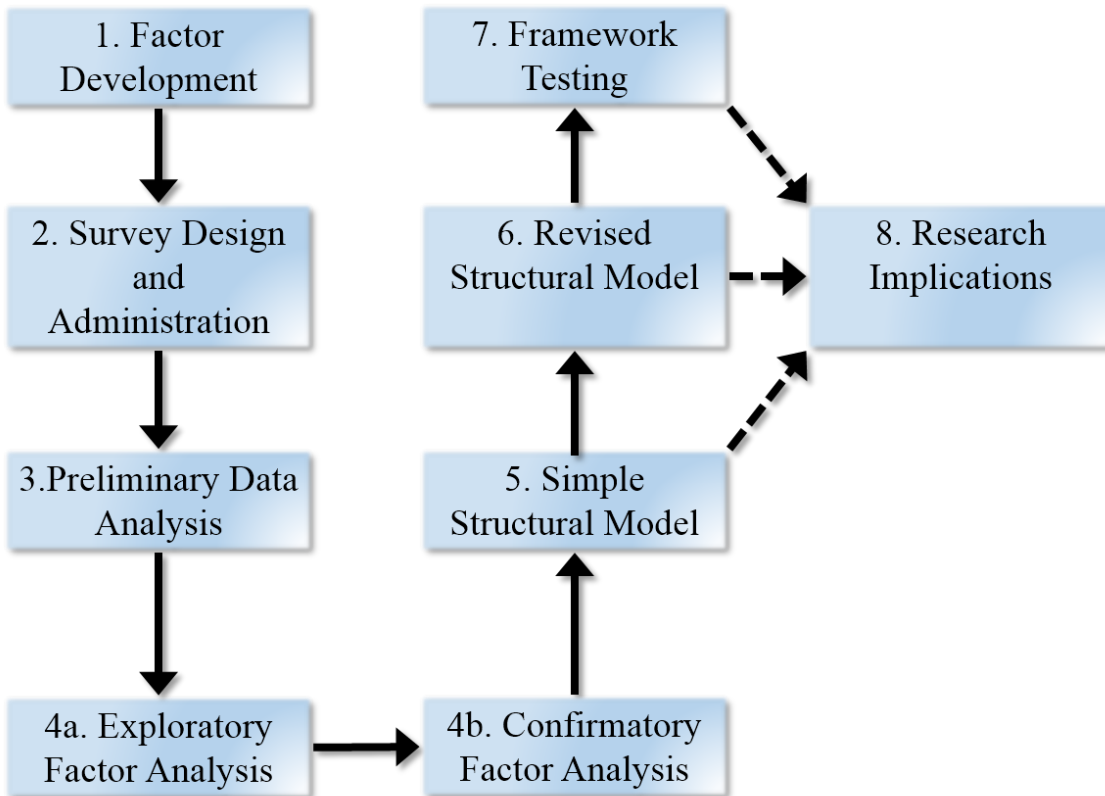


Figure 1 Methodological Framework

This multi-step methodology is designed to provide evidence-based recommendations to the NYP and other community safety bodies about how best to improve public confidence in York. It shows the different stages that are performed during the research to ensure that these recommendations are methodologically sound and can be implemented with confidence. These stages are discussed in detail in section 5.3.

1.7 Research Contributions

According to Jackson and Bradford (2009), “*there is a pressing need to systematically assess what drives public confidence in policing*” (p. 599) which has still not been fully assessed in the public confidence literature. Whilst a large number of factors have been previously evidenced as having an effect on public confidence (see Table 10), studies

modelling the simultaneous effects of these factors on public confidence are limited. Achieving the overall research goal, and answering the research questions above, will allow us to contribute to knowledge, practice, and methodology. These contributions are briefly outlined below and are discussed in detail in section 11.3.

1.7.1 Contributions to Knowledge

Although a large number of factors have previously been shown to affect public confidence (see Table 10), no studies have been carried out in the UK that have examined public confidence in a British city with similar demographic characteristics and population to York. We therefore offer our first major contribution to the literature by filling this research gap in examining the drivers of public confidence in the urban area of York. We enhance this contribution by developing a public confidence framework that gives a holistic view of the relationships between the factors affecting public confidence in York, and allows the total effects of any factor on public confidence to be tested. In addition, by testing the proposed framework to see whether it is stable across the city, we can see whether public confidence operates differently across the city and if so, whether different policing styles are required according to neighbourhood characteristics. In fulfilling these research gaps, we challenge previous models of public confidence and reveal the true drivers of public confidence in York.

1.7.2 Contributions to Practice and Policy

The SEM models developed throughout this study are used to develop a new framework of public confidence in York, encompassing a wider range of factors than has been explored in previous studies. This framework can be utilised by the North Yorkshire Police in order to understand public confidence in the city of York in a more nuanced manner than ever before; by understanding both the factors that affect overall public confidence, and the specific interactions between these factors.

Instead of being forced to rely on evidence that has been developed based upon areas with a vastly differing socio-demographic make-up to York, decision makers and police managers will be able to exploit more locationally relevant evidence. This will enable the creation of policies or interventions designed to improve public confidence that can be tailored specifically to the unique characteristics of York, which will hopefully enhance

Chapter 1. Introduction

multi-agency working and lead to an improvement of public confidence in the city of York. Section 10.3 discusses these possible initiatives and strategies.

By testing the homogeneity of the revised structural model of public confidence in York, we can see whether residents in different types of wards may react differently to certain styles of policing or neighbourhood changes. According to Williamson et al., (2006):

“The failure to take neighbourhood context into consideration in recent decades in criminological research has resulted in findings at a level of generality that may have limited relevance to practitioners and the residents in particular neighbourhoods.”(p. 207)

In addressing this issue, we allow the NYP the potential to adapt their policing styles based upon the specific characteristics of each local area. In doing so, “...*officers will be freed from a “one-size-fits-all” model of policing*” (Hawdon, 2008, p. 198) and police managers can design effective, and therefore more cost-effective initiatives to improve public confidence in York.

Answering the research questions discussed above will not only prove beneficial to stakeholders in York, but, if differences in the drivers of confidence are found, this will also provide valuable evidence to support the development of new, evidence-based policing initiatives aimed at improving public confidence in the police both throughout the U.K, and further afield.

1.7.3 Methodological Contributions

Rather than relying on a single “overall” indicator of confidence as has been used in past examinations of confidence (see section 4.4), this study uses a multi-item factor in order to assess public confidence. By including measures of perceived police reliability in the factor construction, we give a more balanced view of public confidence by taking into account its multifaceted nature, whilst also allowing for an assessment of measurement error. By avoiding the use of single-item factors in our structural models, we can examine a broad range of items per factor, and therefore gain a holistic and methodologically sound assessment of public confidence in York.

1.8 Conclusion and Structure of the Thesis

This chapter has introduced the research by setting out the background to the project, examining why the effective management of public confidence in policing is important, and discussing the problem situation faced by the NYP. The research goal and questions of the project, and an introduction to the methods used to achieve these goals have been discussed. The current gaps in the literature are identified, and the expected contributions to knowledge, practice, and methodology are examined. The remainder of the thesis is structured as follows.

Chapter 2 outlines the importance of performance measurement and performance management (PMM) in general. After an examination of why it is important to measure and manage performance, and PMM definitions are provided, we present the results of a literature survey on the Performance Measurement and Management Systems (PMSs) that have been evidenced in police forces both worldwide, and in the UK.

Chapter 3 focuses the literature review on the performance measurement and management of the police in England and Wales. A brief overview on how the police forces of England and Wales are structured is given, followed by a discussion on the history and development of police performance management in England and Wales, as well as an examination of the specifics of how police PMM is achieved.

Chapter 4 delves into the specifics of public confidence. We assess why this issue is so important to modern policing work, show how it has been measured in the past, and provide a critical analysis of past attempts to model public confidence in various settings. From a literature review of the available evidence, we examine the drivers of public confidence, and develop the eight factors of public confidence that are assessed in the structural models. These factors are arranged into groupings depending on their key characteristics.

Chapter 5 provides the details of the research strategy taken in this study, the particulars of the research design, and the specific research methods that have been selected to explore the data. The justification for the choice of a quantitative research strategy is provided, and the research design, based upon a Structural Equation Modelling (SEM) methodology is discussed. The specific research methods of Exploratory Factor

Chapter 1. Introduction

Analysis (EFA), Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM) are analysed.

Chapter 6 is structured in two sections. The first section discusses the data collection procedure in detail; including the design of the survey measurement instrument, the specific procedures of data collection and issues surrounding data protection and management. The second section explores the preliminary data analysis procedures performed prior to the use of SEM to analyse the factors being explored. This includes data cleansing processes and statistical examination of the data to ensure accurate results in the later stages of analysis.

Chapter 7 details the specific processes of how Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) is used to explore the relationships between the variables in the study, assign these variables to appropriate factors, and then test the relationships between these factors, prior to the Structural Modelling component of SEM.

Chapter 8 presents the development and discussion of the simple structural model of public confidence in York, designed to answer research question one: *“What are the factors that most affect people’s levels of public confidence in the police in York?”* To achieve this, a model is developed where the Public Confidence factor “PCON” is the only endogenous, dependent variable in the model, and all other factors become independent exogenous variables.

Chapter 8 presents the development, discussion, and testing of the revised structural model of public confidence in York, in order to answer the second research question: *“How do these factors interact with each other to form an explanatory framework of public confidence in York?”*. The results of the simple structural model are used to assist in developing a theory driven framework of public confidence, to enable a more holistic understanding of public confidence by examining all of the relationships between the various factors explored in the study. This allows us to assess not only the direct effects that the PIFs exert on PCON, but also the indirect and total effects that all of the factors exert as well. This revised structural model is tested in order to answer research question three: *“Is the framework of public confidence homogenous throughout York?”*.

Chapter 1. Introduction

Chapter 10 examines the implications of this work in order to answer research question four: “*How can public confidence in the police in York be improved?*”. It shows the existing impact of the research on community safety bodies in York, provides recommendations of possible initiatives the North Yorkshire Police could implement if they are interested in improving levels of public confidence in York, and examines the possible implications the research has for the performance measurement and performance management policies of the NYP.

Chapter 11 concludes the thesis. A summary of the work is provided, and the contributions the research has made to theory, practice and methodology are examined. The limitations of the research are addressed, including those specific to the present study, and the more general limitations of SEM studies of public confidence in general. Finally, some potential avenues for further research investigating public confidence are identified.

We have briefly discussed the role that public confidence plays in the PMM of the police, both nationally, and locally. In order to understand this fully, we now examine the concepts of performance measurement and performance management in more detail.

CHAPTER 2. PERFORMANCE MEASUREMENT AND PERFORMANCE MANAGEMENT

This chapter first discusses the framework and the methodology for the literature review. It then introduces the field of Performance Management and Performance Measurement (PMM) by examining the history of PMM as an academic field, proposing definitions and assessing why effective PMM is so important to organizations. The development of Performance Measurement and Management Systems (PMSs) is presented alongside the reasons they are important. Those PMSs that have been applied in the context of UK police forces are assessed.

2.1 Introduction to the Literature Review

This section will discuss the aims and objectives of the review, the strategy and protocols used to conduct the initial review and the sources that are utilised. By conducting a thorough and effective literature search, the background to the research questions and objectives can be more fully understood and the study developed appropriately.

Petticrew and Roberts (2008) state that; *"the aim of a literature search is not to retrieve everything, but to retrieve everything of relevance while leaving behind the irrelevant"* (2008, p. 81). Therefore, the final aim for a literature review would be to ensure that it is comprehensive enough to sufficiently inform the research design, but also relevant enough to ensure a strong focus on the research questions and avoid irrelevant information.

By ensuring an appropriate balance of "sensitivity" (retrieving a high proportion of relevant studies) and "specificity" (retrieving a low proportion of irrelevant studies) in the search strategy, the literature review can then be used as a strong base on which to design an appropriate methodology for answering the research questions.

2.1.1 Aims and Objectives of the Literature review

The present study of public confidence in the city of York is examined through the lens of performance measurement and performance management. We take the perspective that as a key element of the policing PMM landscape, both as a performance indicator

Chapter 2. Performance Measurement and Performance Management

and as part of numerous Performance Measurement and Management System (PMSs), the understanding of public confidence, and the drivers that affect it, are essential in order to effectively manage the performance of the North Yorkshire Police.

In order that we can examine public confidence from this perspective, we must examine a broad range of literature in order to gain an overall understanding of PMM, which can then be used to examine the specifics of public confidence. Therefore, the aims and objectives of the literature review are as follows:

- Conduct a preliminary background review of the general field of Performance Management and Performance Measurement (Chapter 2).
- Examine the specifics of PMM in the police of England and Wales and evaluate the use of public confidence as a performance measure (Chapter 3).
- Examine public confidence, the focus of the study in more detail (Chapter 4)

These aims and objectives have been compiled in a literature review framework, which illustrates how the review begins in a broad fashion, and develops to become more specific through the following three chapters. This framework is shown in Figure 2.

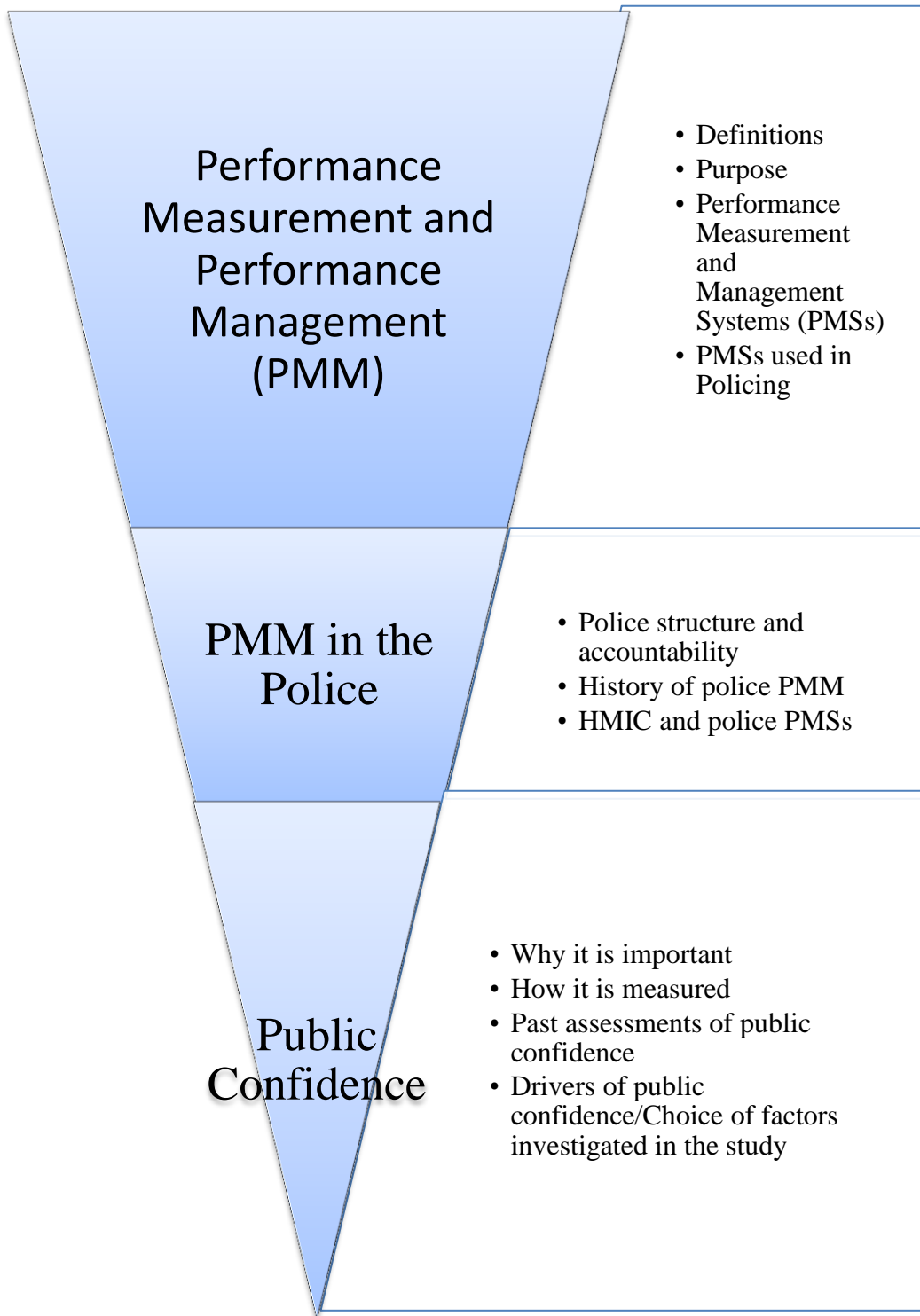


Figure 2 Literature Review Framework

2.1.2 Methodology

We now present a methodology to allow us to achieve the goals of the literature review. Electronic searches using a variety of bibliographic databases form the main methodology of the literature review. These searches examine keywords, but also use "natural language" to allow for inconsistencies in indexing practices across bibliographic databases as advocated by Sheaff, Schofield, Mannion et al. (2003).

Due to the broad area of the literature being searched, individual search strategies and protocols need to be designed for each chapter of the review. Boolean logic will be used when defining the databases search strings to ensure that a thorough search of the appropriate databases can be conducted. These individual search strategies are shown at the beginning of each section of the literature review in the following format:

Criteria	Included	Excluded
Sources		
Keyword searches		
Time Frame		
Journal Area		
Study Design(qualitative/quantitative)		

Table 1 General Inclusion/Exclusion Criteria

2.2 Introduction to Performance Measurement and Performance Management

In this section, we provide context to the present study of public confidence by introducing the field of performance measurement and performance management. This is achieved by providing definitions of performance terms to be used throughout the thesis, understanding why it is important for organisations as a whole to measure and manage performance effectively, and examining the use of Performance Management systems (PMSs) in policing.

Please see Table 2 for the search strategy for the Performance Measurement and Management literature survey:

Criteria	Included	Excluded
Sources	Academic and scholarly journals Conference papers Reports Press articles Magazines	None
Keyword searches	Performance AND Measurement/Management Performance Measurement AND Performance Management Performance Management/Measurement AND Review Performance Management/Measurement AND Development/Performance	
Time Frame	All	None
Journal Area	All	None
Study Design (qualitative/quantitative)	All	None

Table 2 Performance Management and Performance Measurement Inclusion and Exclusion Criteria

To provide a solid background for the literature survey and to ensure that performance management and performance measurement are discussed in the most suitable context, the Inclusion/Exclusion criteria which are used as a starting point are very broad and do not exclude non-scholarly articles initially.

2.2.1 Definitions

In order to understand the extant literature on performance management and performance measurement, we must first define some key terms.

2.2.1.1 Performance

Firstly, we need to understand what is meant by "performance". There are few agreed definitions on what the word really means (Lebas, 1995), however for the purpose of defining performance measurement and performance management, we use the following definition, adapted from Lebas (1995): *"The ability of a business unit to achieve its full capability, either in the past, present or future"*.

This definition gives us the freedom to discuss performance measurement and performance management in the context of its past development, its current state of play and the possibilities that the future holds for the field.

2.2.1.2 Performance Management

As will be shown, performance management is inextricably linked to performance measurement, therefore to try to consider one without taking into account of the other will lead to confusion. Lebas (1995) claimed:

"Performance management is a philosophy which is supported by performance measurement... performance management precedes and follows performance measurement, in a virtuous spiral and performance management creates the context for measurement. Thus any attempt at separating the two processes is bound to be in vain."
(p. 34)

Although it is true to state that the two definitions are linked, by considering the activities involved within the two processes we can begin to separate them. Due to the wide spread of performance management literature across several disciplines, including Operations Management, Management Accounting, Human Resource Management and Strategy Management, the boundaries of what is and what is not involved in performance management become blurred.

Because of this blurring of boundaries, the activities involved within performance management are numerous. These activities will generally include the planning and execution of actions required to enable an organisation to achieve its performance goals.

Performance management can therefore involve the effective control and management of any of the activities listed below.

- Performance Measurement
- Training
- Strategy
- Team work
- Dialogue
- Management style
- Attitudes
- Shared visions
- Employee Involvement
- Incentives and Rewards
- Leadership
- Decision making
- Innovation
- Risk-taking

Chapter 2. Performance Measurement and Performance Management

It is clear that the breadth of these activities is extremely diverse and this list is not intended to be exhaustive. Examining this list of activities shows that performance measurement is only one part of the whole activity of performance management. This is shown in the definition of performance management from the Improvement Development Agency's Glossary of Performance Terms:

"As well as involving performance measurement, systems and processes, performance management is about managing people and 'the way people within an organisation operate and work together'. Issues such as leadership, decision making, involving others, motivation, encouraging innovation, and risk taking are just as important to bring about improvement" (Improvement Development Agency, 2003).

This definition highlights the broad nature of performance management and hints at the challenges faced by defining the "context free"² nature of the process. As academic research is generally conducted within the "context specific" nature of functional subject areas, it could be the case that this multi-disciplinarity is actually harmful in terms of developing an overarching definition. Indeed, it has been suggested that the split of researchers across multiple function areas is one of the hindrances towards developments in the field of performance measurement (Neely, 1999; Marr and Schiuma, 2003).

The combination of the reasons discussed above means there is little agreement as to the general meaning of the term "performance management", or its correct use. Because of this lack of clarity in the literature, we propose a more encompassing definition of performance management to be used throughout this thesis based upon the concepts mentioned above. In the broadest sense of the term, we describe performance management as *"any activity that is involved with controlling, altering or improving the ability of a business unit to achieve its full capability"*.

This definition allows us to take a more encompassing perspective on performance management by defining anything being done to control performance in an organisation

² See Blair and Hunt (1986)

is a form of performance management. Inextricably linked to this, is the concept of performance measurement.

2.2.1.3 Performance Measurement

A classic definition of performance measurement is given by Neely, Gregory and Platts (1995) who define performance measurement as “...*the process of quantifying the efficiency and effectiveness of action*” (p. 80). They elaborate on this explanation by describing performance measurement as three inter-related elements:

- the individual performance measures that are recorded;
- the combination of those individual measures into a Performance Measurement System (PMS);
- the relationships between the PMS and the operating environment

This definition emphasises the fact that performance measurements and metrics cannot be studied or developed in isolation and must be considered within a reference framework against which the measures can be judged (Bourne, Neely, Mills et al., 2003). Other authors (Ittner and Larcker, 1990; Otley, 1999) have extended the term performance measurement to include strategy development; however, we feel that this activity is more closely aligned with the overarching process of performance management. Because the above definition by Neely et al. does not fully describe the role that performance measurement has in the overall goal of performance management, we propose a new definition of performance measurement that we will use throughout the thesis:

"...a performance management process to quantify the efficiency and effectiveness of actions in order that they can be controlled"

This definition highlights the role of performance measurement in the overall framework of performance management, and shows the need for some ability to be able to learn from historic measurements and adapt, in order that future measures can be altered if necessary.

2.2.1.4 Performance Measurement System (PMS)

In order to pursue the activity of performance measurement, there must be some form of framework or model containing the individual measures. (Neely et al., 1995) These models or frameworks are known as (Business) Performance Measurement Systems (PMSs). Once again, there is no clear agreement as to a definition of PMS. In a systematic review of PMS definitions, 17 conflicting definitions were found (Franco-Santos, Kennerley, Micheli et al., 2007). This lack of agreement creates confusion in the literature and reduces the generalisability and comparability of research in the field (Franco-Santos et al., 2007).

For this paper, an operations and strategy perspective would be most useful; therefore, the following definition will be used. A Performance Measurement System is:

"...a multi-dimensional set of performance measures or metrics at the heart of the performance management process, used to quantify performance, aid strategic planning and assist managers in decision making" (Developed from the definitions proposed by Bittici, Carrue and McDevitt (1997), Bourne and Neely (2003) and Ittner, Larcker and Randall (2003).

As shown in section 2.3, there are many PMS's in common use. This variety makes the creation of a single definition a difficult task as it will always fail to capture some element of the individual PMS it is describing. Franco-Santos et al. (2007) argue: *"the only necessary role is the use of BPM Systems to "measure performance"*" (p. 797). This is therefore the key aspect to consider when discussing PMS's within the wider context of performance management.

2.2.1.5 Summary

From the examination of the literature, it is obvious that there is no sole consensus as to the definitions and understanding of the various aspects of performance measurement and performance measurement. Indeed, De Nahlik (2008) claims that there are limits to the extent that a "unified theory" of performance management can be developed. We must therefore take utmost care when discussing PMS's in order to ensure that what is meant, and what is understood are the same thing.

This lack of consensus in the definition of the basic terms used highlights the uncertainty faced by researchers when discussing performance management and performance measurement across disciplinary functional areas. Holloway (2009) further makes this point when she calls for a "*genuine shared language*" (p. 399) in order for researchers across functional areas of performance management to communicate effectively.

Because of this lack of consensus in the literature, we have introduced a revised set of definitions of performance management, performance measurement and performance measurement systems, that will be used throughout this thesis in an aim to resolve some of the difficulties faced by academics in PMM who work across traditional research boundaries. Therefore:

- **Performance** can be defined as "*the ability of a business unit to achieve its full capability, either in the past, present or future*".
- **Performance management** can be defined as "*any activity that is involved with controlling, altering or improving the ability of a business unit to achieve its full capability*".
- **Performance measurement** can be defined as "*a performance management process to quantify the efficiency and effectiveness of actions in order that they can be controlled*".
- **A Performance Measurement System** can be defined as "*a multi-dimensional set of performance measures or metrics at the heart of the performance management process, used to quantify performance, aid strategy planning and assist managers in decision making*".

2.2.2 Development of PMM as an Academic Discipline

PMM as an academic field (in its incarnation as a tool to measure financial performance), began in the discipline of Management Accounting. However, criticisms of management accounting led to a call for a:

".. return to field-based research to discover the innovative practices being introduced by organizations successfully adapting to the new organization and technology of manufacturing" (Kaplan, 1984, p. 390)

Chapter 2. Performance Measurement and Performance Management

This led to the development of performance management and performance measurement as an area of study in its own right, and broadened the scope of the research being performed. Academics from different disciplines, namely Operations Management, Human Resource Management and Strategy Management have long studied “performance” from their own unique viewpoints. However, in the 1980’s and 1990’s there was a large increase in the output of performance management and performance measurement research, leading to the formation of new models and frameworks to examine performance management and performance measurement through the lens’ of their own fields. Folan (2005) estimated that the mid to late nineties seemed to be the period where interest in performance measurement peaked. As an example, Neely (1999) claims that between 1994 and 1996, there were 3,615 articles on performance measurement published; equivalent to one new article being published every 5 hours of every working day.

Although interest in the field of PMM has waned slightly since its peak in the nineties, there remains a strong, multi-disciplinary focus in the area, which has resulted in the creation of several of the PMM frameworks and systems discussed in section 2.3

2.2.3 Why Measure and Manage Performance?

Based on the definitions of performance, performance management and performance measurement that we have proposed, it perhaps seems an obvious question to ask why we should carry out these activities; they assist managers by enabling control to be gained over the business processes and therefore give them an opportunity to improve the processes, and therefore improve performance. By breaking down the processes involved within performance measurement, performance management and PMS's, we can see that there are a wide variety of reasons why managers should do this.

Behn (2003) argues that for public sector managers, the only real purpose of performance measurement is to improve performance and that any other purposes are simply a means to achieving this goal. This view of performance measurement aligns with our proposed definitions of performance management and performance measurement as it shows how the two activities are inextricably linked. Despite this claim by Behn (2003), in the context of policing, we believe that this view is too simplistic. As part of the overall performance management strategy, we propose the

following reasons as to why public managers should use performance measurement processes³:

1. Evaluate business performance;
2. Evaluate staff performance;
3. Evaluate market position;
4. Evaluate strategy;
5. Control workforce;
6. Motivate workforce;
7. Control budget or resources;
8. Promote business externally;
9. Improve learning and development;
10. Improve decision making;
11. Improve internal accountability;
12. Improve market position;
13. Alter strategy

No matter the setting or wording, the same core reason to measure performance remains, the real purpose of performance measurement is to improve the ability to manage performance. All of the activities and purposes discussed by the authors above can be reduced to some form of "*activity that is involved with controlling, altering or improving the ability of a business unit to achieve its full capability.*" i.e. Performance management. However, it must be recognised that the confusion that surrounds the definitions will be on going for as long as PMM researchers continue to work in separate research silos, without any real attempts at cross border collaborations.

2.3 Introduction to Performance Measurement and Management Systems (PMSs)

Now that the definitions of PMM have been covered, and the reasons why performance is measured and managed has been explored, we now offer an introduction to the specifics of performance measurement and management systems (PMSs).

³ Drawn from the works of: Neely et al. (1995), Halachmi (2002), Behn (2003), Moore and Braga (2003), and Halachmi (2005).

2.3.1 The Development of PMSs

There has been a long tradition of firms tracking their performance and attempting to manage this appropriately. Financial measures have long been used to evaluate the performance of commercial organisations (The Centre for Business Performance, 2004) and the roots of performance measurement are found in early accounting systems (Bourne et al., 2003). Most of the cost accounting and management control techniques used to measure the performance of firms were already developed by 1925 (Kaplan, 1984) and did not develop much further until the 1980's. These techniques emphasized very selective financial indicators such as profit/loss and return on investment (Gomes, Yasin and Lisboa, 2006)

In the 1980's, academics were beginning to question the value of the use of solely financial measures as a means to assessing the performance of an organisation (Cooper and Kaplan, 1988). The reasoning behind this lies in the traditional accounting method of allocating overheads for goods based mainly on the direct labour costs attached with their production. Historically, long product runs meant that this model was appropriate as the costs of re-tooling plants for new products became negligible when compared to the human labour input due to the effective use of fixed investments (Kaplan, 1983). By the 1980's, once modern manufacturing techniques became more common, these models were no longer appropriate due to the large amounts of investment that had gone into developing the tools and processes used. (Neely, 1999) This led to the use of cost-based techniques alone beginning to fall out of favour in academic practice as they became widely criticised as being inappropriate for managing modern businesses (Bourne and Neely et al, 2003).

As well as the "technical" reason given above, traditional, accounting measures have endured much criticism in the management literature. The criticisms levied against them are summarised in Table 3.

Criticism of Traditional PMM Measures	Authors
Encouraging short-termism	Banks and Wheelwright (1979), Hayes and Garvin (1982), Hayes and Abernathy (1980), Kaplan (1983), Ittner et al. (2003), and Marginson, McAulay, Roush et al. (2010)
Discouraging continuous improvement	Johnson and Kaplan (1987)
Focuses too much on internal measures/lacking external focus	Johnson and Kaplan (1987), and Neely et al. (1995)
Lacks strategic focus	Skinner (1969)
Historical in nature	McNair, Lynch and Cross (1990), Dixon, Nanni and Vollmann (1990), and Eccles and Pyburn (1992)
Inhibit innovation	Richardson and Gordon (1980)

Table 3 Criticisms of Traditional PMM Measures

By the end of the 1980's, the shortcomings in traditional, financial based performance measures had resulted in a crisis in performance measurement. This led to a revolution in the PMM field (Neely, 1999), with many authors seeking to redress the balance through the design and implementation of new Performance Management Systems (PMSs). According to Yenyurt (2003), this new era of PMSs evolved into two main streams. Whilst one stream focused on the development of better financial tools to overcome the limitations of traditional financial performance measures, another focused on the non-financial aspects of businesses that accounting based measures were missing. As this work is focused around the police, we consider the non-financial aspects of PMSs to be more relevant to this study. Therefore, the discussion is limited to the discussion of the tools developed to compensate for the traditional shortcomings of PMM as shown above.

2.3.2 PMS Features

From the above discussion, it is clear that any Performance Measurement or Management framework or system (PMS) must not only include financial measures, but also non-financial indicators, if it is to be successful. Although the details of PMSs may

vary, there are a number of characteristics that are key for effective performance measurement and management.

In order to encourage a strategic view of PMM, a PMS must reflect non-financial information alongside management accounting based measures. (Kaplan and Norton, 1992) The non-financial information that is included in the PMS should be based on the key factors for success within the organisation, which may differ from one to another (Clarke, 1995).

According to (Santori and Anderson, 1987), the most important characteristic of a performance measure is that it relates to a goal or objective of the company. Therefore, in order to ensure that what is being measured is actually useful, any PMS must relate the indicators and metrics contained within to a goal or objective. Relevant measures that reflect the importance of the issues to the company must be maintained in order to ensure long-term success (Lynch and Cross, 1991). This was echoed by McAdam and Bailie (2002) in their study on the role of performance measures and the impact on strategy. It was discovered that performance measures directly linked to strategy were more effective than those that were not.

Kennerley and Neely (2003) investigated how organisations could maintain their measurement systems in order that they can continue to remain relevant, and demonstrated that the existence of capabilities in the specific areas of process, people, systems and culture, allowed organisations to cope with the changing business environment, and enable their performance measurement systems to evolve with this change.

2.3.3 Performance Management in the Public sector v Performance Management in the Private Sector

Whilst many of the factors involved in PMSs in the public sector are the same as those in the private sector, a few key considerations must be made in their design and implementation to ensure that they are suitable for purpose. Moullin (2004), highlights the “eight essentials” of an effective performance measurement system in a public sector setting. These measures are summarised below.

Chapter 2. Performance Measurement and Performance Management

1. Use a balanced set of measures to ensure high standards of performance across a broad range of targets.
2. Ensure that what is being measured is useful to the end users of the service
3. Involve staff in determining measures to assist with the “buy-in” process.
4. Use a balance of perception measures from stakeholders and performance measures indicators obtained directly from the organisation.
5. Use both outcome measures and process measures.
6. Balance the costs associated with obtaining performance measurement data against the benefits gained from obtaining them.
7. Have a feedback system where performance measurement data can be used to improve future performance.
8. Should have a focus of continuous improvement that does not have a significant stigma attached for failing to meet the desired target.

Whilst the general principles of an effective public sector PMS remain the same as in the private sector, a key consideration is that of the wider range of stakeholders that must be considered. In comparison to a private sector companies that must only consider the views of customers, staff and shareholders, in a public sector setting, the “customers” of the service is often society as a whole. As a failure to recognise this may lead to a reduction in the perceptions of legitimacy of the service in question (see section 4.2), the consideration of wider societal views must therefore be given equal consideration in the development of an appropriate PMS.

2.4 Performance Measurement and Management Systems in Policing

In the previous sections, we have discussed the general information surrounding the areas of performance measurement and performance management. The definitions necessary for understanding the terms have been outlined, why it is important to measure and manage performance has been explained, the history surrounding the development of PMSs has been reviewed, and the key characteristics that makes a PMS fit for purpose explored. This literature survey will discuss the rise of these PMSs in the public sector, specifically their use in the police forces of England and Wales.

2.4.1 Performance Measurement and Management Systems (PMSs) Policing Literature Search

Table 4 shows the search strategy and protocols for the PMS literature search.

Criteria	Included	Excluded
Sources	Academic and scholarly journals (Must be at least one published academic study for PMS to count as being used in the Police) Conference papers Reports Press articles Magazines	None
Keyword searches	[PMS] AND Police [PMS] AND “Public Sector” [PMS] AND UK Police [PMS] AND England Police	
Time Frame	All	None
Journal Area	All	None
Study Design (qualitative/quantitative)	All	None

Table 4 Search Protocol for Performance Measurement and Management Systems

The initial search provided a large number of PMSs that were investigated. However, it was found that although papers may have identified a practice as a “Performance Management System/Framework/Model”, after preliminary investigation it was found that a large number of these so-called PMSs did not actually fit the definitions of a PMS as discussed in section 2.2.1.4. Many of the items touted as PMSs were actually more general management philosophies. In addition, whilst a number of concepts within the field of quality management were identified in the literature as PMSs, these were specifically excluded from the search due to the focus of this study on directly measuring and managing performance, rather than quality or strategic management.

The “PMSs” that were identified from the literature, but not considered for inclusion in the literature search after preliminary investigations were as follows:

1. Total Quality Management
2. ISO 9000
3. Malcolm Baldrige Awards
4. Deming Prize
5. Total Productive Management
6. Tableau de Bord
7. Performance Management Programme

Chapter 2. Performance Measurement and Performance Management

- | | |
|-------------------------------|-------------------|
| 8. Herzlingers Matrix | 11. DuPont Model |
| 9. Performance Contracting | 12. Lean Thinking |
| 10. Business Excellence Model | 13. Six Sigma |

The search protocol shown in Table 4 was performed for all of the PMSs shown in Table 5 across multiple databases in order to explore whether the concepts and frameworks had been applied in the private sector, public sector, police forces worldwide or UK police forces. Examples of usage in the wider Criminal Justice System were classified only as a public sector usage.

PMS/Framework	Developed by	Private Sector	Public Sector	Police	UK Police
Balanced Scorecard	(Kaplan and Norton, 1992, 1993, 1996a, 1996b, 1996c, 2000; Cobbold and Lawrie, 2002; Cobbold, Lawrie and Issa, 2004; Kaplan and Norton, 2004a, 2004b; Lawrie and Cobbold, 2004; Kaplan and Norton, 2006)	✓	✓	✓	✓
Activity Based Costing	(Cooper, 1988a, 1988b; Cooper and Kaplan, 1988a, 1988b; Cooper, 1989; Cooper and Kaplan, 1991, 1992)	✓	✓	✓	✓
Results and Determinants Framework	(Fitzgerald, Johnson, Brignall et al., 1991)	✓	✓		
Integrated Performance Measurement System	(Bittici et al., 1997)	✓	✓		

PMS/Framework	Developed by	Private Sector	Public Sector	Police	UK Police
Theory of Constraints	(Goldratt and Cox, 1993)	✓	✓		
The Performance Prism	(Neely, Adams and Kennerly, 2002)	✓	✓		
Performance Measurement Matrix	(Keegan, Eiler and Jones, 1989)	✓	✓		
Public Sector Scorecard	(Moullin, 2006)		✓		
SMART pyramid	(Cross and Lynch, 1988)	✓			
Performance Pyramid	(Lynch and Cross, 1992)	✓			
Skandia Navigator (Intellectual Capital model)	(Edvinsson, 1999)	✓			
The Performance Management Record Sheet	(Neely, Richards, Mills et al., 1997)	✓			
Organizational Performance Measurement	Chennell, Dransfield, Field et al. (2000)	✓			
Medori and Steeple's Framework	(Medori and Steeple, 2000)	✓			
Strategic Performance Measurement	(Atkinson, Waterhouse and Wells, 1997)	✓			

Table 5 PMS Literature Survey Results

It must be recognised that whilst there are a large number of performance measurement and performance management tools, models, systems and frameworks discussed in the literature (as shown above), not all are relevant to the discussion of performance management in the police forces of England and Wales. To this end, only the PMSs that were found to have previously been applied in UK police are discussed here.

PMSs that are specific to the national performance measurement and management of the police forces of England and Wales have been excluded from this general search and included in section 3.5.3.

The following Performance Management and Measurement systems were identified through the literature search as having been used by police forces within the U.K and have therefore been explored in detail. For a more general review of PMSs used worldwide, see Bourne et al. (2003).

2.4.2 The Balanced Scorecard

2.4.2.1 Introduction

The Balanced Scorecard was first developed and proposed by Robert Kaplan and David Norton in 1992 and aimed to combine the use of financial and nonfinancial measures in a single report that would provide managers with richer, more detailed information than that provided by financial measures alone. The scorecard concept has evolved over a number of years through a series of papers and books by Kaplan and Norton (Kaplan and Norton, 1992, 1993, 1996a, 1996b, 1996c, 2000), which developed the scorecard concept from an innovative but relatively simple performance measurement tool, through to a complex PMS. Throughout the evolution of the scorecard concept, the requirement of executives to be involved in the process has ensured that the Balanced Scorecard puts strategy and vision, rather than control, at the heart of the performance management system (Kaplan and Norton, 1992).

2.4.2.2 Background

The initial aim of the Balanced Scorecard was to provide managers with a “*fast but comprehensive view of the business*” (Kaplan and Norton, 1993, p.71) with the implication that this will be a starting point for improved managerial performance. Kaplan and Norton reported that companies’ early experiences with the Balanced Scorecard fulfilled two managerial needs; namely that of performance information availability and sub-optimisation. By presenting all the disparate information required by managers to make effective decisions into one, concise report, the Balanced Scorecard increases the effectiveness of the performance information available to managers. Because the performance information was available in one place, it ensured that managers consider operational measures as a whole, allowing them to see whether improvement in one area may have come at the expense of another.

Whilst the Balanced Scorecard was first created by Kaplan and Norton (1992), numerous other authors have since contributed to the idea over the past two decades (Cobbold and Lawrie, 2002; Cobbold et al., 2004; Lawrie and Cobbold, 2004), and this has led to the evolution of the Balanced Scorecard concept from a performance measurement tool to performance management system.

2.4.2.3 Balanced Scorecards in the police

With the spread of Balanced Scorecards as a PMM tool throughout the world, proving itself in both private, and public sector organisations, it was almost inevitable that the Balanced Scorecard concept would be applied in the context of policing. There have been a number of examples of the Balanced Scorecard being utilised within the context of police forces around the world, with a particular amount of success shown within European and Nordic countries. In order for a successful implementation of the Balanced Scorecard in the police, some alterations need to be made. Kujanpää and Virta (2002) report that the most common perspectives used in police Balanced Scorecards are:

- Operational / success / outcome / performance perspective;
- Citizen and customer perspective;
- Processes perspective;
- Staff/employee perspective

(Kujanpää and Virta, 2002, p. 12)

Table 6 displays a summary of the case studies of Balanced Scorecard implementations in the police that were found through a systematic literature review

Reasons for implementation	Benefits	Challenges	Other
Translate values and mission statements into something more tangible (1)	Improvements in strategic management (1,3,4)	Problems with Balanced Scorecard definitions and concepts (3,6)	
Improve Strategic management (3)	Increased focus on strategic priorities (1,4)	Aggregation of measures (4)	*These challenges can be met by the use of the Balanced Scorecard in addition to standard performance data (4)
Improve assessment tools (3,4,5,6)	Enhanced communication (3,4)	Benchmarking/comparison with areas without Balanced Scorecard (4)	
Improve police work (4)	Increased capacity for Knowledge management (3)	Linking high level goals with day-to-day activities (4)	
Improve planning tools (4)	Improvements in planning (4)	Large amounts of time needed for implementation (6)	
Meeting government standards (5,6)	Increased capacity for benchmarking (5)	Organisational resistance (6)	* This can be helped by including front-line officers in the design of the Balanced Scorecard to give more credibility to the project (6)
Problems with paper based PMM (7)	Improved assessment tools (6)		
Provide an overview of the organisation from different stakeholder perspective (7)	Easier linkage of high level goals with day-to-day activities (7)		
	Potential to reduce costs (7)		

Table 6 Summary of Balanced Scorecard Implementations in the police

Key:

1. Royal Canadian Mounted Police (Pateman and Gruson, 2004; Kaplan and Norton, 2006)
2. New Zealand Police (New Zealand Police, 2005)
3. Finnish Police Department of the Ministry of Interior (Kujanpää and Virta, 2002)

Chapter 2. Performance Measurement and Performance Management

4. Swedish National Police Board (Elefalke, 2001; Carmona and Grönlund, 2003)
5. Baden-Württemberg police force (Kujanpää and Virta, 2002; Rickards and Ritsert, 2008; Ritsert and Pekar, 2009)
6. Dumfries and Galloway Constabulary (Wisniewski and Dickson, 2001; HMIC for Scotland, 2002; HMIC for Scotland, 2007)
7. West Mercia Constabulary (Silk, 1998)

It is important to note that in the reasons given for Balanced Scorecard implementation, only one of the cases discussed mentioned any specific goals of improving general police work. This is encouraging as it shows that in general, police forces who are experimenting with the Balanced Scorecard have realistic views as to what can be achieved and are not considering it as a “magic bullet” for improving performance. It is also interesting to see that whilst one of the major reasons given for implementing a Balanced Scorecard was to improve the assessment tools of the organisation, only one study provided any evidence that this occurred, with the main reported benefits for the Balanced Scorecard actually coming from improvements in strategic management.

Some problems with the use of the Balanced Scorecard in the police sector are raised in a number of cases. A major difficulty highlighted by Wisniewski and Dickson (2001) is the use of Balanced Scorecard terminology, which was reported to be inconsistent with existing police management culture. A major obstacle for the implementation of Balanced Scorecard or Balanced Scorecard-like approaches seems to be the specific, inherent culture engrained in police forces of objectivity. This was articulated by a member of the team creating the Dumfries and Galloway Constabulary Balanced Scorecard by the following statement:

“We (the police) like things to be unequivocal and clear-cut. We’re not comfortable subjectively choosing one thing over another or dealing with situation where there is no obvious correct solution”
(Wisniewski and Dickson, 2001, p. 1065)

From the cases presented regarding the use of the Balanced Scorecard in NPGO’s, it is clear that the original generations of the Balanced Scorecard as developed by Kaplan and Norton are not entirely suitable for use in the NPGO’s, specifically the police as

they lack usefulness (Elefalke, 2001). Therefore, in order for a police PMS to be effective and to achieve the successes detailed above, it must take into account the specific issues that regulatory organisations face when it comes to strategy and performance management (Kaplan and Norton, 2001).

2.4.3 Activity-Based Costing

2.4.3.1 Introduction

Another approach to performance measurement is the concept of Activity-Based Costing (ABC). As discussed in section 2.3.1, in the 1980's, academics and practitioners alike began to question the benefit of traditional cost accounting approaches for performance measurement. A number of techniques emerged to help deal with the problems of traditional accounting measures. Alongside the Balanced Scorecard, the other major technique to emerge that has been evidenced in UK police forces was Activity-Based Costing.

2.4.3.2 Background

Activity-Based Costing is an alternative to traditional accounting approaches to help managers increase operational performance whilst accurately determining the cost of the goods or services being produced. The practices that define Activity-Based Costing were first identified in a series of articles by Cooper (1988a; 1988b; 1999), alongside Cooper and Kaplan (1988a, 1988b,) where they discussed how traditional cost accounting approaches were distorting the true production costs of goods and services. They described an alternative to this method, which they first described as "Transaction Costing".

The basic concept behind this was as follows: rather than costs being allocated on a direct product basis where the product "consumes" man hours, machine hours and materials, costs should be allocated on an indirect transaction basis. This means that the transaction or activity that results in a cost being incurred has the cost assigned to it, rather than the product. Cooper and Kaplan (1988a) give the example of a setup transaction for manufacturing. If the setup only needs to be performed once per production run, the costing element is the whole production run (rather than each product) as this transaction needs only be performed once.

Chapter 2. Performance Measurement and Performance Management

This idea was further developed in a series of articles and books by Cooper and Kaplan (1991; 1992), which go on to develop the term Activity-Based Costing and discuss the impacts and benefits of this technique. The main benefit of this, as described by Cooper and Kaplan (1988b) is that it allows for a more accurate view of product cost and profitability. This in turn leads to a strategic benefit as it allows managers to; *“make better decisions about product design, pricing, marketing and mix, and encourages continual operating improvements”*, (Cooper and Kaplan 1988b, p. 103) thus increasing profits (Cooper and Kaplan, 1988a).

2.4.3.3 The use of Activity-Based Costing in the UK Police force

Activity-Based Costing was a requirement of the Police forces of England and Wales as part of the Policing Performance Assessment Framework (see section 3.5.3.1) from 2003/2004 to 2008/2009. Prior to this date, a number of forces had experimented with the technique, but a common methodology as to how to carry out Activity-Based Costing was not agreed by the Association of Chief Police Officers (ACPO) until 2001, when it launched the National Police Activity Based Costing Model (Collier, 2006). This model set out the police activities that should be costed, guidance on how to apportion the costs involved in policing and guidance on how data should be collected for the model.

A number of benefits were identified from requiring all forces to provide Activity-Based Costing data. These are summarised below:

- Increasing visibility about what the police do (Collier, 2006)
- Allow comparisons between forces and Basic Command Units (BCUs) (Metropolitan Police Authority, 2002)
- Complement existing requirements of accountability (Metropolitan Police Authority, 2002)
- Identify efficiency savings and good practice (Metropolitan Police Authority, 2002)
- Allow forces to allocate and bid for resources based on a demonstration of need (Metropolitan Police Authority, 2002; Flanagan, 2008)

Chapter 2. Performance Measurement and Performance Management

- Inform resourcing decisions at a local and national level (Metropolitan Police Authority, 2006)
- Relate all input costs to outputs (Flanagan, 2008)

Whilst the use of Activity-Based Costing in policing has been shown to be beneficial in certain cases, it has also had its critics. In 2007, the Home Secretary commissioned Sir Ronnie Flanagan to review policing in England and Wales. In 2008, “The Review of Policing - Final Report” (Flanagan, 2008) was published. Within this document, whilst the potential benefits of Activity-Based Costing were acknowledged, it was recognized that there was little evidence that Activity-Based Costing had been successfully applied by forces to improve productivity. The main concerns identified with Activity-Based Costing were that there are difficulties establishing an effective denominator, the lack of user-friendliness, and the high risks of collecting invalid or redundant information. It was also observed that the system is not a suitable tool for making comparative assessments. It was recommended that:

“The Home Office should urgently examine its requirement for each force to undertake Activity-Based Costing with a view to this requirement being replaced with an alternative which costs less, is easier to use and has greater impact on productivity” (Flanagan, 2008, p. 24)

As of 2008/2009, forces were no longer required to return Activity-Based Costing reports, instead, from 2009/2010, data had to be provided in the Policing Objectives Analysis (POA) framework (see section 3.5.3).

By analysing the processes involved in policing using an Activity-Based Costing model, and examining activities from the perspective of different drivers, there is the potential for managers to evaluate local initiatives (Flanagan, 2008). However, in the complex police forces of England and Wales, there has been little evidence to show that the high costs of Activity-Based Costing are justifiable in terms of improving efficiency and productivity.

2.5 Concluding Remarks

This chapter has outlined the importance of performance measurement and performance management in general. After an examination of why it is important to measure and

Chapter 2. Performance Measurement and Performance Management

manage performance, and PMM definitions were provided, we presented the results of a literature survey on the PMSs that have been evidenced in police forces both worldwide and in the UK, finding only limited evidence of academically rigorous PMSs being used to support the overall goal of improving performance.

A literature search by McAdam, Hazlett and Casey (2005) found the use of PMSs in the public sector to be limited, only finding examples of the use of the Balanced Scorecard, the Performance Prism and the Public Sector Scorecard in the UK public sector. Although this literature search has broadened the scope of a PMS and performed a worldwide search (see Table 6), there have still only been examples found of nine different types of PMSs used in the UK public sector. After reducing the scope of the work further down to examples of PMSs used in UK police forces, the only two performance measurement systems (in terms of academically derived work) that could be found to have been in use were the Balanced Scorecard, and Activity Based Costing.

Whilst there is a strong history of performance measurement and management in the UK police forces (see section 3.4), the use of the performance measurement systems and frameworks that are available to be adapted for use in the police service is limited at best. Whilst there have been a number of frameworks developed specifically for the police of England and Wales (see section 3.5.3), the use of PMSs that aim to improve performance, rather than just measuring it, continues to be a challenge in the public sector reform agenda (Wisniewski and Stewart, 2004; Fielding and Innes, 2006). It is therefore imperative to continue to discuss and develop alternative measures of performance in the police rather than relying on measures and indicators that focus on the past and are only truly useful as benchmarking tools.

CHAPTER 3. PERFORMANCE MEASUREMENT AND MANAGEMENT OF THE POLICE

3.1 Introduction

This chapter focuses the literature review on the specifics of the national performance management context of policing in England and Wales, to demonstrate why public confidence has been chosen as the key area of investigation in this study. A brief overview of how the police forces of England and Wales are structured is given, followed by a discussion on the history and development of police performance management in England and Wales as well as an examination of the specifics of how police PMM is achieved.

Table 7 shows the search strategy and protocols for the literature search around police PMM in England and Wales.

Criteria	Included	Excluded
Sources	Academic and scholarly journals Conference papers Government Reports/Acts NPIA library Police Authority and Police force websites Press articles	Magazines
Keyword searches	Performance management/performance measurement AND Police/England and Wales police/ Police performance AND Development/Public/Confidence Police AND history	
Time Frame	1980-present	Pre 1980s literature
Journal Area	All	None
Study Design (qualitative/quantitative)	All	None

Table 7 Search Strategy and Protocol for England and Wales Police PMM

3.2 Structure and Accountability of the Police Forces of England and Wales

The basis of the modern police force in England and Wales evolved from both the 1964 Police Act (Great Britain, 1964), and the 1972 Local Government Act (Great Britain, 1972). The 1964 Police Act set out the tripartite division of control in policing, with the responsibilities for the conduct of the 43 police forces of England and Wales distributed between the Home Office, the local police authorities and the chief constables of the forces.

The 1964 act laid out the precise responsibilities of each of the three partners and defined the relationships between them. In its original form it required the local police authorities to maintain an “adequate and efficient force”, the chief constables to be held responsible for the “direction and control of their force” and the Home Office and the Home Secretary to “promote the efficiency of the police” (Morgan and Newburn, 1997).

The 1972 Local Government Act provided the basis for aligning police forces with the newly defined local government structure of counties and districts. This eventually resulted in the formation of 43 separate police forces with their own police authority and chief constable (or commissioner for the Metropolitan Police Service) in the 1996 Police Act.

With effect from November 2011, the 2011 Police Reform and Social Responsibility Act (Great Britain, 2011) significantly altered this tripartite structure of the police by abolishing the police authorities as they were re-defined by the 1996 Police Act (Great Britain, 1996). Instead of police authorities, the 2011 Act established the role of an elected Police and Crime Commissioner (PCC) to hold the Chief Constable of the force accountable for the functions of the Chief Constable and “*the persons under the direction and control of the Chief Constable*” (Great Britain 2011, Chapter 1.17). The Act also requires that the Chief Constable exercise their powers in a manner that assists the PCC in the performance of their functions. In the case of the Metropolitan Police, the newly established position of The Mayor’s Office for Policing and Crime replaces the Metropolitan Police Authority with responsibility for holding the Commissioner of Police of the Metropolitan Police to account. In addition, the act establishes Police and Crime Panels, which have been established in order to scrutinise the work of the PCC

and contain a mix of elected and independent members focused on ensuring the PCC remains independent of party politics and is carrying out their role effectively and efficiently.

3.3 Police Performance Management in England and Wales

When we discuss the concept of police performance, we need to make a clear distinction between performances at different levels of policing. This could be at the level of individual officers, local beats or police stations, Basic Command Unit (BCU), police force level or the performance of police forces overall. Although there have been a number of studies examining the performance of individual officers (Beattie and Cockcroft, 2006; Sanders, 2008), the focus of this review is more on the examination of a wider view of overall police performance in terms of police forces and national policing.

The measurement of police performance at this level is particularly complex, and may be considered differently by stakeholders depending on the particular level that is being examined. This is partly due to the diversity of activities that the police undertake and partly due to the lack of agreement in the priorities and objectives of policing (Collier, 2006.; Soeparman, Geurtz and van den Brink, 2012). As the priorities and national objectives of policing change, so too must police PMM. As will be shown in the following sections, there has been a wide disparity in the way police performance has been measured and managed in recent history.

We begin with an historical examination of performance management in the police forces of England and Wales⁴, and then examine the specific elements that are key to understanding performance management in an organization as complex as the police.

3.4 Modern History of Police Performance Management and the Rise of New Public Management

Police performance measurement and management (PMM) has seen a great deal of change in past decades. The following section aims to clarify the timeline of police

⁴ For the sake of simplicity and readability, unless specifically stated otherwise, the terms “police” and “policing” refer to the police forces of England and Wales from here on in

PMM as it relates to public confidence, and provide additional context to the present study. The concept of New Public Management as it relates to the police force will be explored throughout this analysis.

3.4.1 Under the Conservative Party

The root of performance measurement in the “modern-day” police force (1980’s to present) is inextricably linked to the concept of New Public Management (NPM), and can be traced back to the Home Office Circular 113 “Manpower, Effectiveness and Efficiency in the Police Service” (Home Office, 1983). This document, as part of the Financial Management Initiative and the NPM agenda, forced Chief Constables to consider greater cost efficiencies and more effective methods of policing for the first time (Hirst, 1990). Prior to this, the police force had maintained large degrees of constabulary independence in the manner in which they conducted their performance management, and had managed to stay relatively “under the radar” of the effects of New Public Management (NPM), being the last major public institution to be subjected to its full force (Rogerson, 1995, Savage, 2003).

Whilst there is some disagreement in the literature as to the key features of NPM (Butterfield, Edwards and Woodall, 2005), Hood (1991) identify what they claim as the seven key “*doctrinal components*” (Hood, 1991, p.4) of this novel view of the management of public services:

1. “Hands-on professional management” in the public sector;
2. Explicit standards and measures of performance;
3. Greater emphasis on output controls;
4. Shift to disaggregation of units in the public sector;
5. Shift to greater competition in the public sector;
6. Stress on private sector styles of management practice;
7. Stress on greater discipline and parsimony in resource use.

These doctrinal components arose from a marriage of two underlying, and sometimes opposing streams of ideas: that of “new institutional economics” and the concept of “managerialism” in the public sector (Hood, 1991). These two concepts combined in the 1970’s to form a set of assumptions and value statements regarding how public sector

organisations (and the employees of those organisations) should function in a more “business-like” and “market-oriented” manner (Diefenbach, 2009).

However, in trying to apply these principles to the police service, certain difficulties arise. Unlike other public services such as health or education where the “customer” and stakeholders of the organisation are easily defined, attempts at defining these in the police are difficult. Is the customer of the police the individual receiving the “services” of the police in terms of being arrested and charged with offences, or are they in fact the law-abiding public who are being protected from the less salubrious members of society? This inherent conflict of interest, coupled with the strong negotiating power of the Police Federation could perhaps have resulted in the ability of the Police to resist the inevitable encroach of NPM for so long.

Although the police had previously been subject to management systems such as Policing by Objectives, prior to the 1980’s, there was relatively little pressure from the government to increase the spread of performance measurement and management techniques throughout the police sector as a whole (Golding and Savage, 2008). Towards the end of the 1980’s, there was concern from the Conservative Government that despite favourable treatment of the police sector as a public service with regards to financial support, the police were failing to deliver on numerous aspects of their roles (Golding and Savage, 2008). Due to this perceived failure to perform at the optimal level, police forces were mandated to produce Performance Indicators (PIs) to HMIC beginning in 1992. By 1993, these PI’s were re-written to form a suite of indicators, designed to address the needs of regulatory bodies such as Her Majesty’s Inspectorate of Constabulary (HMIC), the Audit Commission and the Association of Chief Police Officers (ACPO). This new suite of indicators was brought into force by Home Office Circular 17 in 1993 (Home Office, 1993) and included, amongst other things, measures of confidence in the services provided by the police service. This introduction of specific targets to the police force was a relatively novel idea, despite the rise of these targets and the NPM agenda within other public services at the time, specifically the Health service.

The Police and Magistrates’ Courts Act of 1994 (Great Britain, 1994) established the first national Key Performance Indicators (KPIs) based on the new Key Policing

Objectives as well as the requirement for forces to draw up local policing plans. The results of the first assessment by the Audit Commission were published in 1995 (Audit Commission, 1995), and constituted the first comparative assessments of policing performance in the modern history of the police forces of England and Wales. These comparative assessments changed rapidly over the following years and, as a result of criticism from within the police that inter-force comparisons of police performance was unfair, the concept of Most Similar Force (MSF) groups was introduced (Barton and Barton, 2011). This allowed for the accurate comparison of forces based on similarities of geographical, demographic and socio-economic indicators and was a large step forward in the NPM doctrines of both providing explicit standards of performance, as well as introducing elements of competition between forces.

3.4.2 Under New Labour

Under the New Labour Government, significant changes to police PMM occurred. The 1999 Local Government Act (Great Britain, 1999) introduced the principles of Best Value as a tool to improve the performance of police forces. Whilst Best Value could be seen as the Labour Equivalent of the Conservative “value for money” agenda, embraced in the 1980’s and early 1990’s, it has been considered as a more assertive and demanding performance tool, due to the framework of New Public Management (Savage, 2003). The principles of Best Value required local authorities, police authorities and fire and rescue service authorities (amongst others) to continually seek improvement in the delivery of services in order to achieve economy, efficiency and effectiveness through the setting of improved performance targets. The Act also set out the signals of the “four Cs” of the Best Value framework. It required forces to “Compare” their service’s performance against others, “Consult” with local business and communities, consider “Competition” in the provision of services, and “Challenge” the method and reasons for the provision (Department of the Environment, 1998). The Local Government Act (Great Britain, 1999) also gave statutory underpinning to Best Value Performance Indicators (BVPIs) and increased the role of HMIC and the Audit Commission to give them the authority to inspect forces, and report to the Home Secretary how well both forces, and police authorities were complying with the principles of Best Value (Golding and Savage, 2008).

Chapter 3. Performance Measurement and Management of the Police

The following years saw the publication of a number of damning reports on police performance. Amongst these were the Macpherson report into the death of Stephen Lawrence (Macpherson, 1999), the HMIC Thematic Inspection Report highlighting the under-reporting of crimes, (HMIC, 2000) and the Home Office White Paper “Policing a New Century: A Blueprint for reform” (Home Office, 2001). This last report set out a case for a reform agenda for the police based on a number of problems of police performance, including high levels of crime, low detection rates, low levels of public confidence and wide variations in the performance levels achieved between individual police forces.

Stemming from the White Paper and the subsequent Police Reform Act 2002 (Great Britain, 2002), a raft of changes were introduced to the police, including a significant number of changes to the performance management system. These changes were as follows:

- The role of HMIC was strengthened and developed to include the ability to tailor inspections based on the performance of the relevant force, inspect BCUS’s and appoint lay inspectors.
- New powers were issued to allow the Home Secretary to directly intervene in a police force to address issues of underperformance, whether this be from a Chief Constable or a Police Authority.
- The number of Best Value Performance Indicators (BVPIs) in use was reduced by approximately 50% to focus on the “key elements” of policing, specifically, those that provided significant value, rather than were simply easy to measure. The remaining indicators were renamed Key Performance Indicators (KPIs), and organised in a manner that would make them easier to understand by the public and to enable the Policing Standards Unit (PSU) to carry out its new roles.

In 2008, the Policing Green Paper “From the neighbourhood to the national: Policing our Communities together” was published (Home Office, 2008), which set out major changes for police performance management. As part of the new landscape for policing priorities in the form of Public Service Agreements (PSAs), the performance

Chapter 3. Performance Measurement and Management of the Police

management system of the police was reshaped dramatically to reflect the new challenges in a number of key areas relating to KPIs and public confidence:

- Public Confidence named as the only top-down numerical target for individual forces (see Chapter 3) with a nationwide target of 60% by 2012, a rise of 15 points
- All other remaining top down targets replaced, with strategies for dealing with remaining problems developed through the form of Public Service Agreements
- iQuanta information system reshaped to avoid creating implicit targets
- Amount of PMM data collected by forces to be reviewed with the aim of reducing it by 50%
- Reinforcing the focus on partnership working in the Criminal Justice System (CJS):
 - Improve collaboration with Government departments
 - Continuing Support for Crime and Disorder Reduction Partnerships (CDRPs) and Drug and Alcohol Action Teams (DAATs)
 - Home Office to ensure any targets agreed with partnerships are met

The policing Green Paper was significant in that it further reduced the number of performance targets that had to be met by individual forces, yet retained public confidence as the only numerical top-down measure, alongside the introduction of the Policing Pledge. The aim of this change was to “*put the public at the heart of policing*” (Home Office, 2009a, p. 7). For the first time in more than two decades, police forces were freed from the constraints of constantly meeting targets, with a clear statement coming from the Home Office stating the wish for a reduction in the volume of PMM data produced by forces.

The subsequent publication of the Policing White Paper “Protecting the public: supporting the police to succeed” (Home Office, 2009b) confirmed the above changes to police PMM, and instructed forces that their Strategic Policing Priorities for 2010/1011 were to be focused on delivering the single Confidence target.

Although public confidence had been used throughout the history of police PMM as a benchmark of policing performance, the promotion of public confidence to the only

national performance target marked a key milestone in police PMM, recognising the importance of public confidence at the highest level. However, given that the use of single measure indicators to assess performance has been widely criticised both in general terms (Ostram, 1973; Likierman, 1993; Behn, 2003; Propper and Wilson, 2003), and in the case of public confidence in particular (Myhill, Quinton, Bradford et al., 2011), its use as a sole operational target for police PMM could therefore be considered questionable.

The Home Office document “The New Performance Landscape for Crime and Policing” (Home Office, 2009a) clarified the situation for police PMM following the publication of the above Green Paper. This document emphasised the need for local planning and a balanced view of performance management; taking into account the needs of local communities. It stressed that local forces and crime partnerships have the ultimate responsibility for their own self-improvement and that the new system of reduced target setting should support this.

In November 2009, Jan Berry released her full report on reducing police bureaucracy (Berry, 2009). Contained within were a number of recommendations relating to police PMM. These included:

- Realign performance frameworks to recognise outcomes, rather than outputs therefore changing the over-reliance on quantitative data;
- Discourage the performance culture of league tables;
- Rationalise the number of survey and opinion polls carried out to avoid public frustration;
- Reduce the PMM data burden by reviewing currently collected data and assessing it to ensure that it is necessary, not duplicated, adds value to the organisation and is collected in the least bureaucratic manner;

Whilst action was already being taken to address these issues by the time the full report was published, the publication of the report highlighted how the entire concept of police PMM was beginning to change. By this point, New Labour had begun to listen to the complaints made by the police service as a whole regarding the burdens of constant performance monitoring, and had begun to realise that this was leading to a culture in the police where the strict achievement of targets was more important than actually

serving the public (cf. Fielding and Innes, 2006; Maguire and John, 2006). The commitment to a reduction in the number of targets and the amount of data that had to be collected showed how the police PMM landscape was moving away from one of strict performance measurement, and more towards one of true performance management.

3.4.3 Under the Coalition

After the Conservative-Liberal Democrat coalition came into power in May 2010, significant reforms to the police and police PMM were announced almost immediately alongside significant cuts to police funding.

The changes relevant to police PMM introduced by the Coalition since May 2010, are as follows⁵:

- The single remaining top-down target of 60% public confidence level, along with the remaining Key Performance Indicators were all removed;
- Police Authorities scrapped and replaced with directly elected Police and Crime Commissioners;
- Real-term funding cuts of 20% over the period 2010-2014;
- Removal of the Policing Pledge;
- HMIC tasked with performing “light touch inspection routines” in addition to other changes (see section 3.5. publishing accessible information regarding police performance and Value for Money Profiles showing comparative information on costs and outcomes;
- Phasing out of the National Police Improvement Agency;
- Development of Comprehensive Area Assessments (CAAs) halted;
- Public Service Agreements abolished.

"In scrapping the confidence target and the policing pledge, I couldn't be any clearer about your mission: it isn't a 30-point plan; it is to cut crime. No more, and no less."
(May, 2010)

⁵These changes are compiled from the following documents: “Policing the 21st Century: Reconnecting police and the people” (Home Office, 2010), “Spending Review 2010” (HM Treasury, 2010) and the Police Reform and Social Responsibility Act (Great Britain, 2011)

Chapter 3. Performance Measurement and Management of the Police

The above quotation by Theresa May, given at the National Policing Conference in May 2010, is indicative of the Coalitions attitude to police PMM: the alteration of the focus of police performance being more focused on outcomes, rather than on centralised targets (Fleming and McLaughlin, 2010). Although this speech ended the reign of public confidence as a specific target, it brought in an implied target of its own: “cut crime”. By diverting attention away from the public confidence agenda, this could potentially lead police managers to assume that public confidence is no longer of any importance. This could in turn, cause a return to a more response-based style of policing in order to reduce crime, as opposed to the maintenance of reassurance/neighbourhood based policing that has been proven to have a long term, positive impact on public confidence (Quinton, Morris and Britain, 2008). Although the recent drive towards including public confidence as a target at a local level seems to counter this view somewhat⁶, without continuing high-level recognition that the maintenance and improvement of public confidence should remain a key goal for the police, it is difficult to see support for this continuing *ad infinitum*.

The consultation document “Policing the 21st Century: Reconnecting police and the people” (Home Office, 2010), stresses the importance of public confidence but states: “*it is up to communities to decide how well their force is doing*” (Home Office 2010, p. 19). Whilst the top-down target was abolished, it continues to be measured as a performance indicator, and remains a key element in the role of HMIC, who have a responsibility to “strengthen the public’s trust and confidence” (Home Office 2010, p.17). Although this will be subject to future review (HMIC, 2010), the next framework of police performance to be developed by HMIC will include elements of public confidence in order to gain an overall view of how police forces are performing (Seward, 2013).

According to Ashby, Irving and Longley (2007), the attempts to introduce NPM to policing have not been particularly effective. Despite the consistent push by successive governments to introduce increasingly stricter performance regimes, we have shown

⁶ See the Police and Crime Plans for the police forces of North Yorkshire (Mulligan, 2013a), Avon and Somerset (Mountstevens, 2013), Northumbria (Baird, 2013) and Thames Valley (Stansfeld, 2013) amongst many others.

how these attempts have been mired by both inconsistencies and back-tracking in PMM policies, and a battle between “*what legislators want and what managers need in terms of performance management*” (Ashby, 2007, p. 172). Despite these difficulties, it is clear that there is still going to be a commitment from the Coalition government towards ensuring the general principles of NPM in the form of improving both police performance and public confidence. However, the shift seems to be more towards enabling forces and PCCs to set their own goals and retain responsibility for ensuring these goals are met. This change in the policing landscape is confounded by real-term reductions in funding of approximately 20% over the next four years (HM Treasury, 2010), which will force the police to seek evidence-based recommendations on how they can best achieve these goals in the most cost-efficient way possible.

Whilst these renewed promises to reduce bureaucracy and target setting in police PMM, imply a “longer leash” on monitoring, this must be backed up by a firm commitment to the independence of external auditors assessing the performance of the police to ensure that standards do not slide in the new tri-partite police accountability structure.

3.5 Who Watches the Watchers: HMIC and the Role of Public Confidence in Police Performance Measurement and Management Systems (PMSs)

3.5.1 Introduction

Section 2.4 hinted at the freedom that individual police forces have had in the past, concerning the implementation of PMSs normally used in the private sector the purpose of PMM. As well these examples of internal performance management activities specific to each force, the performance of all of the police forces of England and Wales is assessed at a national level by Her Majesty’s Inspectorate of Constabulary (HMIC). The role that HMIC holds in assessing the effectiveness and efficiency of the police has remained relatively unchanged since its foundation in 1856. However, over a period of many years, their statutory powers have been gradually strengthened in progressive legislative and policy decisions, making them the most significant external arbiter of police performance in England and Wales.

As shown in the above section, the last two decades has seen significant changes in police PMM. This section addresses the role that public confidence has played in the

performance measurement and performance management systems that HMIC have used to assess the police over recent years.

3.5.2 Current Role of HMIC

Whilst HMIC no longer ranks forces on a “Ladder of Support and Intervention” (see Home Office (2008), they have a statutory duty to keep abreast of complaints or suggestions of misconduct, and report any concerns regarding a force to both the Home Secretary and the PCC of the force in question.

The independence of HMIC has also been retained, and they now have the power to publish reports directly to the public, rather than through the Home Secretary (HMIC, 2012b). This should enable them to maintain an efficient performance monitoring role, despite the recent “long leash” on performance given to police forces since the start of the Coalition government.

In the years since its introduction, HMIC has been tasked with assessing police performance in a variety of different ways including the PPAF, APACS, Value for Money Profiles, and Policing Report Cards. HMIC is currently reviewing the method by which it assesses the performance of the police forces of England and Wales and a new performance framework is due to be published in Summer 2013 (Seward, 2013). HMIC currently does not set any targets, expected levels of performance, or standards, and states it has no intention to start doing so (HMIC, 2012a); intending that PCC’s and individual forces will set standards appropriate to them at a local level. Monitoring will continue from HMIC on a “Risk Construct” based approach aimed at avoiding making the process of monitoring and inspection an unnecessary burden on PCC’s or forces (HMIC, 2012a).

3.5.3 Relevant Police PMSs

Police PMS can be categorised as efficiency (or value for money) frameworks and true performance measurement and management frameworks in their strictest sense of their potential ability to improve effectiveness. Due to the efficiency frameworks lacking in their ability to include any form of public perceptions such as confidence, these are not

explored⁷. The “true” PMSs used in the PMM of policing over recent years are analysed below.

3.5.3.1 Police Performance Assessment Framework (PPAF)

The Police Performance Assessment Framework (PPAF) was a PMM framework used in the overall police PMM environment from 2004/2005 to 2007/2008 with the purpose of improving the performance of the police service, by focusing on a number of key strategic outcomes of policing (Police Standards Unit and Home Office, 2004). Prior to the implementation of the PPAF,

“...the police service had lagged behind many other public services in terms of the extent, robustness and transparency of the framework for assessing its performance” (Police Standards Unit and Home Office 2004 p. 4).

The PPAF was designed in a manner that was supposed to improve the performance of the police service by focusing on key strategic outcomes of policing and therefore providing the policing community and the public with a robust mechanism for assessing police performance.

The development of the PPAF was led by the Home Office with the support of key policing partners including HMIC, ACPO and the Association of Police Authorities (APA) and was based around Statutory Performance Indicators (SPIs) which replaced Best Value Performance Indicators (BVPI's) as a measure of assessing police performance. These SPI's were located in one of six “domains”, designed to reflect the breadth of policing and capture the full range of activities that the police carry out. These activities go beyond the primary objective of reducing crime and allowed performance to be assessed over a number of key policing activities including tackling anti-social behaviour, improving confidence in the police, and providing reassurance to the public. It is important to note that in order to fairly assess the results of police work

⁷ For reference, these frameworks are Activity Based Costing (see section 2.4.3.3), Police Objectives Analysis (Chartered Institute of Public Finance and Accountancy, 2011), aimed at analysing police spending, and The Productivity Framework (Home Office et al., 2010), designed to allow forces to provide preliminary information prior to inspection by HMIC.

and help deliver real improvements in policing; the PPAF was primarily concerned with outcome measures as opposed to output measures.

Figure 3 shows how the six domains of the PPAF come together into a tangible PMM framework. Whilst this picture may seem relatively straightforward, it must be understood that activity in one domain may have secondary effects on the outcomes of activities in another domain.

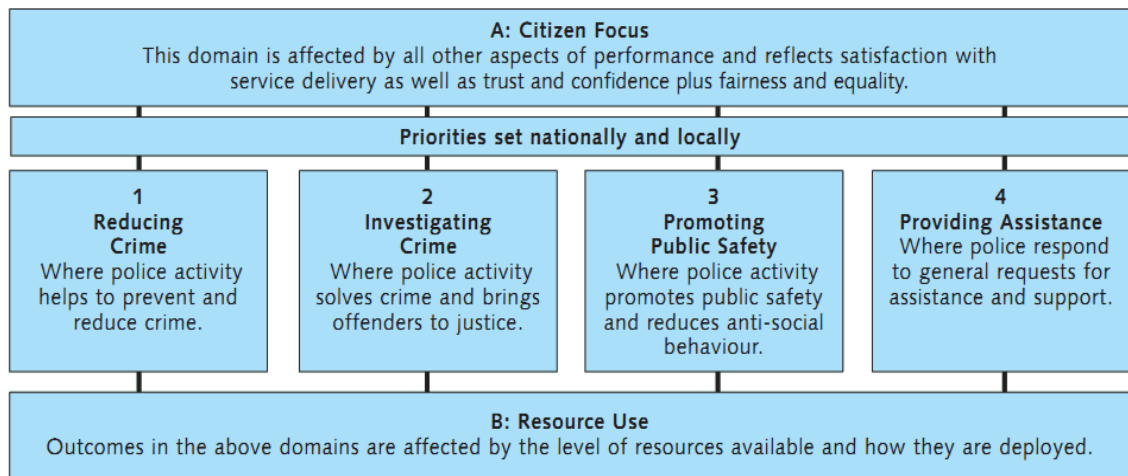


Figure 3 Policing Performance Assessment Framework. Source: Police Standards Unit and Home Office, (2004) p.6

As well as covering the broad activities of policing, the PPAF is also concerned with examining how efficiently police are carrying out these activities; this can be seen in domain B: “Resource Use”. Linking outcome performance measures to resource usage enables a more transparent view of police efficiency. The PPAF was not simply a notional “box-ticking” exercise; it has the strength of combining national SPI’s and Policing Plans, along with elements of local plans and priorities in order to obtain a more holistic view of police performance than was previously achievable using the traditional efficiency/productivity frameworks.

In 2008, the PPAF was abandoned in favour of a newly developed PMM known as Assessments of Policing and Community Safety (AsPACS). In the transitional period between the two major frameworks, a system known as Joint Interim Performance Assessment was used.

3.5.3.2 Assessments of Policing and Community Safety (AsPACS)

In 2007, the Home Office published the strategy document “Cutting Crime: A new Partnership 2008-11” (Home Office, 2007b). This document unveiled a major change to the PMM framework used in policing in phasing out the PPAF and replacing it with an entirely new framework designed to give more weight to issues of community safety by including not only issues of policing, but also providing a wider view on crime and drugs. This new framework was named Assessments of Policing and Community Safety (AsPACS⁸).

The aim of the new framework, developed by the Home Office along with 14 other partner organisations, was to not only simplify police performance management but to “align the performance frameworks of community safety partners” (Golding and Savage, 2008, p. 741). The framework also more adequately reflected the priorities laid out in the redeveloped crime strategy, and the new Public Service Agreements of the New Labour government. The main changes from the previous framework were as follows:

- Provided a more balanced view of policing performance by increasing the weight given within AsPACS to issues such as terrorism, violence and protective services;
- Highlighted the increasing importance of public confidence as a measure of performance;
- Recognised the importance of agencies other than the police in achieving crime and community safety goals by moving to one single measurement framework agreed with all partners;
- Aimed to support a balanced view of accountability by building on the roles of partners at a local, regional and national level and allowed for a realistic balance between both national and local priorities;
- Created a framework consistent with that of other public services.

⁸ The Assessments of Policing and Community safety framework was later renamed the Analysis of Policing and community safety. To distinguish between the two within this document, we will use the abbreviation AsPACS for the initial incarnation of the framework and APACS for the revised PMM framework.

AsPACS required forces to produce data on 34 Statutory Performance Indicators within five domains:

1. Promoting Safety
2. Tackling Crime
3. Serious Crime and Protection
4. Confidence and Satisfaction
5. Organisational Management

The framework for AsPACS is shown in Figure 4.



Figure 4 AsPACS Framework. Source: Home Office (2007a) p.17

The five domains within AsPACS were intended to allow the wide variety of work involved in policing and community safety to be reflected in a comprehensive, balanced and consistent manner (Home Office, 2007a). Although not all of the activities carried out by the police and other partners are included, the Statutory Performance Indicators (SPIs) within the domains allow a proportionate view of all areas of work.

3.5.3.3 Analysis of Policing and Community Safety (APACS)

As discussed in section 3.4.2, the 2008 Policing Green Paper signalled the intention for the government to move away from micro-management of the police force and reduce targets for policing. In order to reflect this, the name of the performance management framework changed from Assessment of Policing and Community Safety, to Analysis of Policing and Community Safety (APACS) in April 2008.

For the 2009/2010 period, all of the SPIs within APACS lost their “Statutory” status and become a set of 36 Key Performance Indicators (KPIs) based on the original SPIs. With the exception of the single remaining target of increasing public confidence, the indicators lost their associated targets. Whilst these indicators no longer had targets attached to them, forces were still required to produce data on these indicators in order to provide data for analysis by HMIC. The links with PSAs and National Indicator Sets remained in the new framework, as did the on-going support for improving performance management within policing.

In 2010, the new Coalition government took power and major changes were announced to police PMM as discussed in section 3.4.3. The APACS framework as it stood was retired, although the majority of the indicators are still being monitored. This data continues to be collected using the iQuanta web-based performance tool, in order to provide a consistent evidence base to support PMM planning. Whilst the Home Office no longer uses this data for assessment purposes, the information is still taken into account by HMIC when carrying out assessments and inspections (Seward, 2013).

3.6 Concluding Remarks

This section has sought to identify and analyse the performance management landscape that the police of England and Wales have operated within, since PMM came to the forefront of government policy in the 1980’s from the application of the concept of New Public Management to the police service.

It is clear that performance management plays a fundamental role in ensuring the effective and efficient delivery of policing services. The evidence provided above has shown how performance measurement and management techniques and frameworks can assist the police in obtaining the most value from limited resources. This is especially important in the landscape of austerity and funding cuts within the public sector, to ensure that frontline policing is not affected and that improvements in both efficiency and effectiveness are obtained over the coming years.

With the exception of Activity Based Costing, there has been little academic analysis on the subject of police PMM frameworks. Whilst the problems inherent in police PMM have been discussed since the 1980’s (Chatterton, 1987), and the issues concerning

Chapter 3. Performance Measurement and Management of the Police

PMM frameworks based around performance indicators are well documented⁹, this form of PMM has been the staple of police PMM in recent decades. The recent Coalition, more locally devolved “longer leash” approach to police PMM seems to suggest that this era of performance indicator driven PMM is ending, however, it remains to be seen what will emerge over the next few years for police PMM at a national level.

By examining the different PMM frameworks that have been used in assessing the efficiency and effectiveness of the police and seeing the huge variety of conflicting measures and outputs of police PMM used, it is evident that a consensus on what is effective in police PMM has not yet been reached. Despite all of the attempts to create a robust system of police performance measurement and management, the underlying nature remains one of “increasing complexity, centralisation, and control” (Golding and Savage, 2008, p. 743). No single robust measure of police performance exists (Policy Exchange, 2011), nor has a consistent performance measurement and management framework for policing at a local or national scale been created (Collier, 2006).

However, there is one thread that has remained consistent throughout the performance management timeline of the police: the concept of public confidence in policing services. This has been included as a metric since the first BVPI indicator sets of the Conservative party, came to prominence in the HMIC frameworks during New Labour, and became the only top-down target for police forces from 2009. Whilst the Coalition government removed the confidence target in an attempt to show police forces across the country that they were keen to reduce bureaucracy in policing, confidence remains on the radar in the context of national policing assessments (Seward, 2013).

Public confidence is also becoming even more prominent in the local PMM plans of a number of police forces of England and Wales, as the newly elected PCCs seek to ensure that residents are confident in all aspects of the work of their force. This is shown in the inclusion of either specified public confidence targets, or a general desire

⁹ See Rogerson (1995), Collier (1998, 2006), Pidun and Felden (2011), and Moore and Braga (2003) amongst others.

Chapter 3. Performance Measurement and Management of the Police

to improve public confidence, in individual Police and Crime Plans throughout the country over the next four years.¹⁰

The following chapter examines this important concept; the focus of the present investigation, in more detail.

¹⁰ See the Police and Crime Plans for the police forces of North Yorkshire (Mulligan, 2013a), Avon and Somerset (Mountstevens, 2013), Northumbria (Baird, 2013), Thames Valley (Stansfeld, 2013), Gwent (Johnston, 2013), Greater Manchester (Lloyd, 2013) West Midlands (Jones, 2013), and Cambridgeshire (Graham, 2013), amongst others..

CHAPTER 4. PUBLIC CONFIDENCE IN POLICING

“Public attitudes towards crime, policing and justice remain 'hot' social and political topics. Low confidence in the criminal justice system challenges the legitimacy that underpins the effectiveness of the police and the courts. The police depend upon the authority they can command rather than the force they can deploy as a last resort”
(Jackson 2013, [Abstract])

4.1 Introduction

The previous chapter focused on the specifics of performance management within policing in England and Wales. An overview of the way the police forces of England and Wales are structured was shown, followed by a discussion on the history and development of police performance management in England and Wales, as well as an examination of the specifics of PMM in the police. As evidenced in the previous chapter, the police have been assessed on their performance using a wide variety of measures over the past few decades. However, one theme that has been consistent throughout the history of police PMM is that of public confidence.

This concept has been a consistent component of both the specific PMSs used in the police, as well as an overarching theme in the overall police PMM landscape and culture. Whilst interest in public confidence is far from new (Holdaway, 2010), the importance of public confidence in policing has increased dramatically within the last ten years (Bradford, Stanko and Jackson, 2009).

The following chapter examines this important concept of public confidence by providing some background information to the subject, assessing how it has been measured in the past, and providing a critical analysis of past attempts to model public confidence in various settings. Based on this review, the specific factors that will be assessed in the context of York are chosen and analysed based upon the evidence provided in the literature as to the potential drivers of public confidence in policing.

Table 8 shows the search strategy and protocol used to identify the appropriate literature discussed in this section.

Chapter 4. Public Confidence in Policing

Criteria	Included	Excluded
Sources	Academic and scholarly journals Conference papers Government Reports NPIA library Police Authority and Police force websites Press articles	Magazines
Keyword searches	Public Confidence AND/OR Police Trust AND Police Public AND/OR Confidence AND factors Police AND Perceptions Public Confidence AND [title of specific factor under examination]	
Time Frame	All	None
Journal Area	All	None
Study Design (qualitative/quantitative)	All (But strong focus on quantitative studies)	None

Table 8 Search Strategy and Protocol for Public Confidence literature

According to Jackson and Sunshine (2007), public confidence in the police in Britain has become “*a short-hand for trust, legitimacy and consent*” (p. 218). In the literature on public confidence, it is recognized that confidence is a difficult subject to grasp (Brown and Evans, 2009; Siegrist, 2010), yet for the purpose of this study, we draw upon the above concept of confidence as a synonym for a combination of a number of views held about the police by the public, focused around the notion of reliability. As demonstrated by Jackson and Bradford (2010), public confidence refers to a combined perception of the trust that people have in the police relating to a number of perceptions including fairness, effectiveness and engagement, which all lead to an “overall” perception of confidence. In this study we refer to confidence as an overall evaluation of the police made by the public, taking into account a multitude of inter-related factors of institutional trust and perceived effectiveness, to give something akin to a “*job rating*” (Bradford, Jackson, Hough et al., 2008) of the police. In order to assess a more nuanced judgement of public confidence, in addition to asking the traditional confidence questions used by the BCS/CSEW, a set of questions was asked relating to how reliable the police were perceived around a number of areas. For a more detailed discussion on how we construct a factor of public confidence for the purposes of this study, see section 4.5.1

4.2 The Importance of Public Confidence in Policing

From as early as 1999, maintaining public confidence has been recognised as an essential element of the job of police officers (Allen, 2006). The Police Reform Act 2002 (Great Britain, 2002) laid out in law the importance of public confidence in policing by establishing provisions relating to public complaints, specifically regarding police conduct and disciplinary procedures, the handling of which “*could make or break public confidence*” (Great Britain, 2002 p. 182). Further policy changes have led to the increasing importance of public confidence in the wider police landscape specifically, the introduction of an “overall” confidence indicator as the sole mean of measuring police performance. Whilst the Coalition government scrapped this target almost immediately after coming into power (see section 3.4), maintaining levels of public confidence in the police will remain a key issue for police at a local level despite a lack of national targets (see section 3.4.3). Specifically, the issue of how public confidence can be improved, and more importantly, how the police can achieve this requires further investigation.

It is generally acknowledged that the police are less effective in controlling issues of crime if they do not have the confidence of the public in terms of assisting police with their duties (Fitzgerald, 2010). To understand the reasons behind this, and therefore the importance of the role that public confidence has in policing in England and Wales, we need to understand two interacting, fundamental concepts of policing in the UK: policing by consent and the new paradigm of community based policing.

The ability of the police to function effectively depends on the authority that they can command, rather than in the force that they can deploy as a final resort (Hough, 2003). Traditionally, police in the UK have “policed by consent” rather than with force. In comparison to countries such as the USA, the amount of force used by UK police the police is relatively low. Despite a recent rise in the routine use of force, the British police continue to be “*exceptionally lightly armed compared to police forces elsewhere*” (Waddington and Wright, 2008 p. 466) and a great deal of emphasis is still placed on this system of “policing by consent” (Reiner, 2000). It is therefore essential for public

Chapter 4. Public Confidence in Policing

order that police retain their legitimacy¹¹ in their role as defenders of public order, because if the public lose confidence in the police, their ability to maintain public order will be diminished. This could have significant detrimental effects on levels of public cooperation across the whole range of policing activities (Hohl, Bradford and Stanko, 2010; Jackson, Hough, Bradford et al., 2012).

Community based policing is inextricably linked with the concept of public confidence. From the days of the “new police” established in 1829 by the Home Secretary Robert Peel, the role of the police has changed significantly from that of solely preventing crime (Elmsley, 2008). Modern police roles include a variety of tasks including, at the very least: order maintenance; crime control; environmental and traffic functions; assistance in times of emergency; crime prevention and conciliation and conflict resolution (Morgan and Newburn, 1997). By attempting to reduce the fear of crime and enhancing the perception of security, the police also play an important role in supporting the quality of urban life (Moore and Poethig, 1999). By moving away from the traditional model of policing into an era of a “new policing paradigm” (Carmona and Grönlund, 2003), contemporary police forces have a role much more akin to a partnership with their local communities.

Whilst this model of policing has significant benefits to the wider public, Moore and Poethig (1999) argue that the contributions that the police make to the quality of urban life is not broadly recognised by the public. They claim that this is due to the sense of secrecy, concealment and enforcement that has traditionally surrounded the police force. By engaging in community focused, locally targeted policing practices, the police can aim to alter these negative perceptions the public hold, and show residents the benefits that the police bring to their daily lives.

From the above discussion, it is clear that the police must maintain the public’s perception of them as both the legitimate guardians of the UK, as well as “community partners”, in order that public confidence in policing can be improved. We now examine

¹¹ Legitimacy in this context refers to the perceptions held by the public that the police have the right to be recognised as a figure of authority, with the ability to exert control over certain aspects of their lives (Habermas, 1975).

how this important issue has been measured in the UK, as well as how the term “public confidence” has evolved in the police PMM landscape.

4.3 The Measurement of Public Confidence in the UK

4.3.1 The British Crime Survey/Crime Survey of England and Wales

Public confidence in the UK has been assessed on a national scale since 1982 using a large-scale, interview-based survey, previously called the British Crime Survey (BCS), but now referred to as the Crime Survey for England and Wales (CSEW).

The BCS was a nationally representative survey carried out on behalf of the UK Home Office, containing information about both levels of crime, and public attitudes to crime and the criminal justice system. Initial implementations of the BCS sampled approximately 10,000 people per year. Following a methodological review in 2001 based on the work of Lynn and Elliot (2000), the sample size increased to approximately 46,000 core adult interviews place, along with the addition of approximately 2000 interviews with young adults aged 16-24 (Bolling, Grant and Donovan, 2009). From 2012, the British Crime Survey was renamed the Crime Survey for England and Wales. This change of name followed the transfer of responsibilities for the survey from the Home Office to the Office for National Statistics (ONS), and reflected the true geographical coverage of the survey¹² (Office for National Statistics, 2012a). Apart from a reduction in the sample size from 46,000 core interviews to 35,000 interviews, the survey remains mainly unchanged.

The information obtained by the BCS/CSEW survey has an important difference to that which is collected and self-reported by UK police forces, in that it assesses the public’s opinion on various aspects of the criminal justice system, as well as providing another view of crimes occurring in their area. Knowledge of this information is vitally important for police forces, as it gives them a broader view of crime in their area than can be gleaned from Recorded Crime Statistics alone, due to the differences between reported and unreported crime; known as the "dark figure" of crime (Hough and Mayhew, 1983).

¹² Scotland was previously assessed in the BCS but since the late 1980s it has been covered by its own survey.

Chapter 4. Public Confidence in Policing

Levels of confidence in the UK police have waxed and waned significantly since their first assessment in the British Crime Survey (BCS) in 1982. This dropped from an initial level of 90% (Hough and Mayhew, 1983), to 53% in 2000 (Mirlees-Black, 2001). However, there has recently been a trend of rising levels of public confidence in the police. In 2010, the confidence figures rose to 57%, in 2011, these increased slightly to 59%, (Home Office, 2011) and the latest figures available from the Crime Survey of England and Wales (CSEW) show a further increase to 62%¹³ (Office for National Statistics, 2012a).

The questions used to assess public confidence within the BCS/CSEW have changed significantly over the last decade. From its inception in 1982, up to 2002/2003, the question used as a measure of public confidence was “*Taking everything into account, would you say the police in this area do a good job or a poor job?*” In 2003/2004, the question relating to public confidence was changed in order to improve data quality, and to enable estimates of confidence at a police force level. It was reworded to ask the public: “*taking everything into account, how good a job do you think the police in this area are doing?*”, with participants offered a wider range of responses than in previous versions of the survey. However, this change meant that the figures before and after this period are not strictly comparable with each other (Parfremment-Hopkins, 2010), making tracking changes in public confidence over time difficult.

Additional questions were added to the survey in 2004, with participants asked to what extent they agreed or disagreed with the following statements:

- “the police in this area can be relied on to be there when you need them”;
- “the police in this area would treat you with respect if you had contact with them for any reason”;
- “the police in this area treat everyone fairly, regardless of who they are”;
- “the police in this area can be relied on to deal with minor crimes”;
- “the police in this area understand the issues that affect this community”;

¹³ Changes to the methodology of the 2011/2012 Crime Survey for England and Wales (CSEW) mean that these latest figures are not directly comparable due to the removal of some questions preceding them (Office for National Statistics, 2012a).

Chapter 4. Public Confidence in Policing

- “the police in this area are dealing with the things that matter to people in this community”;
- “taking everything into account I have confidence in the police in this area”

In 2007, two questions were added to reflect the PMM priorities of the New Labour government of the time (see section 3.4.2) regarding partnership working between the police and other community safety bodies. Participants were asked to what level they agreed with the following statements:

- “the police and local council are dealing with the anti-social behaviour and crime issues that matter in the area”;
- “the police and local council seek people’s views about the anti-social behaviour and crime issues that matter in the area”*

The first of these two questions was used as the sole, top-down performance target in the police from 2008, and was reflected in the national police PMM strategy as Public Service Agreement (PSA) 23. For the 2008/2009 BCS, one additional question was added, asking participants to what extent do they agree to the following statement:

- “the police and local council keep me informed about how they are dealing with the anti-social behaviour and crime issues that matter in the area”*

In 2011, the two questions asking how the police and local council seek people’s views and keep people informed about how they are dealing with issues¹⁴ were removed from the CSEW during the annual review (Office for National Statistics, 2013). The old PSA 23 question remains in use to measure the joint perceptions of the police and the council, although the current “headline” measure of public confidence is now, once again: “*taking everything into account, how good a job do you think the police in this area are doing?*”. Despite the overall confidence “target” being dropped in 2010, the results continue to be monitored by both HMIC, and the performance departments of local forces.

¹⁴ Marked with an asterix above

4.3.2 Concerns with Using BCS/CSEW Data to Measure Public Confidence

The changing nature of the questions used over the development of the BCS/CSEW has meant that the term “public confidence” with reference to policing in the UK becomes difficult to interpret. All of the above-mentioned questions could be considered to be measuring public confidence to some extent; however, the major problem occurs when one particular question is chosen as “the confidence target”, as in the case above of PSA 23 becoming the sole target for the police forces of England and Wales.

This has implications for comparing studies of public confidence developed using UK data, as authors have used different “overall” measures of public confidence depending on the particular target in favour at the time (cf. Jackson and Bradford 2009; 2010). Whilst this may have been useful at the time by reflecting current PMM priorities, it means that these studies cannot be easily compared with each other, and leads to a degree of confusion in the literature as to what we mean by “public confidence”. This is further compounded by studies assessing public perceptions of the police in countries other than the UK, which have instead developed their own surrogates for confidence instead of using the overall measures of public confidence from the UK system (cf. Hinds and Murphy 2007; Dukes and Portillo 2009).

Despite these issues, Jackson and Bradford (2010) have supported the use of the BCS/CSEW data in assessing public confidence. They claim that despite the problems identified by (Myhill et al., 2011)¹⁵ in using a single indicator measure as a proxy of public confidence, questions used in the BCS to evaluate public confidence do tap into respondents’ feelings of institutional trust to a certain extent. They therefore argue that the BCS/CSEW is a valid methodological tool for assessing public confidence in the police.

Aside from these issues, the BCS/CSEW data would not be suitable for use in the present study for two main reasons. Because the BCS/CSEW must be able to provide

¹⁵ Myhill et al. (2011) claim that the use of a single measure indicator can misrepresent respondents’ views by not taking into account the multifaceted nature of confidence, and may lead to an underestimation of public support for the police due to the duality of the PSA 23 measure which asks about the police and the council in one item.

relevant information on a national basis, it is not able to assess issues at a local level; for example, the particular issues that are important to residents in York. Even if data for these questions were available, the sample size of York residents available from the BCS/CSEW is not sufficiently large for our purposes, and is not available at a geographical level that would make testing the homogeneity of the confidence frameworks in York possible.

The following section aims to demonstrate that as well as the secondary data available to us being insufficient to assess the drivers of public confidence in York, previous studies carried out in this area cannot be relied upon to show what the drivers of public confidence could be in the specific context of York.

4.4 The Assessment of the Drivers of Public Confidence

4.4.1 Classification of Studies

From reviewing the public confidence literature, we can organise studies examining the drivers of public confidence into three main streams, based upon their methodologies.

The first type of study assess several potential public confidence drivers, but does this using a methodology other than Structural Equation Modelling (SEM). This could either be through qualitative evaluations of public confidence (Hough, 2003; Shapland, Atkinson, Atkinson et al., 2007) or, more commonly, with quantitative assessments of public confidence using techniques such as linear regression, or multinomial logistic regression analysis. Two important examples of these studies are Myhill and Beak's 2008 analysis of the 2005/06 BCS (Myhill and Beak, 2008), and Thorpe's 2009 analysis of the 2007/2008 BCS (Thorpe, 2009), which used British Crime Survey data to carry out thorough assessments of the potential drivers of public confidence on a national scale. Unfortunately, studies such as these are unable to assess multiple dependent variables in a single model and fail to take into account measurement error in their calculations. As we demonstrate in Chapter 9, public confidence is an inherently multifaceted and complex issue that cannot be adequately understood through simply assessing the effects of one variable at a time on public confidence; therefore, these studies are only suitable for providing us with background information as to potential studies to investigate.

Chapter 4. Public Confidence in Policing

The second type of study uses an SEM methodology¹⁶ to assess confidence, but fails to use the methodology to its full potential. This could be because they only assess one driver of public confidence in a model (Skogan, 2009), or do not carry out a full evaluation of the structural paths in a model; stopping their assessment at the Confirmatory Factor Analysis (CFA) stage (Stanko and Bradford, 2009). Whilst these studies are more relevant to the current investigation than the first stream of literature, and can provide a robust analysis of a single potential driver of confidence, these studies alone are not enough to fully understand confidence in any practical sense, due to their failure to consider a wide enough variety of factors in their investigations.

The third type of study assesses multiple factors in their investigations, and use a full SEM methodology either as a tool to explore the specific drivers of public confidence, or as a framework to explain public confidence in general. Whilst the choice of methodology and the overall goal of these studies is the same as the present investigation, the exact application of the methodology may be slightly different. We aim to provide an evaluation of these studies, and demonstrate how their conclusions as to the most important drivers of public confidence may not be able to be applied in the specific context of York.

Whilst we focus our review on this third stream of the public confidence literature, we cannot overlook the importance of the first two streams of the literature discussed above. We use the results that they provide to guide our selection of factors chosen for further examination, and to guide our evaluation of the third literature stream. We address the specific relationships that these studies suggest between the independent factor under investigation and public confidence, in our factor conceptualisations shown in section 4.5. In addition, Table 10, presented in section 4.4.3, shows a summary of all of the papers explored throughout this thesis, in terms of the evidence they have provided as to the potential drivers of public confidence in the police.

¹⁶ We discuss how SEM is the most appropriate methodology for assessing the drivers of public confidence in Chapter 5.

4.4.2 Evaluation of SEM Investigations into the Drivers of Public Confidence

Understanding what affects public confidence in the police of York is a task made difficult by a number of issues. In this section, we will demonstrate how these issues have led to SEM assessments of the drivers of public confidence being carried out that are either not sufficiently relevant to York, or methodologically sound enough, to truly rely on the drivers of confidence they suggest as being relevant to the current investigation. We propose that this is caused by a combination of three issues:

- How the term “Public Confidence” is conceptualised;
- General methodological issues including:
 - The specific locations of public confidence assessments;
 - The number of factors being assessed;
- Methodological issues specific to Structural Equation Modelling, including:
 - The use of single item factors;
 - Under-identified factors;
 - A failure to consider total effects in the model

We now examine the third stream of literature, and evaluate them through the lens of these three key issues¹⁷. In doing so, we will demonstrate that there is a lack of understanding of the drivers of public confidence in smaller urban areas such as York, and that the current research is critical in developing a methodologically reliable, holistic understanding of the complex interactions between public confidence and all the factors that affect it. The graphical representations of the structural models discussed below are shown in Appendix A: “Previous SEM Models of Public Confidence”.

4.4.2.1 *Dukes et al. (2009)*

Dukes et al. (2009) present an SEM investigation into the drivers of public perceptions of the police in the city of Colorado Springs; a medium sized American city with a population of 393,000 residents. Two SEM models are discussed, which both use primary data with sample sizes of 3591.

¹⁷ The following section refers to specific methodological issues present in these studies. The reader is referred to section 5.4, where these issues are explained in detail. Where appropriate, reference is also made to specific sections of the analysis where the issue in question is discussed.

Whilst they do not mention public confidence specifically, the conceptualisation of the factors they use to represent citizen satisfaction with police services is very similar to our conceptualisation of public confidence in how it represents an overall “job-rating” of the police around a number of factors (see section 4.5.1). Both models use a three-item latent variable¹⁸ named “Satisfaction with police services” as the public confidence surrogate, however, the item composition of this variable changes between the two models; making comparison between these two models difficult. The first model they present (Figure 14) examines a five factor latent variable model with evidence of two factors having a significant effect on overall perceptions of police satisfaction: neighbourhood safety and perceptions of police response. The second model (Figure 15) examines 12 latent variables in a more complex investigation, and reveals that perceptions of safety in the neighbourhood, perceptions of police effectiveness, and an overall “confidence” in the police department as a whole, have significant effects on the public confidence equivalent. All relationships presented in the models are significant at a stringent significance level of $p < .001$.

Whilst the model fit indices¹⁹ presented for both models show good overall fit statistics, two of the factors in the first model and four of the factors in the second model only use two items per factor, therefore are statistically under identified,²⁰ leaving questions about the validity of these factors. Total effects²¹ are not discussed for either model. Despite these limitations, the methodology provided is generally robust, although the location of the study means that the results are not entirely applicable to the present investigation of York.

4.4.2.2 *Hinds and Murphy (2007)*

Hinds and Murphy (2007) use a postal survey of 2611 Australian respondents from a “medium-sized Australian city” to evaluate the perceptions of procedural justice on perceptions of police legitimacy, and overall police satisfaction. The SEM model

¹⁸ A latent variable is something that is not directly measured through a survey/interview, but represents several observed variables, See section 5.4.2.2 for further details.

¹⁹ Model fit indices, also known as Goodness Of Fit (GOF) indices, are a measure of how well the proposed model fits the inputted data. Details of commonly used GOF indices are provided in 5.4.2.2

²⁰ See section 5.4.3.2 for details of model under-identification.

²¹ See section 9.4.4 for a discussion of total effects.

presented (Figure 16) is a nine-factor model; however, four of these variables are demographic control variables. Of the remaining five factors that are examined, one of these uses only two observed variables, and is therefore statistically under-identified. The factor representing overall satisfaction with police services is a single-item factor, meaning that measurement error is not taken into account at all for this factor²². Whilst the authors claim that perceptions of procedural justice, perceptions of overall police performance, and perceptions of legitimacy all have strong, significant effects ($p < .001$.) on overall satisfaction, there are major issues relating to the SEM methodology that call these results into question.

Aside from the use of single-item and under-identified factors, a Confirmatory Factor Analysis (CFA) performed prior to the structural model phase showed the overall satisfaction measure to load strongly onto the legitimacy factor. Despite this failure to prove convergent validity (see section 5.4.2.2), they proceed to a structural analysis, and present model fit indices that suggest a perfect fit of the data to the model. This perfect fit suggests an irredeemable problem with the model estimation process, and, combined with the other methodological issues present, means that the relationships suggested in the model cannot be relied upon to give accurate results for the drivers of public confidence in the sample in question, let alone in the context of York.

4.4.2.3 Jackson and Sunshine (2007)

Jackson and Sunshine (2007) present two SEM models designed at evaluating a number of drivers of public confidence in Tynedale, a rural area of North-East England. They mention that 1,023 postal questionnaires were received in total, but that only half of the total number of 5,906 surveys were designed to test the two models presented in this study. Although exact sample sizes for the models presented here are not given, it can be no larger than 511²³. As opposed to the studies by Hinds and Murphy (2007) and Dukes et al. (2009), public confidence is directly referred to by name in this study and the same measure of public confidence is used for both models. However, they refer to public confidence as two, separate multi-item latent factors called “satisfaction with police effectiveness in cutting crime” and “satisfaction with police engagement with the

²² See section 5.4.2.2 for a discussion of measurement error.

²³ Total sample size of 1,023 divided by two.

local community”. Whilst this conceptualisation of confidence takes into account the multifaceted nature of public confidence, it is being assessed in two separate factors and therefore cannot be described as one concept, especially given the results of the CFA presented, which show a clear separation between these two factors.

The first model (Figure 17) they present is a nine-factor model, with all factors having a minimum of three items per factor (therefore being fully identified). This model tests the fear of crime as the only direct predictor on the two measures of “public confidence”, and shows that respondents’ environmental perceptions shape perceptions of a worry about crime, which in turn has a significant relationship on both police satisfaction and perceptions of police engagement with the community. The second model they present (Figure 18) examines the impacts of perceptions of procedural justice, social cohesion, and social identification with the police (all factors being fully identified), on the two measures of confidence, with all factors showing as significant predictors of these two measures.

For both models, the fit statistics presented suggest acceptable fits of the model to the data, however, the levels of significance that are used for the structural paths are only significant at the $p < .05$ level, instead of the more stringent $p < .001$ level as used in Dukes et al. (2009). The wider applicability of the results presented in the models is reduced, however, by the failure to integrate the two separate models and provide a more holistic explanation of the drivers of public confidence in the sample.

4.4.2.4 Jackson and Bradford (2009)

Jackson and Bradford (2009) present two models of public confidence, based upon analyses of two different sets of secondary data. The first model presented (Figure 19) uses a national sample of 3,650 respondents from the 2003/2004 sweep of the British Crime Survey in a 7-factor model, assessing the impact of multiple factors on an overall measure of public confidence. The public confidence factor is conceptualised as a single-item factor, using the newly developed BCS question from 2003/2004 (see section 4.3.1): “*taking everything into account, how good a job do you think the police in this area are doing?*”. The drawbacks related to the use of a single item measure of confidence are recognised by the authors. All other factors in the model use multiple

indicators, transformed using ordinal regression, to create what are essentially summated scale, observed variables for use in the structural model. Whilst not made clear in the discussion, this limits the validity of the results by failing to account for any measurement error in the structural model²⁴. The model shows that perceptions of neighbourhood informal social control, social cohesion and worry about crime all have significant effects ($p < .05$) on overall confidence.

Figure 20 shows the second model presented, which uses a sample of 2,844 responses to the Metropolitan Police's Safer Neighbourhood Survey. The sample was drawn from seven wards across London, and is claimed to be socio-demographically diverse. This model is considerably more robust than the first model, as it uses a 7-factor, fully identified model, with all indicators detailed in the paper. However, the conceptualisation of "confidence" in this instance is a measure of general police effectiveness, which the authors recognise forms only one element of "overall" confidence. Significant drivers ($p < .05$) on the "confidence" factor are shown to be perceptions of neighbourhood informal social control, social cohesion, worry about crime, concerns about long-term social change (equivalent to social cohesion), and interviewer assessments of neighbourhood disorder.

No issues are found relating to the fit indices presented for either model, and the limitations of the first model are negated somewhat by a brief discussion on the mediating and total effects present in the model. However, the methodological issues identified above, in combination with the wildly differing locational characteristics of the two studies to York, limit the applicability of the results to the present investigation.

4.4.2.5 Jackson et al. (2009)

Jackson, Bradford, Hohl et al. (2009) use data ($n = 1,879$) drawn from three years of the Metropolitan Police's Public Attitudes Survey to provide a comprehensive assessment of the drivers public confidence (Figure 21). Although nine factors are assessed in the model, they are single-item factors. Whilst it is implied that at least some of these items

²⁴ Details of the exact factor composition for each item is not given in the paper, therefore it cannot be assessed whether additional problems of factor/model under-identification are present.

are constructed from summated scales as in Jackson and Bradford (2009), the composition of a number of factors in the model is not discussed, and others (including the “overall” measure of confidence²⁵) are stated as utilising data from single survey questions. The authors also claim to examine a broader concept of public confidence through the utilisation of perceptions of police effectiveness, community engagement and fairness “building” an overall measure of confidence. Despite this claim, this path analysis only serves to demonstrate that these three conceptually different factors are all drivers of the overall (single-item) measure of confidence. To substantiate their claims of a broad measure of confidence, it would be necessary to test a model with a multiple-item latent factor of overall public confidence; something that they have failed to do.

Setting aside the issues we have covered regarding the use of single-item indicators and under-identified factors, the model is useful in showing that apart from the three elements of police effectiveness, community engagement and fairness, the only other factor to predict on an overall measure of public confidence ($p < .05$) in their model is public perceptions of neighbourhood/community disorder.

4.4.2.6 Jackson and Bradford (2010)²⁶

Jackson and Bradford (2010) build upon the work of Jackson et al. (2009) by using data drawn from the 2009/2010 Metropolitan Police’s Public Attitudes Survey ($n = 3,898$) to develop the second half of the model shown in Figure 21, by producing a structural model using four fully identified latent factors (Figure 22). They conceptualise public confidence using three items used in the BCS/CSEW data and the Public Attitudes Survey:

- *“How much would you agree or disagree that the police and local council are dealing with the anti-social behaviour and crime issues that matter in this area²⁷?”*;

²⁵ “Taking everything into account, would you say the police in this area do a good job or a poor job?”

²⁶ The model shown here is discussed in Jackson and Bradford (2010) as well as (Bradford, 2010) which is an extended, pre-publication version of the paper, providing additional detail.

²⁷ This is the “PSA 23” measure that was previously used as the overall target of police performance.

Chapter 4. Public Confidence in Policing

- *“Taking everything into account, how good a job do you think the police in this area are doing?”*;
- *“Taking everything into account I have confidence in the police in this area”*

From all of the studies we have discussed, this is the only example of a fully identified factor used to assess a truly “overall” multi-item measure of confidence. In addition to this confidence conceptualisation, the three factors of police fairness, police effectiveness and police-community engagement are all fully identified, and shown to load significantly ($p < .05$) onto public confidence. This demonstrates the ability of a latent factor consisting of multiple “overall” measures of confidence to accurately conceptualise a wide range of perceptions that lead to an overall view of confidence in the police.

An examination of the fit indices and other potential methodological issues in the study revealed nothing of concern; however, the model is limited by its inclusion of only four latent factors explaining public confidence. Whilst useful for theory building purposes, the lack of inclusion of any other potential public confidence drivers in the model reduces its overall applicability and over-simplifies this complex concept.

4.4.3 Summary of Public Confidence SEM Studies

Table 9 presents a summary of the above evaluation, compared with the proposed analysis of the present investigation. This highlights the fact that relying on the existing studies to inform us about the possible drivers of public confidence in York would be unsuitable, and that a methodologically robust, locally based analysis is essential in order to answer the proposed research questions.

Chapter 4. Public Confidence in Policing

Authors	Conceptualisation of “Public Confidence”	Factors Influencing Confidence. “Perceptions of...”	General Methodological Issues			SEM Specific Issues	
			Sample Characteristics	Number of Factors Assessed	Primary or Secondary Data	Single-item/ Under-identified Factors Present?	Total effects Considered?
Dukes et al. (2009)	Three item composite measures named “Satisfaction with police services”	Neighbourhood safety, police response, police effectiveness	Mid-sized American city. Population: 393,000, sample size: 3591	4/12	Primary	Under-identified factors	No
Hinds and Murphy (2007)	Single-item factor of overall satisfaction with police services	Procedural justice, legitimacy, overall police performance	“Medium-sized Australian city” (population size not given), sample size: 2611	4	Primary	Under-identified factors and single-item factors	No
Jackson and Sunshine (2007)	Two separate multi-item factors of police effectiveness, and police-community engagement	Worry about crime, procedural justice, social cohesion, social identification with the police	Rural area in North East England, Population: 58,808, sample size: ≤511	9/5	Primary	No	No
Jackson and Bradford (2009) Model 1	Single item measure of confidence from the BCS	Neighbourhood informal social control, social cohesion and worry about crime	National survey, sample size: 3,650	7	Secondary	All single item factors.	Yes (not discussed in detail)

Chapter 4. Public Confidence in Policing

Jackson and Bradford (2009) Model 2	Multi-item measure of “police effectiveness”	Neighbourhood informal social control, social cohesion, worry about crime, concerns about long-term social change and interviewer assessments of neighbourhood disorder Jackson and Bradford (2009) Jackson and Bradford (2009) Jackson and Bradford (2009) Jackson and Bradford (2009)	Seven London Wards, sample size: 2,844	7	Secondary	No	No
Jackson et al. (2009)	Single item measure of “overall confidence” from the BCS	Police effectiveness, police-community engagement, police fairness, neighbourhood disorder	Combined data from London based survey, sample size: 1,879	9	Secondary	Under-identified factors and single-item factors	No
(Jackson and Bradford, 2010)	Multi-item measure consisting of several “overall” measures of confidence	Police effectiveness, police-community engagement, police fairness	Combined data from London based survey, sample size: 3898	4	Secondary	No	No
Present Study	Multi-item measure consisting of several “overall” measures of confidence and perceptions of police reliability	Presented in Chapter 8 and Chapter 9	York , sample size: 1,322	8	Primary	No	Yes (detailed analysis)

Table 9 Summary of Public Confidence Modelling Studies

The results of this review have indicated a gap in the literature as to what could affect public confidence in a smaller urban area such as York, and highlights the need for the requirement to carry out an independent, investigation of the factors affecting public confidence in the city.

4.5 Factors Assessed in the Research

The confusion present in the SEM public confidence literature shows that the concept of public confidence is a complex and multi-faceted issue. In order to investigate it in a meaningful manner, a combination of factors must therefore be employed in order to assess public confidence in a holistic manner within York. Based upon the above described review of the evidence of the drivers of public confidence (summarised in Table 10), we propose the examination of a number of factors. This section will explain each factor chosen for investigation in York with reference to the hypothesised link to public confidence, and examine the choice of survey questions that have been used to compose the factors. Appendix C: “Original Factor/Variable Key” shows the item composition of each factor as originally conceptualised, and Appendix D: “Complete Factor/Variable Key for SEM” shows the final composition of all factors and their associated items after a number of items were removed during the Exploratory Factor Analysis and Confirmatory Factor Analysis stages.

4.5.1 Public Confidence (PCON)

It is clear that public confidence plays an important role in the British policing model, not just as an indicator of performance in the PMM landscape of the police, but also as a key concept underpinning two fundamental principles of policing. By examining how public confidence has been historically measured by the BCS/CSEW (section 4.3), and examining the previous studies that have used SEM to analyse public confidence (section 4.4), we have seen that there are a number of conceptual and methodological issues that have made it difficult to study the drivers of public confidence in a rigorous manner. We now show how we have developed the public confidence factor “PCON”, used as the main dependent variable in our SEM models, in a manner that takes into account the multifaceted nature of public confidence, whilst also allowing for a methodologically sound assessment of the drivers affecting public confidence in York.

As shown by the studies examined in the previous section, there is neither a consensus in the literature as to the true definition of public confidence, nor an understanding of how it can be accurately measured. Jackson and Bradford (2010) demonstrate that public ideas about the police “*do not constitute one homogenous mass*” (p. 245). As public confidence is well recognised as being a multifaceted issue, consisting of a combination of a number of perceptions about the police (Sunshine and Tyler, 2003b, 2003a), using a single-indicator item to represent public confidence fails to take into account its inherent complexity (Myhill et al., 2011). This means that it would be impossible for accurate perceptions of the drivers of confidence to be measured using SEM. Shah and Ward (2007) state that the only time a single-indicator construct is sufficient for use in an SEM methodology, is when one single item can perfectly represent a concept. This is due to the previously identified issues of factor under-identification, and a failure to account for measurement error in analysis.

Despite the methodological and theoretical weaknesses inherent in using a single item factor to represent public confidence, the only study which has used a single, fully identified latent factor to represent a truly “overall” measure of confidence is Jackson and Bradford (2010). Other studies (Jackson and Sunshine, 2007; Jackson et al., 2009), which have claimed to assess public confidence in a more holistic manner have used multiple factors in an attempt to represent the broader nature of public confidence. However, given the methodology of SEM, this simply shows how the two factors are conceptually different from each other, and therefore cannot represent the same issue.

Instead of using a single-item measure and treating it as a latent factor, or claiming that two or more factors can somehow “combine” to represent an overall measure of confidence, the present study treats public confidence as a single, fully identified, latent factor in itself. As well as asking locally adapted versions of the two core BCS/CSEW questions, consistently used to assess public confidence²⁸, a separate set of questions were asked relating to police “reliability”. These questions were designed to tap into the public confidence manifest in a more detailed and nuanced way than the “primary

²⁸ “Taking everything into account, I have confidence in the police in York”, and “Taking everything into account, I think the police in York are doing a good job

Chapter 4. Public Confidence in Policing

assessment” questions have done in previous studies, therefore enabling a fuller picture of public confidence to be assessed during the SEM analysis. This set of questions was aimed at assessing how reliable respondents felt the police were on the public facing elements of policing. These elements include the police response to emergencies, their ability to sort out problems, and the effectiveness of the police in reducing crime. Reliability is an important contributor to the concept of public confidence in this study. Being confident in the police means being certain that they will engage in the activities they are supposed to, in a consistent, justified manner. Reliability is therefore used as a surrogate to confidence in the development of the overall confidence measure in order to enable a broader view of confidence to be measured by the survey instrument. These items of reliability are combined to provide a ten-item factor of confidence (reduced to six items in CFA), giving a broader assessment of the public confidence manifest than the “overall” questions on confidence could do themselves.

Assessments of public confidence using a similarly broad range of items have been limited. Aside from Jackson and Bradford (2010), no other SEM studies have assessed public confidence like this. Expanding our search to the first two streams of literature discussed in section 4.4.1, Ren, Cao, Lovrich et al. (2005) and Tyler (2001) both used multi-item measures of confidence in linear regression model analyses of public confidence predictors. However, in these two cases, they were combined to form overall indices of public confidence, and the individual items were not accounted for, as would have been possible in an analysis using SEM.

By conceptualising a public confidence factor combining the traditional “overall” measures of confidence, alongside elements of reliability, fairness and effectiveness, we provide a more holistic measure of public confidence than has been examined in previous studies, which will allow us to more accurately determine the drivers of this complex issue in the specific location of York.

4.5.2 Police Dealing with Local Issues (PDEAL)

In this study, the items associated with PDEAL ask residents how effectively they perceive that the police deal with five key concerns in York (burglary, vehicle crime, criminal damage, violence, and alcohol use/alcohol related crime). This factor therefore acts as a surrogate for locally orientated police effectiveness and performance: whether

the police are dealing with the issues that matter to York residents. This factor is conceptually different to that of the LAP, due to its assessment of an overall measure of how effective residents feel the police are in tackling the key issues in York as a whole, rather than the perceptions of problems in their own neighbourhood. According to Weitzer and Tuch (2005), the relationship between police effectiveness and overall perceptions of the police occurs due to the likelihood of a large proportion of people perceiving the primary role of the police as being to fight, and reduce crime. In areas where it is perceived that this role is being effectively carried out, public confidence will be high; otherwise, overall perceptions will be poor.

This link has been previously established in quantitative analysis based on national studies from the US (Weitzer and Tuch, 2005), Australia (Hinds and Murphy, 2007), and the UK (Myhill and Beak, 2008). However, the only previous work that has established this link in a local context is that of Dukes et al. (2009), who provided evidence of a positive relationship between the perceived crime fighting effectiveness of the police and overall satisfaction with police services in the city of Colorado Springs. Despite this, the study still failed to take into account the potential differences that may exist in separate locations concerning the crimes and or worries that are important to local residents.

4.5.3 Police and the Community (PCOM)

Items in the PCOM factor are designed to assess residents' perceptions of how well the York police engage with, and understand the local community. As there is no commonly agreed definition of "community policing" (Fielding and Innes, 2006), the term "community" was deliberately left open to self-interpretation by respondents in order to avoid limiting the quality of responses. For example, defining community in terms of the area in which one lives may dissuade respondents from answering whose perceptions of the term may relate to more social or socio-demographic groupings.

The engagement of the police in local communities has previously been shown to have a positive effect on public confidence in both the United States and in the United Kingdom. In the US, evidence from the introduction of a more community-focused style of policing (the Chicago Alternate Policing Strategy) (Skogan and Hartnett, 1997)

showed an improvement in the perceptions of police over a period of ten years (Skogan and Steiner, 2004). In the UK, this link is evidenced in the work of Tuffin, Morris, Poole et al. (2006) and Quinton et al. (2008) with their respective examinations of the impact of the National Reassurance Policing Programme (NRPP) and the more community focused style of policing that it entails, on public confidence. Regression analyses of British Crime Survey (BCS) sweeps by Myhill and Beak (2008) showed that perceptions of public confidence in policing are affected by perceptions of police-community engagement and problem solving. Jackson et al. (2009) also found that public judgement of police engagement with the community had the biggest impact on predicting public confidence in a multi-factor analysis of BCS data. Whilst the positive relationship between PDEAL and PCON seems well established, caution must be taken in areas of tension, as “too much” community engagement has the possibility to reduce perceptions of the police if residents perceive the policing style to be intrusive (Piquero, Greene, Fyfe et al., 2000; Thorpe, 2009).

As well as asking respondents whether the police “engage with their community,” additional questions were asked to assess whether residents thought the police understand the issues that affect their community, as well as whether they feel the police get involved in the activities of the community. This enables a more nuanced understanding of police-community interaction and engagement than can be assessed through a single question alone.

4.5.4 Police Interactions with the Public (PINT)

Items in the PINT factor represent the quality of the interactions with the police experienced by the survey respondents. It consists of seven variables that assess different aspects of a previous interaction between a member of the public and a representative of the York police. These items include perceptions of police fairness, respectfulness, and politeness alongside “softer” measures of the encounter such as whether the police appeared to be sympathetic to the plight of the respondent and whether they listened carefully to what was being said. This factor therefore assesses what is known as “procedural justice” in public-police encounters (Tyler, 2001; Sunshine and Tyler, 2003b; Tyler, 2004; Tyler and Fagan, 2008). Rather than concentrating on the outcomes of a police encounter, the procedural justice model

suggests that the public judge their encounters with the police by the fairness shown in the procedures and actions of the police they are encountering. The perceptions of fairness, and therefore the overall view of the public-police encounter is influenced by judgements of the interaction around several key issues: participation, neutrality, being treated with respect and dignity, and motive based trust (whether the police representative looking out for the best interests of the member of public) (Tyler, 2004). Procedural justice, therefore, *“links the fairness shown by police officers in the exercising of their duties to trust, legitimacy and confidence”* (Stanko and Bradford, 2009, p. 327).

The terms “fairness” and “procedural justice” are often referred to synonymously in the literature surrounding interactions between the police and the public, and evidence for either will be considered as evidence for the link between PINT and PCON. Evidence for this link comes from two main interlinked avenues. The first is how procedural justice/fairness affects the general perceptions of the police and how legitimately they are viewed, whilst the second stream of evidence deals directly with how perceptions of procedural justice, fairness and police treatment have been shown to have a more direct link to public confidence. These two concepts are inextricably linked because, as Sunshine and Tyler (2003b) discovered, perceptions of police fairness was the most important factor in determining police legitimacy, which is in turn one of the cornerstones of public confidence. This suggests that an improvement in the perceptions of police legitimacy and general judgments of the police stemming from public encounters with the police will improve perceptions of public confidence.

Evidence linking procedural justice to general public perceptions of the police and legitimacy comes from the work of Tyler (1990); Tyler (2001); Tyler (2004), Tyler and Huo (2002) , Sunshine and Tyler (2003b), McCluskey (2003), Skogan (2006), Wells (2007), Tyler and Fagan (2008) and Hough, Jackson, Bradford et al. (2010). A review of the literature by Brown and Benedict (2002) also found that contact with the police was one of the only four variables that has consistently been shown to affect attitudes towards the police. Evidence directly linking aspects of procedural justice to public confidence is provided by Hinds and Murphy (2007), Myhill and Beak (2008), Stanko and Bradford (2009), Thorpe (2009), Hohl et al. (2010), Myhill and Bradford (2012)

Chapter 4. Public Confidence in Policing

and Jackson, Bradford, Stanko et al. (2013). With respect to more specific aspects of procedural justice, Mastrofski, Snipes and Supina (1996) and McCluskey et al. (1999) found that perceptions of disrespect shown by the police led to decreased compliance to police requests.

Whilst the link between public-police interactions and public confidence is clear, what is also important to note is the asymmetry that exists between the possible impacts on public confidence arising from a negative encounter with the police, versus that of a positive one. This was highlighted by Skogan (2006) who first identified that negative encounters with the police damaged public confidence, more than positive encounters enhanced public confidence. This was tested by Bradford et al. (2009) in London, who found that whilst this asymmetry existed, evidence suggested that improving public confidence through positive interactions was still possible, a finding replicated by Jackson et al. (2013). In a longitudinal assessment of the British Crime Survey, Bradford (2011) and Jackson et al. (2013), showed that the positive effects of contact on confidence may have grown since the 1980s. According to Stanko, Jackson, Bradford et al. (2012), this could show evidence of increasingly “open-minded” perceptions of the police, with the public willing to change their views (both positively and negatively) when new evidence is presented to them. Although “*the evidence for poorly handled encounters damaging trust is almost incontrovertible*” (Stanko et al., 2012, p. 324), there still remains conflicting evidence in the literature. Miller, Davis, Henderson et al. (2004) Weitzer and Tuch (2005) and Rosenbaum, Schuck, Costello et al. (2005) found that whilst direct contact with the police was not enough to change attitudes towards the police, learning of someone else’s good or bad encounters was; i.e. it is vicarious experiences of the police, rather than the personal experiences of the police that shape people’s confidence.

This asymmetry in confidence not only exists in the context of positive and negative contacts with the police, but also between public and police initiated contacts (Ren et al., 2005; Murphy, 2009; Myhill and Bradford, 2012). Murphy (2009) found that perceptions of procedural justice and fairness was most important during police initiated encounters, whilst the actual performance of the police (efficiency, promptness, keeping people informed) was more important in public initiated encounters.

4.5.5 Local Area Cohesion (LAC)

The Local Area Cohesion Factor consists of a number of items designed to assess residents' perceptions regarding the social characteristics of their local area or neighbourhood. Specifically, it asks people to consider the level of social cohesion they perceive to exist in the area, i.e. the "community spirit". In the simple structural model, this is achieved through three items asking respondents whether they feel they could rely on people in their local areas to help them if they were in danger; whether people are willing to help their neighbours; and whether they think the local area is a "close, tight-knit community". This factor is separate to that of the local area problems (LAP) factor as it assesses only the social characteristics of the local area, as opposed to the physical signals of disorder considered by LAP. The LAC factor encompasses elements of the concept of Social Capital (Bourdieu, 1986) which views the sum of the social bonds and networks that people create as an internalised "capital", or wealth that people make use of in their day-to-day lives²⁹. In order to establish this connection between LAC and PCON, we examine the general evidence for a positive relationship between social capital and perceptions of the police, as well as more specific evidence for a direct link between social/local area cohesiveness and public confidence in the police.

Hawdon (2008) hypothesised that a person's level of social capital would influence their perceptions of the police. This hypothesis of the positive relationship between levels of social cohesion and perceptions of the police has been identified by a number of authors in both the US and the UK. In the US, this link has been established by Cao, Frank and Cullen (1996), and Ren et al. (2005), who found that perceptions of "informal collective security" was the second strongest predictor of public confidence in the police in two separate multi-factor assessment of public confidence. This "informal collective security" contained elements of social control, social cohesion and interpersonal trust and can be considered a surrogate for the LAC factor. In a study assessing the relationship between race and trust in the police, MacDonald and Stokes (2006) showed that social capital was a strong predictor of trust in the police.

²⁹ For a detailed overview of Social Capital, see Portes (1998).

Chapter 4. Public Confidence in Policing

In the UK, the direct link between social cohesion and public confidence specifically was established in Jackson and Sunshine (2007) who presented evidence from a small, rural location in England. Both multiple-regression models and SEM models have showed that social cohesion was the only consistent predictor of public confidence in policing. These findings were replicated by Jackson et al. (2009) Jackson and Bradford (2009) and Jackson et al. (2013) in multiple sweeps of both British Crime Survey and Metropolitan Police survey data. The results of numerous regression models and path analyses showed that alongside perceptions of community disorder, social cohesion and collective efficacy (also measured as part of the LAC factor) consistently had the largest effect on overall public confidence in the police.

The current evidence in the literature all suggests that positive feelings of social cohesion leads to the perceptions by residents in a local area that they are not alone, or cut off from society as a whole. Cao et al. (1996) and Jackson and Sunshine (2007) suggest that this supportive context encourages individual trust and confidence in formal institutional bodies whom they perceive to be important in maintaining social order in society, and therefore improving public confidence in the police. Because individuals consider the police responsible for defending this community social cohesion (Sunshine and Tyler, 2003b; Jackson and Sunshine, 2007), when this is perceived as low (and perceived signs of disorder are high), the supportive context can no longer exert its effect. This causes local residents to feel that the police and other bodies are failing in their duty as the “moral guardians” of their community and therefore leads to a reduction in confidence.

4.5.6 Local Area Problems (LAP)

The Local Area Problems (LAP) factor assesses the extent to which respondents perceive their area to be troubled by low-level crime and anti-social behaviour (ASB) such as petty vandalism or graffiti, rubbish lying around, people being drunk in public and people using or dealing drugs. These issues are all physical manifestations of community and social disorder, which may signal to residents of the local area that the police have lost control, or abandoned the area (Cao et al., 1996). This factor is linked to the “broken-window” hypothesis (Wilson and Kelling, 1982) and the “signal crimes perspective” (Innes, 2004a, 2004b). These concepts both deal with the notion that low-

level crime and ASB are potential indicators of danger or threat, and therefore negatively influence either the behaviour, or the attitudes of an individual; potentially leading to increases in the fear of crime held by the public or to an escalation in the type of crime that is occurring. In the case of public confidence, the hypothesised link is that an increase in the perceptions of these signal crimes/community disorder indicators will lead to a decrease in the perceptions of public confidence.

This negative relationship between community disorder and public confidence is well supported in the public confidence literature, and is often linked to the concepts of social cohesion and collective efficacy and local disorder explored in the LAC factor (Jackson and Bradford, 2009). In the US, Ren et al. (2005) and Cao et al. (1996) both provided evidence showing that community disorder was one of the most significant driver of public confidence. In the UK, evidence for the existence of this negative relationship was found in the work of Jackson and Sunshine (2007), Myhill and Beak (2008), Jackson and Bradford (2009), Jackson et al. (2009), Thorpe (2009), Myhill and Bradford (2012) and Jackson et al. (2013). All of these studies, which examined both cross-sectional longitudinal data from a variety of sources, indicated that the perceptions of community disorder was consistently a key driver of public confidence in the police. The suggestion for this relationship is similar to that explaining the link between LAC and PCON, in that the public view the police as responsible for the social and moral order of their neighbourhood and communities. If residents perceive that this social contract has been breached, perhaps due to increasing signs of visible disorder in their local area, they lose confidence in the ability of the police to control this disorder (Jackson and Sunshine, 2007; Jackson and Bradford, 2009; Jackson et al., 2009).

However, an alternative perspective of this hypothesised relationship is provided by Sindall, Sturgis and Jennings (2012) in a longitudinal analysis of British Crime Survey data. They showed that whilst community disorder was related to public confidence in cross-sectional analyses, aggregating the data over time showed that only perceptions of rising crime and property theft were significant predictors of public confidence. This suggests a more “instrumental” assessment of the duties of the police (preventing crime and ensuring public safety), instead of the “expressive” assessment proposed by Jackson and Sunshine (2007), Jackson and Bradford (2009), and Jackson et al. (2009) that the

public hold the police responsible more for the overall social and moral control of society (Sindall et al., 2012).

4.5.7 Local Area Safety (LASAFE)

The LASAFE factor consists of a number of questions asking respondents about their overall concerns of safety in their local area in different locations both during the day, and at night. As opposed to the FOC factor, which in this study deals with the perceptions of specific crime concern residents hold, the LASAFE factor provides an a measure of the overall perceptions of safety a respondent has regarding their local area. It is hypothesised that a positive relationship between LASAFE and PCON exists: as respondents feel more safe about their local area when going about their day-to-day life, their perceptions that the police are adequately upholding the “social contract” (discussed in section 8.4.2.1) are increased, and consequently, they feel more confident in the police.

An inherent problem in the literature is the intertwining nature of the factors of LASAFE and FOC. In the present study, these two factors examine two distinct factors with FOC examining specific fears of crimes occurring against one’s person or property, and LASAFE measuring a more general feeling of safety in one’s local area. Whilst this distinction is made clear here, in other studies, this distinction is either not quite so clear, or the definitions for what we refer to as “Fear of Crime” are labelled some other factor entirely³⁰. The methodological problems associated with this ambiguity, and the questions used to assess these two intertwining factors are well recognised (Hale, 1996; Farrall and Gadd, 2004; Gray, Jackson and Farrall, 2008; Farrall, Jackson and Gray, 2009), therefore in order to gain a full understanding of the concepts of local area safety and the fear of crime we use both the “old” (pre-2002) and “new” (post-2002) British Crime Survey (BCS) questions to assess worry about crime. However, as discussed above, we make the distinction between the overall worry about safety in a local area (LASAFE) and the concerns that residents have about specific crimes occurring (FOC). We conceptualise the LASAFE factor using the “old” BCS

³⁰ This disparity is shown in Ennis (1967), where the equivalent factor to LASAFE is labelled as “Fear of Crime” and the FOC factor is labelled as “Risk”

questions asking about safety in specific contexts in a local area and the “new” questions asking about worry about specific crimes to conceptualise the FOC factor.

Because of the above ambiguity, unpicking the evidence in support of this negative relationship between LASFE and PCON is made difficult. Whilst we can assume that some of the evidence relating to the FOC factor is also applicable to LASAFE, there is a small body of work specifically examining the impact of these more general perceptions of safety on the perceptions of the police. As with the literature on FOC, evidence in support of this relationship comes primarily from US based work. Analysis of national panel data by Weitzer and Tuch (2005) showed that a significant relationship existed in the data between an increase in the perception of local area safety and increased levels of satisfaction in the police overall. Dukes et al. (2009) uses a number of SEM models to analyse the drivers of public confidence in a mid-sized city in Colorado, USA over a period of four years. Consistent with the findings of Weitzer and Tuch (2005), perceptions of local area safety were found to have small but significant positive effects on overall perceptions of the police.

4.5.8 Fear of Crime (FOC)

The FOC factor assesses the fears that respondents have concerning specific crimes happening to them in their local area. These crimes are a combination of crimes against the person and property related crimes, and therefore encapsulate a broad view of a respondents’ fear of crime, but one that is separate to their perceptions of overall safety in their local area, as measured by the LASAFE factor. The literature relating to fear of crime is as large and diverse as that relating to public confidence, and can be considered a separate subject in its own right. Therefore, only the direct literature relating to the relationship between fear of crime and public confidence will be considered.

There are conflicting views in the public confidence literature concerning the effects of the fear of crime (FOC) on satisfaction with the police in general and public confidence specifically. Historically, FOC has generally been assumed to have a negative effect on the perceptions of the police; however, more recent research has indicated that this link is not quite so clear-cut when public confidence is specifically addressed as opposed to more general measures of “satisfaction”. Limited evidence has even been put forward

suggesting that a positive relationship between FOC and public confidence may not exist at all.

There is a significant body of evidence supporting the assumption that fear of crime is a driver of satisfaction with the police. Skogan (2009) refers to this as the accountability model of the FOC/PCON relationship. This supposes that local residents hold the police responsible for upholding social order and preventing moral decline in an area. When residents' worries about crime increase, they perceive that this responsibility is not being met, and therefore hold the police accountable for the perceived decline in society. Early evidence for the negative relationship between the fear of crime and police satisfaction in the US has been found in the work of Benson (1981), Davis (1990), Murty, Roebuck and Smith (1990) and Reisig and Giacomazzi (1998). More recently, support for this theory is also given by Xu, Fiedler and Flaming (2005) who concluded that public fear of crime undermines satisfaction with the police due to the belief that the police are failing to help them with their perceived problems of crime and disorder. It is interesting to note that there is no evidence stemming from the UK showing this negative relationship between the fear of crime and public confidence, despite this factor being consistently tested in UK models of public confidence.

There is an increasingly large body of evidence suggesting that the fear of crime is not a direct driver of public confidence at all. Cao et al. (1996) discovered that in a cross-sectional analysis of US data, that whilst FOC had a significant impact on public confidence, when the model was adjusted to include the effects of community disorder (LAP) and informal collective security (LAC), this impact become insignificant. Similar findings were discovered by Bennett (1994), suggesting that the relationship between public confidence and FOC is more complex than some authors make out. A time-series analysis of British Crime Survey data performed by Sindall et al. (2012), also showed that the worry of crime had no discernible effect on public confidence. Although Jackson and Sunshine (2007) found evidence suggesting that FOC affected the perceptions of police effectiveness (PDEAL) as well as perceptions of police-community engagement (PCOM), no evidence for a direct effect of FOC on public confidence was found. Further studies finding no, or mixed evidence for the relationship between FOC and public confidence in multivariate analyses of UK based data include Jackson et al. (2009) and Myhill and Bradford (2012).

It seems clear that when assessing the impact of FOC on public confidence as part of a multivariate model, and taking into account other drivers of public confidence such as social cohesion (LAC) and the perceptions of community disorder (LAP), the impact, if any, of FOC on public confidence appears to be very small. This relationship is made even more questionable by the findings of Ren et al. (2005) who discovered a small, but significant positive relationship between FOC and public confidence.

4.6 Demographic and Situational Variables

A number of socio-economic and demographic indicators have also been shown to have an effect on public confidence in policing. For example, in general, older people, women, people on lower incomes and people who have not been a victim of crime in the last 12 months were more likely to agree that the police and local councils were dealing with the anti-social behaviour and crime issues that matter in the local area (Thorpe, 2009). Whilst it is well recognised that both demographic, as well as perceptual data can impact public confidence to some extent (Cao et al., 1996; Ren et al., 2005; Weitzer and Tuch, 2005; Hinds and Murphy, 2007; Stanko and Bradford, 2009; Thorpe, 2009), these demographic and situational variables are much weaker predictors of confidence than some of the other factors assessed in our models (Thorpe, 2009; Walker, Flatley, Kershaw et al., 2009). As well as the difficulty of integrating single item measures into an SEM analysis, weightings applied to the data in order to improve the reliability of the results (see section 6.3.7) would render any analysis in terms of assessing the impact of these other indicators meaningless. Therefore, these socio-economic and demographic indicators are not assessed in the structural models of public confidence developed in this study.

Instead, in order to answer research question three: “*Is the framework of public confidence homogenous throughout York?*” we use locational data collected in the study to test whether there are differences in the framework from one area of the city to another. By doing this, we can uncover any existing subtleties in the dataset that may occur specifically due to the use of the city of York as a sample. In doing this, we partly address the literature gap identified by Hawdon (2008) by showing how the police in York can adapt their policing styles depending on the type of area they are operating in.

4.6.1 Summary of the Drivers of Public Confidence

Table 10 shows a summary of the results of the literature review on the factors affecting public confidence in policing, grouped by their associated factors chosen to assess public confidence. Whether the factor has been shown to have a positive or a negative relationship with public confidence is also indicated.

Chapter 4. Public Confidence in Policing

Driver of Confidence	Factor	Reference	Positive or Negative
Whether community policing/engagement is taking place	PCOM	(Pate, Wycoff, Skogan et al., 1986; Skogan and Hartnett, 1997; Skogan and Steiner, 2004; Ren et al., 2005; Tuffin et al., 2006; Quinton et al., 2008; Jackson and Bradford, 2010)	Positive
Whether the police are dealing with issues that matter to the community	PDEAL	(Myhill and Beak, 2008)	Positive
Whether the police could be relied on to deal with minor crimes	PDEAL	(Thorpe, 2009)	Positive
Perceptions of police effectiveness	PDEAL	(Pate et al., 1986; Weitzer and Tuch, 2005; Hinds and Murphy, 2007; Myhill and Beak, 2008; Jackson and Bradford, 2010)	Positive
Perceptions of procedurally just interactions (General)	PINT	(Tyler, 1990; Tyler, 2001; Brown and Benedict, 2002; Tyler and Huo, 2002; McCluskey, 2003; Sunshine and Tyler, 2003b; Tyler, 2004; Wells, 2007; Tyler and Fagan, 2008),	Positive
Perceptions of procedurally just interactions (public confidence specific)	PINT	(Hinds and Murphy, 2007; Myhill and Beak, 2008; Stanko and Bradford, 2009; Thorpe, 2009; Hohl et al., 2010; Myhill and Bradford, 2012; Jackson et al., 2013)	Positive
Contact with the police	PINT	(Weitzer and Tuch, 2005; Skogan, 2006; Myhill and Bradford, 2012)	Negative/ Mixed
Contact with the police	PINT	(Ren et al., 2005)	Positive
Disrespect from the police reducing compliance	PINT	(Mastrofski et al., 1996; McCluskey et al., 1999)	Negative
Fear of Crime	FOC	(Ren et al., 2005)	Positive
Fear of Crime	FOC	(Benson, 1981; Xu et al., 2005)	Negative
Fear of Crime	FOC	(Bennett, 1994; Cao et al., 1996; Jackson and Sunshine, 2007; Jackson et al., 2009; Myhill and Bradford, 2012; Sindall et al., 2012)	No effect/ Mixed

Chapter 4. Public Confidence in Policing

Perceptions of social cohesion, trust and community efficacy	LAC	(Cao et al., 1996; Ren et al., 2005; MacDonald and Stokes, 2006; Jackson and Sunshine, 2007; Myhill and Beak, 2008; Jackson and Bradford, 2009; Jackson et al., 2009; Jackson et al., 2013)	Positive
Perceptions of Community disorder/low-level crime	LAP	(Cao et al., 1996; Ren et al., 2005; Jackson and Sunshine, 2007; Jackson and Bradford, 2009; Jackson et al., 2009; Thorpe, 2009; Myhill and Bradford, 2012; Jackson et al., 2013)	Negative
Perceptions of Community disorder/low-level crime)	LAP	(Sindall et al., 2012)	Mixed
Perceptions of Local Area Safety	LASAFE	(Weitzer and Tuch, 2005; Dukes et al., 2009)	Positive
Not perceiving the crime rate in the local area to have risen a lot	LASAFE	(Thorpe, 2009)	Positive
Seeing a police officer or PCSO on foot patrol	PCOM, PINT	(Thorpe, 2009; Millie, 2010; HMIC, 2011b)	Positive
If respondent is older	N/A	(Ren et al., 2005; Hinds and Murphy, 2007; Thorpe, 2009)	Positive
If respondent identifies as BME (Black, minority or other ethnic group)	N/A	(Thorpe, 2009)	Positive
If respondent is female	N/A	(Thorpe, 2009)	Positive
If respondent is less educated	N/A	(Hinds and Murphy, 2007)	Positive
If respondent lives in a disadvantaged location	N/A	(Reisig and Parks, 2000)	Negative
If respondent is on a lower income	N/A	(Hinds and Murphy, 2007; Thorpe, 2009)	Positive
If respondent has not been a victim of crime in the last 12 months	N/A	(Thorpe, 2009)	Positive
Falling levels of deference, and growing expectations of police	N/A	(Hough, 2003)	Negative
Social identification with the police	N/A	(Jackson and Sunshine, 2007)	Positive
Perceptions of Neighbourhood informal Social Control	N/A	(Jackson and Bradford, 2009)	Positive

Disempowerment of policing managers	N/A	(Hough, 2003)	Negative
The use of restorative justice	N/A	(Shapland et al., 2007)	Positive
Media Influences	N/A	(Weitzer, 2002; Miller et al., 2004; Jackson et al., 2013)	Mixed
Improved Communication from the police	N/A	(Hinds and Murphy, 2007; Wunsch and Hohl, 2009; Hohl et al., 2010)	Positive

Table 10 Public Confidence Factor Summary

4.7 Concluding Remarks

This study has approached public confidence from a performance management perspective taking the view that, as the most stable performance indicator used in police PMM, the accurate measurement and understanding of the drivers behind this ephemeral concept are extremely important, if improvements in public confidence levels are to be achieved. In this chapter, we have assessed the importance of public confidence in modern policing work, examined how it has been measured in the UK, and provided a critical evaluation of past examinations of the drivers of confidence using SEM methodologies.

The review of the available evidence has shown us that the raw data that is currently available from the BCS/CSEW is not suitable for secondary analysis in the current research. In addition, we have shown that the previous studies assessing public confidence cannot be completely relied upon to give us accurate information as to what the drivers of public confidence could be in York. Instead, we have used their results to conceptualise a number of factors that *could* have some effect on public confidence in York. We now propose a methodology that will allow us to test these factors in a methodologically robust manner that will allow us to assess the key drivers of public confidence, achieve our overall research goal, and answer our research questions.

CHAPTER 5. METHODOLOGY

5.1 Introduction

This chapter discusses the proposed research methodology of the project. It considers the choice of research strategy, the research design and the research methods selected to analyse the data. A quantitative research strategy is deployed, in order to explore the concept of public confidence in policing within the framework of York. This is achieved using a cross-sectional survey research design, designed to assess the perceptions York residents hold regarding their local areas, the city of York as a whole, and the North Yorkshire Police operating within York. The survey data is then analysed using the specific research methods of Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM) in order to gain a holistic understanding of public confidence in York.

5.2 Quantitative Research Strategy

A multivariate quantitative research strategy is adopted in this research in order to achieve the overall aim of the research and answer the specific research questions set out in section 1.4.

We adopt a positivist epistemology³¹ for the objective measurement of the factors under explorations in the study; this enables theory to be deduced to explain the causal relationships specified in both the simple, and revised structural models of public confidence in York. According to Bryman (2012):

“...quantitative research can be construed as a research strategy that emphasises quantification in the collection and analysis of data and that entails a deductive approach to the relationship between theory and research, in which the accent is placed on testing theories” (p.36)

³¹ Positivism is an epistemological view “that seeks to explain and predict what happens in the social world by searching for regularities and causal relationships between its constituent elements” (Burrell and Morgan, 1979, p. 5). Further epistemological and ontological considerations will not be discussed here. Readers are referred to Burrell and Morgan (1975), Morgan and Smircich (1980) and Bryman and Bell (2007); Bryman (2012) for a thorough overview of research philosophies.

As we are primarily concerned with the testing of a number of hypotheses relating to public confidence in York, a quantitative approach to research is therefore more suitable than a qualitative approach in this study. A quantitative approach to the research will also allow for the development of broader recommendations and policy implications regarding potential activities the NYP could investigate in order to attempt to improve public confidence. If a qualitative approach were taken, any evidence base would, by the nature of this type of research, be much smaller and the results less generalisable.

Despite the overall quantitative approach taken, certain questions were asked in the survey, which assess qualitative elements of public confidence. The responses to these questions are used to provide additional context during the data analysis procedure, and allow for a greater depth in understanding of individual respondents' perceptions of the police, and what affects these perceptions.

5.3 Research Design

5.3.1 Introduction

“A research design provides a framework for the collection and analysis of data. A choice of research design reflects decisions about the priority being given to a range of dimensions of the research process” (Bryman, 2008, p. 46).

This research takes a cross-sectional, survey approach to the research design. The choice of this approach affects not only the data collection, but also guides the analysis of the data. Cross-sectional research is concerned with the systematic and standardised quantitative measurement of multivariate relationships in order to specify patterns of association (Bryman, 2012). As we are interested in understanding the causal relationships between the underlying factors of public confidence, at the unit level of analysis, and at a single point in time, a cross sectional research design is considered appropriate.

The choice of a cross-sectional research design also corresponds with the overall quantitative research strategy that has been adopted. Although longitudinal survey data

from the British Crime Survey³² (which assesses elements of public confidence) was available for analysis, both the questions and the geographic information available were not detailed enough to be able to answer the research questions, thus it was necessary to use primary data collection and a cross-sectional design. Whilst the use of a cross-sectional design as opposed to a longitudinal study makes the empirical proving of causal links difficult (Bryman and Bell, 2007), this issue is addressed in section 11.4.2.

An overview of this cross-sectional research design is now given. The reader is referred to the various sections of the thesis where these individual elements are discussed in greater detail.

5.3.2 Stage 1: Factor Development

It has been established in Chapter 3 that public confidence is a multi-faceted concept; with many different factors having been evidenced as having some form of effect, or influence on it. The first stage of the research design is therefore to decide on the factors that will be assessed in the models. All the factors must be distinct enough from each other to allow assessment with SEM, but are broad enough so that practical recommendations can be drawn from the results of the study. The development of these factors has been shown in section 4.5

5.3.3 Stage 2: Survey Design and Administration

The next stage of the research design process is to develop items that can reliably represent the underlying constructs created in the first stage, and design and administer a survey instrument to provide sufficient data for analysis. Section 6.2 discusses this stage in detail, including item development and testing, survey coding and the practical procedures of data collection. Ethical concerns that have been identified from the use of the survey are also discussed here.

5.3.4 Stage 3: Preliminary Data Analysis

Before the data collected from Stage 2 can be analysed using the specific tools chosen, the data must be assessed. This is shown in section 6.3, which explores the data

³² Now referred to as the Crime Survey of England and Wales

cleansing and imputation processes that are used to deal with incomplete data, discusses the issues relating to the response rate and sampling strategy, and applies suitable weightings to the data in order to ensure generalisability of the results throughout York.

5.3.5 Stage 4: Factor Analysis

Once the data has been checked for inconsistencies, and any issues resolved, it is prepared for multivariate analysis in Stage 4. The survey data is initially analysed using Exploratory Factor Analysis in order to explore, and re-define the factors conceptualised in Stage 1. These factors are then confirmed as valid and accurate measures of the data using Confirmatory Factor Analysis, which is the first phase of the two-step approach being taken towards Structural Equation Modelling in this research. Section 5.4.2 discusses the background to these tools, and the analysis of the data is shown in Chapter 7.

5.3.6 Stage 5: Simple Structural Model of Public Confidence in York

Stage 5 deals with the development of the first of two SEM models explored in this research. A simple structural model of public confidence in York is created, designed to assess which of the independent factors chosen for examination in this study (see section 4.5) have the largest overall influence on the dependent variable of public confidence. This model does not consider the possible interactions between the independent factors, and therefore is not designed to be an entirely realistic representation of how public confidence “works” within York. Instead, it designed to answer research question one³³, and guide the creation of a more complete model of public confidence. Section 5.4.3 discusses background information relating to SEM, and Chapter 8 shows the model development, results and discussions stemming from this.

5.3.7 Stage 6: Revised Structural Model of Public Confidence in York

The results of the simple structural model assist in the creation of a revised structural model of public confidence in York during Stage 6. This revised model seeks to explain how all of the factors examined in the study influence both each other, and the overall dependent variable of public confidence, in order to gain a holistic view of this complex

³³ “What are the factors that most affect people’s levels of public confidence in the police in York?”

issue at a citywide level. The revised structural model provides a framework that allows police managers within the NYP to understand how public confidence “works” in the city of York, in order that they can develop effective strategies aimed at improving public perceptions of the police. The development, results, and discussions of this revised structural model are shown in Chapter 8.

5.3.8 Stage 7: Public Confidence Framework Testing

The framework of public confidence in York is then tested in Stage 7 in order to see whether the relationships between the factors are homogenous throughout the wards of York. This testing will help ensure that any strategies or operations developed to improve public perceptions of the police are done with the knowledge that certain strategies may be more effective in one area of the city than in others, therefore allowing police managers to maximise the efficiency of these operations. The procedures, results and discussions of this testing are shown in section 9.6.

5.3.9 Stage 8: Research Implications

In addition to resolving the gap in the literature around how public confidence operates in a small urban area, this research project was designed to ensure that clear, practical recommendations could be made to the North Yorkshire Police (NYP) regarding how improvements in public confidence could best be achieved in York. In addition to this, the implications of the research in relation to effective performance management, both within the force, and nationally must be considered. Therefore, Stage 8 of the research design assesses the potential implications of the research, and provides some recommendations that can be taken forward for further examination by the NYP. These recommendations and implications to policy and practice of the research are detailed in Chapter 10.

5.3.10 Research Design Framework

Figure 5 summarises the research design in a diagram showing how each stage of the methodology is linked.

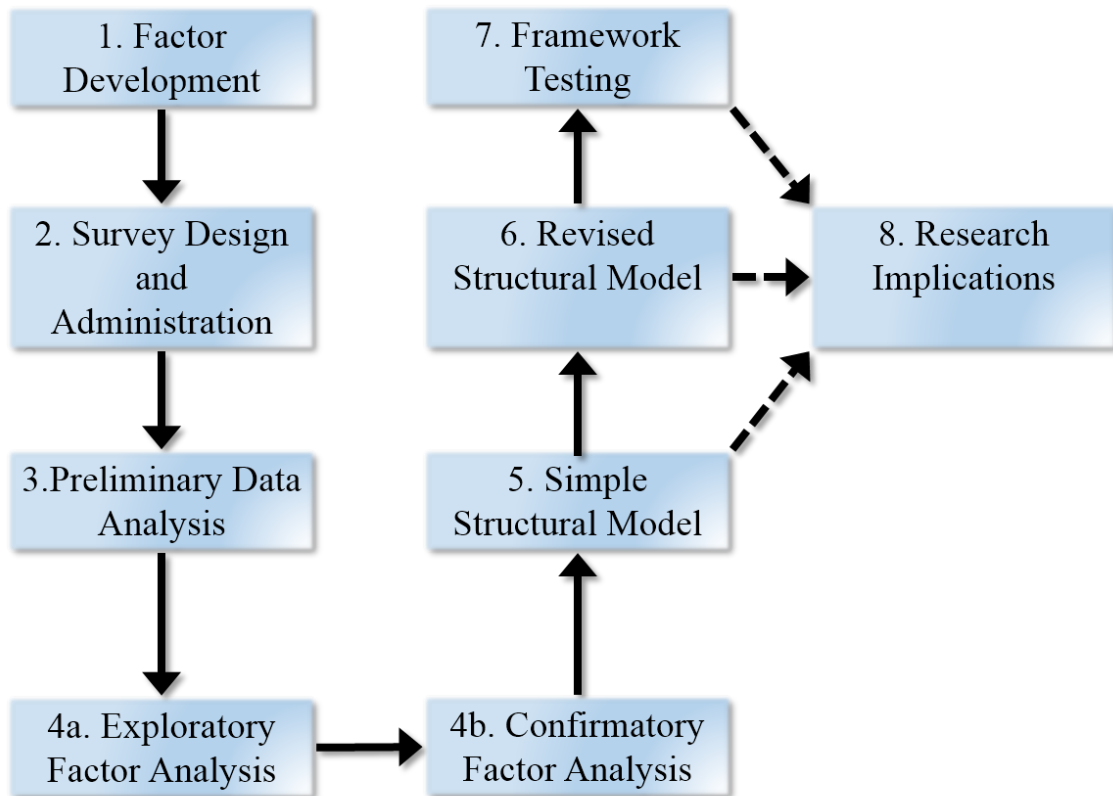


Figure 5 Research Design Framework

5.4 Research Methods

5.4.1 Introduction

This section explores the specific tools of analysis that have been chosen to enable us to achieve the goals of the study. The tools that have been selected for this analysis are Exploratory Factor Analysis, Confirmatory Factor Analysis and Structural Equation Modelling. These tools are used in a systematic process as described in the previous section, in order to analyse the cleansed survey data. The specific processes entailed in data collection, data cleansing and preliminary analysis are not examined here, but are discussed in detail in Chapter 6.

5.4.2 Factor Analysis

Factor analysis is described by Hair, Black and Babin (2010) as “*an interdependence technique, ...whose primary purpose is to define the underlying structure among the variables in the analysis*” (p. 94). Both Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) are used in the study to assess the underlying

factors or constructs³⁴ that account for public perceptions of the police in York, before these factors are tested further with SEM.

5.4.2.1 Exploratory Factor Analysis

Exploratory Factor Analysis (EFA) examines the patterns in data so that the underlying latent factors can be extracted (De Vaus, 2002). As unconstrained EFA allows for both the numbers of factors, and the item loadings for those factors to be freely estimated according to the best fit of the data, the analysis is not affected by any *a priori* constraints of the researcher (Hair et al., 2010). As it is an exploratory technique, rather than one designed for hypotheses testing, no firm conclusions as to the true nature of the factor structure should be drawn from the results before Confirmatory Factor Analysis is performed at a later stage (Costello and Osborne, 2005).

As the initial aim of EFA in this study is to find the smallest number of factors that explain the maximum amount of variance in the data, EFA is performed using Principal Components Analysis (PCA) as opposed to Factor Analysis (FA). According to Floyd and Widaman (1995), data reduction is usually achieved through PCA, as it considers the total variance in the dataset (the sum of common variance, specific variance and error variance) as opposed to just the common variance considered by FA.

Several key criteria must be confirmed during the EFA process.

- (i) *Suitability of the data*: Prior to performing EFA, the factorability of the data should be assessed as suitable by an initial examination of the correlation matrix. This should show a substantial number of correlations above .30. (Hair et al., 2010). In addition, the Bartlett Test of Sphericity (Bartlett, 1954), which tests for these correlations, should achieve significance. The Kaiser-Meyer-Olkin (KMO) value should also exceed .6 (Kaiser, 1970), showing a suitable measure of sampling adequacy (MSA).
- (ii) *Number of factors to extract*: If the number of factors to be extracted is not fixed by the nature of the study, the choice of how many factors to be retained in the analysis

³⁴ The terms “factor” and “construct” have the same meaning, and are used interchangeably throughout the thesis.

should be based upon a consideration of a number of tests (Pallant, 2007). These include Kaiser's Criterion (Kaiser, 1970), Cattell's Scree Test (Cattell, 1966) and the use of Parallel Analysis (Horn, 1965). Convergent validity of the factors can be initially assumed if each factor has an eigenvalue above one (Hair et al., 2010).

- (iii) *Factor loadings*: The determination of whether an item's factor loading is acceptable or not depends on the sample size of the data (Hair et al., 2010). As the sample size increases, the required loading for an item decreases. As a minimum value for sample sizes above 350, factor loadings should reach ± 0.3 . Tabachnick and Fidell (2007), recommend as a general rule of thumb that a value of ± 0.32 should be used as the cut-off point for inclusion of a variable in EFA.
- (iv) *Construct reliability*: The choice of the proposed factors and their item loadings can be tested using the Cronbach Alpha reliability coefficient (Cronbach, 1951). According to Nunnally (1978), a score of above 0.7 is considered to be acceptable and shows a sufficient amount of construct reliability.

By design, EFA is an exploratory technique only. Therefore, in order to test the factors and their associated item loadings predicted by the EFA, further analysis must be carried out using Confirmatory Factor Analysis (CFA) (Costello and Osborne, 2005). CFA also allows the reliability of the constructs to be tested with greater precision, and provides proof of construct validity.

5.4.2.2 Confirmatory Factor Analysis

As opposed to EFA, where the number of factors and the item loadings/cross-loadings for those factors are allowed to arrange themselves according to the data, CFA offers a stricter test of the proposed factor structure by having the researcher specify both the number of factors, and the factor loadings in the model. CFA is performed to assess how well the actual data fits with the model that has been specified. This allows us to either confirm the proposed model as valid for testing further with a structural theory (therefore fully specifying an SEM model), or reject the theory (Hair et al., 2010). As part of an overall SEM modelling strategy, CFA is referred to as the measurement model of SEM and focuses solely on the relationship between the measured items and the unobserved latent factors under consideration. Figure 6 shows a graphical

representation (path diagram) of a CFA measurement model with the simplified notations as used by Hair et al. (2010).

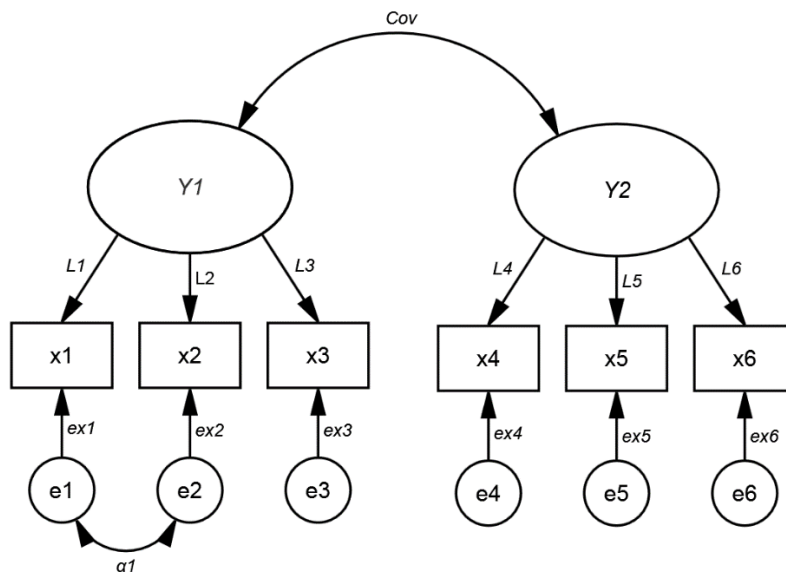


Figure 6 CFA Measurement Model Path Diagram

A CFA measurement model consists of the following components:

- **Unobserved latent variables (Y_i):** These are the factors previously found in EFA that are being taken forward for further analysis with CFA. They are also referred to as endogenous indicators and are represented by ellipses.
- **Correlation between latent variables (Cov):** In CFA, only correlations exist between latent variables. These are marked with a double-headed arrow.
- **Observed variables (x_i):** These are the observed items in the study, also referred to as exogenous indicators, and are represented by squares.
- **Factor loadings (L_i):** These are the path coefficients between a latent variable and an observed variable. They indicate the amount of impact the latent variable has in “causing” the observed variable. They are represented by single-headed arrows pointing to an observed variable, from a latent one
- **Measurement errors (ϵ_i):** Measurement error terms represent both random measurement error in the data, as well as error variance specific to each variable. As they are considered unobserved variables in AMOS, they are represented by circles (Byrne, 2010).

- **Impact of measurement error (ei):** This indicates the impact of a measurement error (ei) on an observed variable (xi)
- **Error correlations (α):** In some circumstances, the source of the measurement error of different items may be similar, therefore it would be appropriate to allow measurement errors to freely correlate (Child, 1990). These error correlations are represented by a double-headed arrow.

In order to confirm the measurement model as valid and test causality within SEM, acceptable levels of model goodness-of-fit and construct validity must be proven once the model has been estimated (Hair et al., 2010).

Goodness-of-fit (GOF) refers to how well the specified measurement model represents the inputted data. More specifically, measures of GOF aim to assess how much the estimated covariance matrix (the specified measurement model) differs from the inputted covariance matrix (the observed data). If the estimated model is similar to the inputted data then the fit will be good. If the fit between the matrices is dissimilar, then GOF statistics will fall below an accepted level and model-re-specification may have to occur in order to improve the overall fit. GOF is demonstrated by using a range of different fit indices, which are split into the three categories of absolute fit indices, incremental fit indices and parsimony fit indices. Absolute fit indices indicate the degree in which the estimated model actually reproduces the sample data, and include the traditionally reported fit index of the χ^2 -Test statistic (also known as the CMIN value) and the Root Mean Square Error of Approximation (RMSEA). Incremental fit indices indicate how much the specified model compares to an alternative baseline model that assumes all observed variable are uncorrelated (a null model). Incremental fit indices include the Normed Fit Index (NFI) and the Comparative Fit Index (CFI) which is an improved version of the NFI (Bentler, 1990; Hu and Bentler, 1999). Finally, parsimony fit indices provide information useful for comparing two models of differing complexity in order to see which has the most parsimonious fit. Parsimony fit indexes include the normed χ^2 , also known as the χ^2 to degrees of freedom ($\chi^2/d.f$) test, and the Parsimony Normed Fit Index (PNFI).

Table 11 provides guidelines of acceptable fit indices for a complex model with more than 30 observed variables and a sample size over 250 (adapted from Hu and Bentler,

1999; Shah and Goldstein, 2006; Hooper, Coughlan and Mullen, 2008). These guidelines for GOF indices are applicable for both the measurement model and structural model stages of a SEM analysis.

GOF index type	GOF Index	Recommended value
Absolute	χ^2 -Test statistic (CMIN)	NA as significant p-values expected
	Root mean square error of approximation (RMSEA)	≤ 0.07
Incremental	Normed Fit Index (NFI)	≥ 0.90 suggests good fit, ≥ 0.95 suggests very good fit
	Comparative fit index (CFI)	≥ 0.90 suggests good fit, ≥ 0.95 suggests very good fit
Parsimony	Normed χ^2 ($\chi^2/d.f.$)	≤ 5.0 but ideally ≤ 3.0
	Parsimony normed fit index (PNFI)	≥ 0.50 but used mainly for model comparison

Table 11 GOF Indices

GOF indices generally only offer guidelines of fit, and there is considerable inconsistency in the reporting of GOF indices in the literature (Schreiber, Nora, Stage et al., 2006). It is therefore recommended to report on a wide range of GOF indices in order to assess the overall fit of the model (Cheung and Rensvold, 2002; Hooper et al., 2008; Hair et al., 2010), as the over-reliance on certain fit statistics as a measure of model acceptability can lead to poor models being judged as acceptable. In addition, models must be assessed holistically (Chin, 1998) and include an assessment of construct validity as well as GOF indices.

Construct validity refers to how accurately a set of measured indicators actually reflect the latent construct they are supposed to (O'Leary-Kelly and Vokurka, 1998; Hair et al., 2010). The testing of construct validity within the measurement model stage of SEM requires an assessment of both convergent and discriminant validity (Campbell and Fiske, 1959).

Convergent validity tests the amount of variance shared by indicators of a particular construct. If the observed variables are measuring the same underlying construct, they will be highly correlated with each other (Churchill Jr, 1979), therefore an increased amount of shared variance within a factor is desirable. In CFA, evidence of convergent validity is proven based upon several factors: item-factor loadings of above .5 but preferably .7 (Hair et al., 2010), a factor's Average Variance Extracted (AVE³⁵) value being above .50, and its Construct Reliability (CR³⁶) being above .7.

Whilst convergent validity examines the similarity of items making up a factor, discriminant validity refers to how different each individual factor is from each other. If a model has discriminant validity then the constructs in the estimated model should not correlate overly highly with each other, therefore showing that they are unique in nature and capture something that the other constructs do not (Hair et al., 2010). Whilst Bove, Pervan, Beatty et al. (2009) noted that discriminant validity is supported if the construct AVE is greater than the Average Squared Shared Variance (ASV) of each pair of factors, this research uses the more conservative approach suggested by Fornell and Larcker (1981). They suggest that discriminant validity is supported only if the shared variance observed between two pairs of constructs is lower than the minimum of their AVEs. Achieving this test shows that the construct can explain more of the variance in its items than the variance shared with any other construct. Evidence of discriminant validity also provides further evidence of unidimensionality established in EFA, because if any cross-loadings are present (suggesting more than one construct is measuring the same indicator) the fit of the model will be poor.

5.4.3 Structural Equation Modelling

5.4.3.1 Introduction

Structural Equation Modelling (SEM) is a statistical methodology that takes a confirmatory approach to the analysis of a structural theory based a certain phenomenon (Byrne, 2010). As in CFA, the same approach to the “goodness of fit” (GOF) between

³⁵ AVE is calculated as the mean variance extracted of all the items loading on one factor and is therefore an overall summary of that factor's convergent validity. A value of less than .5 is an indicator that more error remains in the item than the variance extracted by the factors.

³⁶ CR is a further test of internal consistency i.e. whether all items are measuring the same construct

the specified model and the actual data is taken. However, in this second phase of the two-step SEM process (Gerbing and Anderson, 1988), the aim is to perform an examination of the structural (i.e. casual) model.

As opposed to CFA, where all of the endogenous constructs are related to each other through correlational relationships, in the structural phase of SEM, these correlational relationships are replaced with directional relationships known as path estimates that represent the hypotheses being tested in the study. They graphically depict a series of multiple linear regression equations, which identify both the direction, and the strength of the relationships between the endogenous factors. The structural model phase of SEM allows us to study the relationships between multiple endogenous factors in a study whilst also accounting for measurement errors in the overall estimation process. If the overall model fit is as shown by the GOF indices is good, and the path estimates are both significant, and in the hypothesised directions, then the model is supported (Hair et al., 2010). Figure 7 shows a simple structural model path diagram.

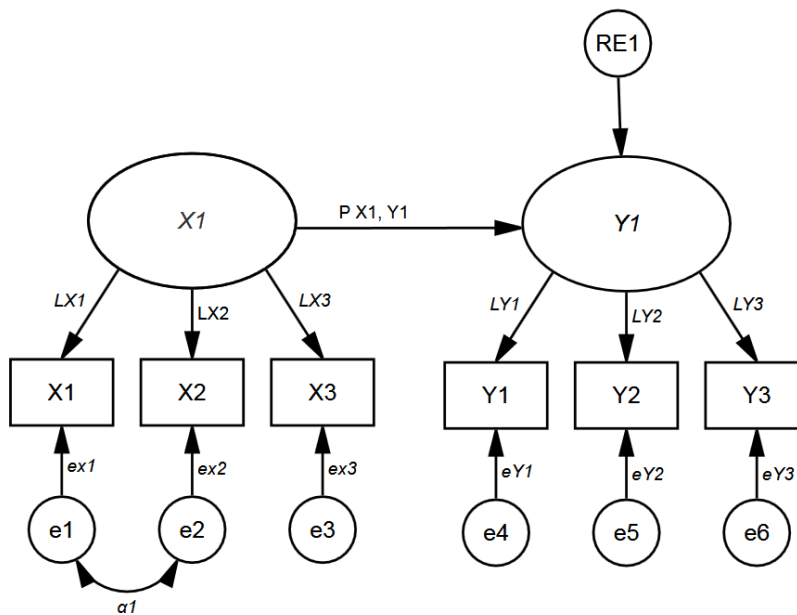


Figure 7 SEM Structural Model Path Diagram

The structural model is very similar to the measurement model shown in Figure 6, with a few key differences. As described above, the correlational relationship between the unobserved latent variables previously inherent in the measurement model is changed to

a directional (regression) estimate (P). This change is represented throughout the structural model by a change of notation between the latent variables. The independent variable is labelled as exogenous ($X1$) and the dependent variable is labelled as endogenous ($Y1$). These path estimates imply a dependence relationship between the exogenous and endogenous variables in the study. The value of P indicates the magnitude of change occurring in parameter Y for every change occurring in parameter X . The item measures and the measurement errors in the newly labelled endogenous variables are also re-labelled to reflect this change. The addition of an error measurement (RE1) to the endogenous factor reflects the fact that these endogenous constructs are not fully explained (Hair et al., 2010).

5.4.3.2 Assessing the validity of a structural model

Assessing the validity of the structural model is carried out in a similar manner to that of the measurement model; the overall GOF indices are assessed alongside the path estimates. However, as the construct validity has been proven, this does not need to be re-examined in the structural phase³⁷. This means that the items making up the latent factors are fixed; therefore, re-specifications to the structural model are limited to changing the relationships between latent factors in order to improve model fit. In addition, it is now not the path estimates between factors and items that are of interest, but the path estimates between exogenous factors and endogenous factors, i.e. the hypothesized dependence relationships. Therefore, in order to prove evidence of model validity, the overall model fit must be assessed using the same GOF indices discussed in Table 11, alongside an examination of the path estimates which should show estimates that are statistically significant, in the direction predicted by theory, and nontrivial (Hair et al., 2010).

In addition to the general model fit as indicated by the GOF indices, care must be taken to ensure an adequate number of observed variables are included for each latent variable being tested (Hair et al., 2010). Fewer than three variables per latent factor means that a structural model is statistically under-identified, meaning accurate model estimation is not possible (Long, 1983; Byrne, 2010). Even more problematic is the use of single-

³⁷ Therefore, for ease of viewing, the observed items making up the factors are usually not shown in complex models with large numbers of both items and factors.

indicator constructs in SEM models, as these ignore measurement reliability (Shah and Goldstein, 2006), (therefore negating one of the key benefits of the SEM methodology), as well as causing problems with factor identification

In summary, the structural phase of the overall SEM methodology allows researchers to display all of their hypotheses in a visual manner (the structural model) and then simultaneously test all of these hypotheses in a single step through a series of multiple linear regression equations. Assuming that there are no problems with factor/model under-identification, the hypotheses (represented by the path estimates) can be proven or disproven through a combined assessment of the overall model GOF indices, and the strength and direction of the path estimates between the constructs under examination.

5.5 Concluding Remarks

This chapter has provided the details of the research strategy taken in this study, the particulars of the research design, and the specific research methods that have been selected to explore the data.

In order to answer the research questions set out in section 1.4, we have pursued a quantitative research strategy, underpinned by a positivist epistemology in order to allow us to attempt to assess the drivers of public confidence in York. The research design discussed above has been created in order to provide evidence based recommendations for the NYP, as well as answering several gaps in the literature. Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) are used to prepare the data for modelling, and ensure accurate results can be obtained in the structural phase of modelling. Structural Equation Modelling (SEM) achieves is the core methodology used to achieve the research goals through a multivariate analysis of the primary data collected in the study.

Whilst EFA, CFA, and SEM are the main methodologies used in this study, the data collection processes and the preliminary analyses have not been examined in this chapter. These issues are now examined in Chapter 6.

CHAPTER 6. DATA COLLECTION AND PRELIMINARY DATA ANALYSIS

“North Yorkshire Police are committed to improving the service that we provide to the people of York, and we can only achieve this by seeking the views of the communities we serve. Working in partnership with the University and the Council is an excellent opportunity to gain valuable information from our communities and we would strongly encourage all residents to complete this survey”. (Madgwick, 2013)

6.1 Introduction

This chapter is structured in two sections. The first section discusses the data collection procedure in detail; including the design of the survey measurement instrument, the specific procedures of data collection and issues surrounding data protection and management. The second section explores the preliminary data analysis procedures performed prior to the use of Structural Equation Modelling (SEM) to analyse the factors being explored. This includes data cleansing processes and statistical examination of the data to ensure accurate results in the later stages of analysis.

6.2 Data Collection

6.2.1 Introduction

This section discusses the design and implementation of the data collection procedures outlined in the previous chapter. The data collected was obtained through a large-scale survey carried out in collaboration with the North Yorkshire Police (NYP), Safer York Partnership (SYP) and City of York Council (CYC). The survey was designed to evaluate the views of residents of York on a number of issues, including their perceptions of crime, their fear of crime and their attitudes towards the police.

6.2.2 Survey Design and Testing Methodology

The main method of data collection used for the analysis concerns an in-depth survey, which was distributed via various methods to different groups of York residents. The following section describes the development of the questions used, the testing process, the dissemination methods and the methods used to promote the survey in order to achieve a high response rate.

6.2.2.1 Stages in overall survey design

Due to the numerous partners involved in this study, a rigorous approach to the testing and development of the survey instrument was taken in order to secure support for the study and maximise the reliability of the survey. The different methods of development, testing, and release used in this project are shown in Table 12.

Description of Stage	Stage	Who is this carried out with?
Development of initial questions	Development	N/A
Testing initial questions	Testing	Project group (representative from each organization)
Coding and design of survey	Development	N/A
Initial test of survey usability and content	Testing	~15 academics, students and practitioners
Second test of survey with wider group	Testing	Multi-disciplinary university group of ~50 Academics/Research Students) (YCCSA)
Final changes made based on survey responses	Development	N/A
Submitted to partner organizations for approval and sign off	Approval	University of York (ethics approval) North Yorkshire Police, Safer York Partnership, City of York Council
Official launch of survey at York Crime Summit	Release	Survey open to current/recent residents of York
Survey released to Operation Spoke database	Release	6364 members of the public
Publicity	Release	Regular publicity for the survey was carried out to ensure an adequate response rate.
Close of survey	Close	N/A

Table 12 Survey Development and Testing

6.2.2.2 Development of initial questions

The development stage of this project used a variety of previous resources such as local council user surveys, Public Attitude Surveys, previous BCS/CSEW questions, and the literature review to decide on a basic structure of question categories, and to subsequently construct appropriate questions. These initial questions were chosen based on their relationships to the factors assessed within the study, coupled with their ability to draw out the participants' attitudes towards the police and their local area. Wherever possible, the items chosen to explore a factor were kept as similar to possible to those asked by both the partner organisations (City of York Council and the North Yorkshire Police), and national surveys examining public confidence in policing (British Crime Survey and the Crime Survey of England and Wales) in order to aid comparison during data analysis. A number of questions were adapted from previous surveys in order to increase the relevance for residents living in York: for example, changing the wording from “in your local area” to “in York”. In order to achieve a sufficient number of items per factor, it was necessary in certain cases (for example in the LASAFE factor) to develop a number of completely new questions. Where possible, these were rewordings of existing questions; seeking to explore a different facet of a particular factor.

In addition, for the PCON factor, a set of questions relating to police reliability were asked. Whilst a number of these questions had been asked in a similar form to past iterations of the NYP Public Attitudes Survey, several of these were either adapted or newly developed in order to create the new set of questions aimed at broadening the traditional assessment of public confidence. This issue was discussed in further detail in section 4.5.1.

All of the questions used in the survey were tested with a wide range of users as shown in Table 12, in order to allow for the rewording of any potentially confusing newly developed questions. Appendix C: “Original Factor/Variable Key” provides an exhaustive list of the questions used in the survey for the factor composition, and also identifies the source of each question.

6.2.2.3 Testing of initial questions

A panel consisting of experts in their various fields from the partner organisations was formed to perform initial testing of the developed questions. The purpose of this stage was to agree on the types of questions that were to be asked as well as the overall structure and length of the survey. At the end of this stage, a basic format for the survey was agreed along with the types of questions that were suitable for inclusion.

6.2.2.4 Coding and design of survey

Based on the feedback from the project team, the questions for the main survey were then coded into the SurveyMonkey platform in order to test the user experience of the survey. This stage represented a significant step, as some scale and question development occurred due to the features and restrictions of SurveyMonkey. During this stage, question logic was introduced to the survey to provide different “paths” for respondents based upon the answers given to previous questions. For example, if participants had not interacted with representatives of the police in York, question logic meant that they were not shown questions asking about the quality of these interactions.

Once the questions were digitally uploaded, the link to the survey was sent round a group of academics, students and practitioners in the field of policing and public safety who had agreed to act as beta testers for the survey. They were tasked with assessing both the academic quality of the questions and scales used, but also with usability testing. This was particularly important as the route through the survey could vary greatly depending on the answers to the questions and there was a risk of constant feedback loops occurring from incorrectly applied question logic.

The responses gained from this test were extremely illuminating, and significant changes to both the structure of the survey and the questions themselves were made according to the feedback from this stage of testing. These changes are described below.

6.2.3 Scale Development

After initial feedback from the test group, the ordering of the scales in the survey was standardized so that the positive response was situated on the left hand side and the

negative response was on the right. This was due to a stated tendency to look for a positive answer closest to the option choice.

Questions 5.2 and 5.3³⁸ (“How much of a problem do you think each of the following are in your area?” and “How worried are you about the following crimes in your area?”), proposed a unique problem. Unlike the rest of the questions in the survey which asked about views on a scale of what is essentially +2 to -2 with the 3rd value being a neutral choice (strongly disagree-strongly disagree), these two questions ask about perceptions on a scale that is essentially 0 to -3. In the case of 5.2, respondents are asked how much of a problem something is in their local area. In this case, something can be perceived to be not a problem at all, or it can be perceived to be a problem with a varying degree of seriousness. Initially, the choices were labelled as follows:

1. Not a problem at all
2. Not a very big problem
3. Fairly big problem
4. Very big problem

Whilst this seemed to capture the issue with sufficient depth, a problem arose as it was soon noticed that as this was a four-point scale, and all of the other questions relied on a five-point scale, there would be problems with the summation of the Likert score when it came to analysis. This was because some of the other question that fed into the constructs forming the Structural Equation Model had to be asked at different points of the survey. The first method used to try to combat this problem was to attempt to add another label onto the scale, but an acceptable sub-division of the “levels of problems” could not be devised. The solution in the case of these two questions was to create a five-point scale but with all of the middle labels removed as follows:

1. Not a problem at all
- 2.
- 3.
- 4.
5. Very big problem

³⁸ How much of a problem do you think each of the following are in your area?” and “How worried are you about the following crimes in your area?”

Whilst not an ideal situation due to the potential effects on the distribution of the data being collected (Meric and Wagner, 2006) , in this case it seemed the most appropriate choice as it allowed for a “middle” response i.e. the selection of item 3, without having to define labels for a difficult to define construct. Previous research into these “no opinion” responses in relation to confidence questions showed that the main reasons behind these answers were a lack of an informed opinion, a reflection of conflicting experiences with the police or difficulty in question comprehension (Charlton, Morton and MORI, 2011). In order to combat this, extra information was provided in relation to each question in order to minimise the amount of “no opinion” responses received, however, the “no opinion” option was retained to allow for a respondents’ lack of knowledge or conflicting police experiences.

In the initial pilot study, the Likert scales used the following scale labels:

1. Strongly Agree
2. Tend to Agree
3. Neither Agree nor Disagree
4. Tend to Disagree
5. Strongly Disagree

Whilst feedback from this stage showed that respondents found the use of the term “tend to” was confusing, these labels were kept the same to match as closely as possible to questions asked in the British Crime Survey and previous City of York Council survey questions in order to aid later comparison.

6.2.3.1 Inclusion of “Don’t know” column

Several comments from the second pilot study mentioned the lack of inclusion of a “don’t know” column. After the first test of the survey, all “don’t know” columns were removed from the attitudinal questions to force participants to think about their response. One of the reasons stated for choosing the “don’t know” option was that it meant the respondent did not have to think about answering the questions, therefore removing the “don’t know option” was an attempt to encourage respondents to think about their choice more carefully. To aid this, additional information was added to the page headings, which asked participants to consider their views carefully and reassured them that there was no correct answer. Although participants were encouraged to complete the survey with the enticement of a potential prize for completion of the

survey, allowing respondents to opt out due to non-familiarity with questions helps to increase the response rate and quality of data (Iarossi, 2006). In order to avoid respondents arbitrarily selecting a random response, a neutral/middle answer retained to allow for a response if there truly was no significant view held by the respondent.

6.2.3.2 Other changes

In addition to the issues outlined above, minor changes were made to the questions around the clarification of terms used, such as PCSO and “community”. Further information was provided about the importance of respondents giving their views, despite not necessarily having had prior contact with the police. Further development of the proposed SEM framework meant that additional items were added to match in with the factors being explored. The definition of “local area” used in the survey was changed from the definition used in past Local Council surveys and British Crime Surveys from: “the area within a 15-20 minute walk of your home” to: “the area within a 5-10 minute walk of your home”. Whilst the previous definition may be suitable for large urban areas, given the compact nature of York, a 15-20 minute walk is not representative of the size of the local areas/wards within the city.

6.2.3.3 Demographics

Deciding the correct demographic characteristics to collect on the survey was essential, as these factors would act as one of the main moderating variables in the SEM testing phase of the study. The demographic factors that were chosen were chosen either because they were used in previous BCS/CSEW iterations or because they had previously been shown to have an effect on public confidence. This private information includes respondent’s age, gender, sexuality, employment status, disability status and ethnicity, which certain respondents may feel uncomfortable revealing. Where appropriate, these questions were asked in the format recommended by the Office of National Statistics to ensure the questions are asked in a sensitive manner, thus improving the likelihood of response.

Due to a difference in the age ranges used in the demographics for BCS questions and the CYC study being developed, it was difficult to decide how to collect information on respondents’ age. To combat the inherent problems with comparing information from

different studies, the question regarding age was simplified to ask: “In what year were you born?” According to Gendall and Healey (2008), asking an age question in this way resulted in the most accurate answers given by respondents, whilst retaining a very low non-response rate. A single text-box was used which required an answer between 1896 and the current year. This meant that the responses could then be re-coded later to aid comparison with both sets of studies.

6.2.3.4 Final alterations to survey design

After the changes described above were made, the survey was re-tested with a larger user group of students and academics to assess usability on a larger scale.

Concerns were raised by test respondents about the collection of full postcode data and the necessity for it. This is essential for both present and future analysis of the data, as accurate location based information is required for geographical analysis including comparison with existing data-sets such as MOSAIC, recorded crime figures, police beat areas etc. In order to attempt to allay respondents’ fears and doubts regarding the research, the following statement was developed and added to the page where questions about postcodes were asked:

“This research looks at to what extent someone’s current and past location affects their views about the police. This means that we need to collect information including how long you have lived in your local area/York, where you lived before coming to York and your full postcode.

The collection of your full and accurate postcode is essential for this research, and without this information, the benefits to your local area and York as a whole are reduced.

Your postcode and any other information you provide will not be used to identify you or to contact you in any way, and will not be passed on or sold to any third-party.”

After the second testing phase was complete, the surveys were released to the partner organisations for sign-off and approval. No further changes were requested and approval for the final version of the survey was given. This final survey is shown in Appendix A: “Copy of Survey” in the format used for issuing paper-based surveys.

6.2.4 Survey Release

Calls for survey participants were disseminated using a variety of methods. As well as links to the survey being emailed directly to participants (see below), links to the survey were made available online on a number of different websites including those of the partner organisations and on various sub-sites of the University of York. Paper copies of the survey were available on request, and were provided at a community engagement event for those respondents who were not comfortable with, or equipped to complete the survey online.

As recommended by Keusch (2012), pre-notification was carried out in an attempt to improve the response rate of the survey and to aid distribution throughout York. This was carried out by creating a press release in conjunction with the University of York Press Office (shown in Appendix F: “Press Release 1”). The story was picked up by a local newspaper and was released electronically (<http://goo.gl/mqxzp>) and in print. BBC Radio York carried out an interview on April 24th with the author, in which the survey was discussed at length.

The project was officially launched at the York Crime Summit (a high profile public safety event) on the 25th April where both members of the public and senior public safety officials were present. The survey was released via an email on the 1st of May to the Operation Spoke mailing list, maintained by the Safer York Partnership. The Operation Spoke mailing list was the main method used to obtain responses for this study. It consists of members of the public (normally resident in York) who, after having had their bicycles security tagged by the North Yorkshire Police, have then agreed to receive further communications. The invitation to participate in the study was created in collaboration with Safer York Partnership and was sent as an initial stand-alone invitation (see Appendix E: “Operation Spoke Invitation”) to the mailing list. This was followed by the inclusion of the survey link in a more general newsletter to the mailing list and one further stand-alone reminder email. The issues relating to the use of this convenience sampling strategy is discussed in section 11.4.1

In order to try to ensure as large a sample size as possible for the study, the survey was publicised through many channels throughout the two-month period when the survey was available for completion. Internal promotion to students and staff of the University

of York included promotion in the “York Extra” e-bulletin board, distribution to departmental and college mailing lists and inclusion in the newsletters of student bodies and the Alumni Association. Externally, the survey was promoted through the websites and social media presences of North Yorkshire Police, City of York Council, and the Safer York Partnership. One additional reminder email was released to the Operation Spoke email database. The data collection period of the survey ended on the 30th July 2012 with a notification on the Safer York Partnership website thanking all participants and informing the public as to an expected timetable of completion.

6.2.5 Data Protection and Data Management

In order to comply with the Data Protection Act of 1998, a privacy statement was created which addresses the key requirements of the act. The privacy statement can be seen on the first page of Appendix A: “Copy of Survey”.

The study was primarily conducted through electronic means by completion of the survey located online at the private, secure link hosted by www.surveymonkey.com. SurveyMonkey stores the electronic responses on secure servers in the USA and has robust security measures in place, which comply with the US-EU Safe Harbour Frameworks regarding secure data storage and transmission.

When data was downloaded in a useable format such as SPSS or excel tables, it was stored on the local drive of a password protected PC and backed up using the cloud based storage service Dropbox. Dropbox has similar security and privacy features to SurveyMonkey and also complies with the US-EU Safe Harbour Framework.

In the event of a security incident resulting in unauthorised parties gaining access to the data, the potential harm to participants from this data loss would be limited to the personal feelings of respondents regarding the sanctity of their demographic information. With the exception of the demographically based questions, the questions contained in the survey would not be deemed particularly sensitive.

6.2.6 Anonymity of Participants

An important consideration for this survey is that of the possible identification of respondents. As the survey is collecting full postcode information alongside

demographic information there is a slight possibility that respondents could be identified through the personal data they provide. As one of the key elements of this study is examining the influences of location on public confidence, the collection of this low-level data is essential. In order to mitigate this risk, the Privacy Policy states specifically that the personal information that is provided by the respondents is confidential and will not be used to identify anyone from their responses.

Incentives to encourage full completion of the survey were used in the form of two £50 Amazon.co.uk vouchers. If respondents fully completed the survey, they could choose to enter their name, telephone number or email address in order to enter the prize draw to win a voucher. A strict procedure was in place to ensure that this information was not linked to the responses given in the survey. At the close of the survey, the answers to the “question” where respondents could enter their personal details were processed separately to the rest of the questions after data cleansing had taken place to establish eligibility but before any analysis took place and this data transferred to a separate file. Two winners were then selected from the eligible participants using a random number generator. Once contact with the winners was established, and the vouchers passed on, all email addresses and personal information were destroyed.

6.2.7 Combined University of York/City of York Council Survey

In addition to the data collection procedure described above, a secondary data collection also took place in conjunction with City of York Council who, along with North Yorkshire Police, wished to obtain an overall view of York residents’ attitudes towards the police, York and their local areas. In order to achieve this objective, key questions from the main survey were jointly selected by the project team and included in a sub-section of the 2012 Big York Survey administrated by City of York Council. Once the data collection period for both surveys ended, the responses to the questions asked in both surveys were combined to form a separate dataset. In total, 2492 residents of York expressed their overall views about the police, York, and their local areas. The results from this combined dataset were analysed jointly by the project team and a press release was drawn up by the University of York Press Office and issued on 4 October 2012.

The survey showed generally very positive views about both policing in York and residents’ perceptions of York and their local areas and the results were welcomed by

senior figures from the NYP and CYC alike. The press release created for this joint survey is shown in Appendix G: “Press Release 2”, and the results of this joint survey are available for viewing at the following shortened address: goo.gl/8X8rJ. The story was picked up by a variety of local media and publicised both online (goo.gl/TBe23), in press and through radio interviews.

6.3 Preliminary Data Analysis

6.3.1 Introduction

This section details the preliminary data analysis required before Factor Analysis and Structural Equation Modelling can be performed. It covers the initial survey statistics, and the data cleansing and manipulation techniques that were carried out to ensure accurate and representative results were obtained in later stages of the analysis. As discussed in the previous section, before any data manipulation was performed, all personally identifiable information that was collected from the survey as part of the Amazon.co.uk voucher prize draw was removed and the prize draw was performed. The preliminary data analysis discussed in this chapter was performed using the IBM SPSS Statistics software package (Version 20).

6.3.2 Survey Statistics and Data Cleansing

Including survey responses entered manually after the completion of a paper based survey, 1518 surveys were started on the SurveyMonkey data collection platform. From this number, 41 respondents were disqualified due to either not living within the specified boundaries of York, or who had previously lived in York, but left more than a year ago. A further 52 respondents qualified to complete the survey, but did either not start the main body of questions or did not complete the first question, leaving 1425 respondents who had valid response for one or more sections of the survey. Whilst SPSS can deal effectively with small amounts of incomplete data from respondents (see Section 6.3.3), 103 cases were removed where respondents had exited the survey before

completion (excluding optional demographic information) leaving a total number of 1322 valid survey responses³⁹. This is a completion rate of 90%.

Based on a York household population of 198, 000 (Office for National Statistics, 2012) this gives margins of error of 2.3% (90% Confidence Interval) 2.7% (95% Confidence Interval) and 3.5% (99% Confidence Interval) respectively, assuming a random sample (see section 11.4.1 for details).

All links to the survey provided throughout the public were unique to the method of distribution, meaning that it was possible to differentiate between responses from different channels. Table 13 breaks down the survey responses received by each distribution channel used (see section 6.2.4 for further details of these channels).

Distribution Channel	Number of Responses	Percentage of Total
Operation Spoke list	681	51.5
YUSU/University collector	316	23.9
Safer York Partnership	290	21.9
Facebook collector	21	1.6
Press Release Survey	5	.4
Paper Copy	5	.4
Alumni Link	4	.3

Table 13 Number of Responses per Distribution Channel

As this survey was publicised widely throughout the city of York it is difficult to calculate an accurate response rate for the entire survey. However, this is possible for one survey sub-sample. As discussed in the previous section, permission was granted by Safer York Partnership to publicise the survey to the mailing list for the on-going Operation Spoke campaign. Data provided by the email marketing software used in this mail-shot is shown in Table 14.

³⁹ Whilst there were 1322 valid responses, question logic present in the survey excluded participants from certain sections (see Section 6.2.2.4 for further details).

Total emails sent	6364
Total received	5738
People who opened the email	1717
People who clicked on a survey link in the email	843
Number of Valid responses from this group	681

Table 14 Operation Spoke Mailing Statistics

Examining the total numbers of valid responses showed 681 responses gained through the Operation Spoke mailing list. If we consider the total number of emails sent through this distribution channel as 6364, this gives a response rate of 10.7%, which is rather low. However, by examining the number of people who opened the email we can see that the follow through rate was 39.6% which is much more in line with the average email response rate of 36.3% found by Sheehan (2001).

6.3.3 Missing Value Analysis

It is necessary to identify missing data in a study and provide suitable remedies for it, as there is the potential for un-identified missing data to have significant impacts on analysis (Hair et al., 2010). We distinguish however, the difference between ignorable missing data and non-ignorable missing data. Ignorable missing data is that missing data which is expected from the design of the survey. In this study, ignorable missing data originates from the question logic of the survey, which directed respondents to questions based upon their responses to previous questions. There are two main instances of ignorable missing data that are present in the study. The first is present in the “Your Experiences with the Police” section; if respondents had not had any previous contact with the police in York then they are not capable of providing a useful answer to these questions and therefore did not complete the rest of the section. The second arises from the “Where you live” section. This section of the survey examines the attitudes of people who are deemed “recent residents” of York to explore the possible effects on attitudes towards the police that may arise from living in a previous location before coming to York. If respondents had lived in York for five years or more then they skipped this section of the survey.

Non-ignorable missing data arises where missing data is not expected/designed into the survey and must be dealt with. Due to a survey coding error, there were three sections of

the survey where respondents were able to proceed to the next section without having fully completed all questions in the previous section. Because these sections occurred later on in the survey, in most cases, the participants were used to fully completing all questions in a section before proceeding to the next section. However, there were some responses that containing missing data, either because of this error or from the completion of paper surveys, where respondents could not be forced into completing all questions. The extent of the missing data due to the incorrectly coded sections items was assessed, and is shown in Figure 8 below. Overall, there were 79 respondents with some missing data spread over 21 questions. As the extent of the missing data is very small (6% of cases had some form of missing data) it was judged not necessary to warrant action with regards to deletion of cases or variables (Little and Rubin, 1987).

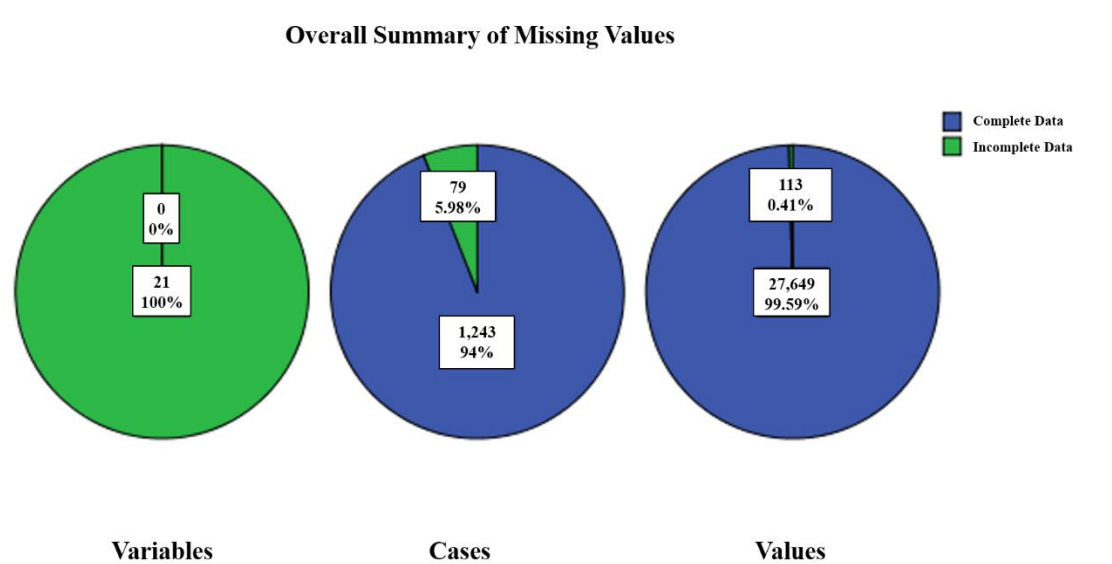


Figure 8 Missing Value Analysis

A pattern analysis of the data showed no distinguishable patterns in the extent of the missing data (see Figure 9) and Little’s MCAR test was carried out to confirm the randomness of the missing data. With a significance level achieved of 0.001 (Chi-square= 637.777, DF= 527) it is safe to reject the null hypothesis of the data having a significant pattern, and we can conclude that the data can be classified as Missing Completely At Random (MCAR), therefore suitable for correction in the form of imputation.

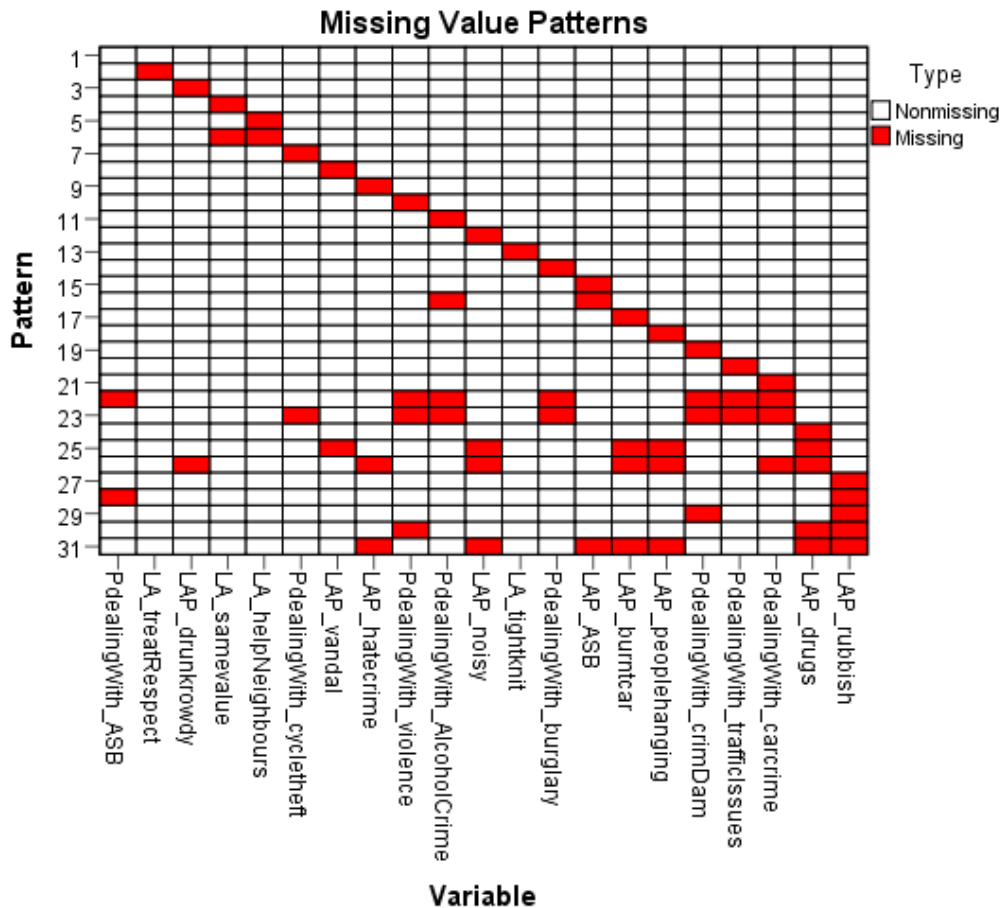


Figure 9 Missing Value Patterns

In order to maximise the use of the data, it was decided to carry out imputation of the cases in order to resolve the missing data problem. Although any imputation method could safely be used as the missing data represents less than 10% of the cases involved (Hair et al., 2010), a regression based approach was decided on in order to employ the existing relationships in the data to provide realistic replacement values. Specifically, Multiple Imputation (MI) (Little and Rubin, 1987) of the missing values was performed. MI is a form of Bayesian regression modelling and is considered a more robust method of imputing missing values than single imputation methods such as hot/cold-deck imputation (Schafer and Graham, 2002; von Hippel, 2004). As the data was found to be non-monotone in nature with an arbitrary pattern of missing values, the monotone method of imputation is not justifiable leaving the alternative of using Markov Chain Monte Carlo analysis through the multiple imputation function of SPSS. Due to the analysis constraints of the AMOS SEM program which cannot use multiply imputed datasets as an input, it was decided to run 20 imputations of the missing data and then

select one at random to work with. In order to counter any negative effects from this choice, the number of iterations of the Markov Chain within each imputation was increased to 15 in order to increase the stability of each chain and improve the results. After MI was carried out, 114 values were replaced, leaving the dataset complete.

6.3.4 Outliers and Normality

An examination of the all of the variables in the dataset showed a number of outliers within the available data. After considering the 5% trimmed mean for the relevant variables, it was decided to pursue a policy of retaining the valid variables. Tests of normality were carried out on all variables in the study. Graphical and statistical examinations were carried out to assess the normality of the distributions for the data. As expected from an examination of the frequencies, most of the distributions were positively skewed to some extent due to the generally positive perceptions of both York and York police. According to Razali and Wah (2011), the most commonly used and effective tool for assessing normality is the Normal Quantile-Quantile (Q-Q) plot. An assessment of the key variables in the study, as well as the plots for the summated scales of the factors showed no major deviations of normality from the expected straight line. The modified Kolmogorov-Smirnov test was carried out in SPSS on all the variables in the study to further test the assumptions of normality, with the results of none of the variables passing the significance test. Because the sensitivity of normality tests depends on the sample size of the dataset (Ahad, Yin, Othamn et al., 2011) this is likely due to the large sample size increasing the sensitivity of the tests. Square Root, Logarithmic, and Rankit data transformations were tested in order to achieve normality. However, due to the small possible range of variables for most of the variables (5-point Likert scales) acceptable levels of normality were not achieved. However, the large sample size of the data collected reduces the detrimental effects of non-normality by increasing the statistical power and reducing the sampling error (Hair et al., 2010). As the Q-Q plots displayed generally normal distributions, no further data transformation took place. Section 7.3.5 discusses the techniques that were used in SEM to account for this non-normality.

6.3.5 Testing Non-Response Bias

Because late responders can be considered as an alternative to non-responders (Armstrong and Overton, 1977), the non-response bias was assessed by testing the differences between the early responders of the survey (first 100 responses) and the late responders of the survey (last 100 responses) using an independent sample t-test as recommended by Swafford (2006).

The t-test was carried out on two key summed variables: “Total Police Views” ($p=0.824$), and “Total Area Safety views” ($p=0.65$). As the results indicated no significant differences ($p<0.05$ in the views between early and late responders), we can conclude that non-response bias is not present in the sample.

6.3.6 Results of Key Survey Indicators

The attitudes held by residents of York in relation to the police and public confidence broadly matched the positive views previously discovered in explorations in the wider North Yorkshire area carried out by NYP and through previous British Crime Surveys. Because the overall goal of this study is to understand the factors relating to public confidence in the police of York, before a detailed analysis of the underlying factors is undertaken, some key variables in the study are analysed in order to gain an insight into the overall views and perceptions held by York residents. The following figures are taken from the un-weighted data.

- 71.6% of respondents have confidence in the police in York (19.5% strongly agree, 52.1% tend to agree that “Taking everything into account, I have confidence in the police in York”)
- 86.6% of respondents are very or fairly satisfied with their local area as a place to live
- 73.4% feel that York as a whole is a safe place to live
- The most commonly reported concern in residents’ local area was “rubbish or litter lying around” with 18.9% of respondents reporting some level of concern with this issue.
- 17% of respondents were victims of crime in the last 12 months

- 80% of respondents who had been in contact with the police in York over the last 12 month rated their experiences as either positive or very positive.

When asked specifically as to what would improve confidence in the police in York, most responses focused on a desire for increased police visibility and presence in terms of foot patrols, as opposed to bicycle or vehicle patrols. Other responses requested improved communication from the police and increased engagement with local communities.

6.3.7 Data Weighting

In order to ensure that the results of the analysis were representative of the population of York, weighting variable were created for age, gender, ethnicity, and ward location using the most recently available figures. A total weighting value was created by multiplying these individual weights together, which had the effect of altering significance levels by altering the sample size. In order to counter this, a relative total weight was created by dividing the total weight by its mean. This technique retained the distribution patterns of the weighted sample, but maintained the original sample size. This relative total weight was applied to the data set before further analysis was carried out. The underlying demographic characteristics of the respondents and the weightings applied to the data are shown in Appendix H: “Weighting Calculations”.

6.4 Concluding Remarks

This chapter was divided into two sections. The first section discussed the data collection procedure in detail; including the design of the survey measurement instrument, the specific procedures of data collection and issues surrounding data protection and management. The second section has explored the preliminary data analysis procedures performed prior to the use of Structural Equation Modelling (SEM) to analyse the factors being explored. This includes data cleansing processes and statistical examination of the data to ensure accurate results in the later stages of analysis. The outcome of this chapter is a dataset that is fully prepared for analysis with the specific methodological tools of analysis discussed in the next chapters.

CHAPTER 7. FACTOR ANALYSIS

7.1 Introduction

In order to prepare the data for analysis with Structural Equation Modelling (SEM), Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) was used to explore the relationships between the variables in the study, assign these variables to appropriate factors, and then test the relationships between these factors. Factor analysis is described by Hair et al. (2010) as *“an interdependence technique, ...whose primary purpose is to define the underlying structure among the variables in the analysis”* (p.94). Both Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) are used in the study to assess the underlying factors that account for public perceptions of the police in York, before these factors are tested further with SEM.

This chapter details the EFA and CFA procedures carried out prior to the Structural Modelling component of SEM. EFA was performed using the “IBM SPSS Statistics” software package (Version 20) and CFA was performed using the “IBM SPSS AMOS” Structural Equation Modelling software (Version 20).

7.2 Exploratory Factor Analysis

7.2.1 Introduction

As discussed in section 5.4.2, Exploratory Factor Analysis (EFA) examines the patterns in data so that the underlying latent factors can be extracted (De Vaus, 2002). In order to assign the survey items to the appropriate factor for SEM, and to check the unidimensionality of the factors being explored, Exploratory Factor Analysis was performed on the data. As the initial aim of EFA in this study was to find the smallest number of factors that explain the maximum amount of variance in the data (Hair et. al, 2010), Principal Components Analysis (PCA) was chosen as the method of factor extraction. According to Floyd and Widaman (1995), data reduction is usually achieved through PCA, as it considers the total variance in the dataset (common variance, specific variance, and error variance) as opposed to just the common variance considered by Common Factor Analysis (FA). Given that the scales being used were not already confirmed, and a more exploratory approach was required concerning data reduction, PCA was considered the most appropriate factor extraction method.

7.2.2 Results

As there were preconceived factors developed in this study, before EFA was performed, the construct reliability of the preconceived factors was tested by assessing the internal consistency using Cronbach's Alpha (Cronbach, 1951). The results of these tests are shown below.

Factor name	Items	Weighted Cronbach
Perception of Local Area Problems (LAP)	9	0.879
Local Area Cohesion (LAC)	5	0.906
Fear of Crime (FOC)	8	0.874
Police Interactions (PINT)	8	0.955
Public Confidence (PCON)	10	0.953
Police and the Community (PCOM)	5	0.905
Police Dealing with Local Concerns (PDEAL)	8	0.908
Perceptions of Local Area Safety (LASAFE)	7	0.869

Table 15 Cronbach Alpha Values

According to Nunnally (1978) a score of above 0.7 is considered to be an acceptable reliability coefficient. As shown in the table above, all of the proposed factors achieved above this value, with the minimum value being 0.86. This suggests that all items in the factors are internally consistent and supports the decision to test this further using EFA.

Initial inspection of the correlation matrix revealed many coefficients of 0.3 and above. The Kaiser-Meyer-Olkin (KMO) value was .953, exceeding the recommended value of 0.6 (Kaiser, 1970) and Bartlett's Test of Sphericity (Bartlett, 1954) reached statistical significance, therefore supporting the factorability of the correlation matrix.

EFA was performed with PCA, which revealed a nine-component solution with Eigenvalues exceeding one, explaining 69.51% of the variance. Examination of the scree plot (Figure 10) using Cattell's Scree Test (Cattell, 1966) showed a clear break on the "elbow" between the 9th and 10th factor, confirming the suitability of a nine-factor solution.

This was further supported by the results of Parallel Analysis (Horn, 1965), carried out using the “Monte Carlo PCA for Parallel Analysis” software (Watkins, 2000). The results of Parallel Analysis showed nine factors in the dataset exceeding the corresponding criterion eigenvalues of a randomly generated data matrix of the same size (56 variables x 1132 respondents), therefore providing further support to the nine-factor solution.

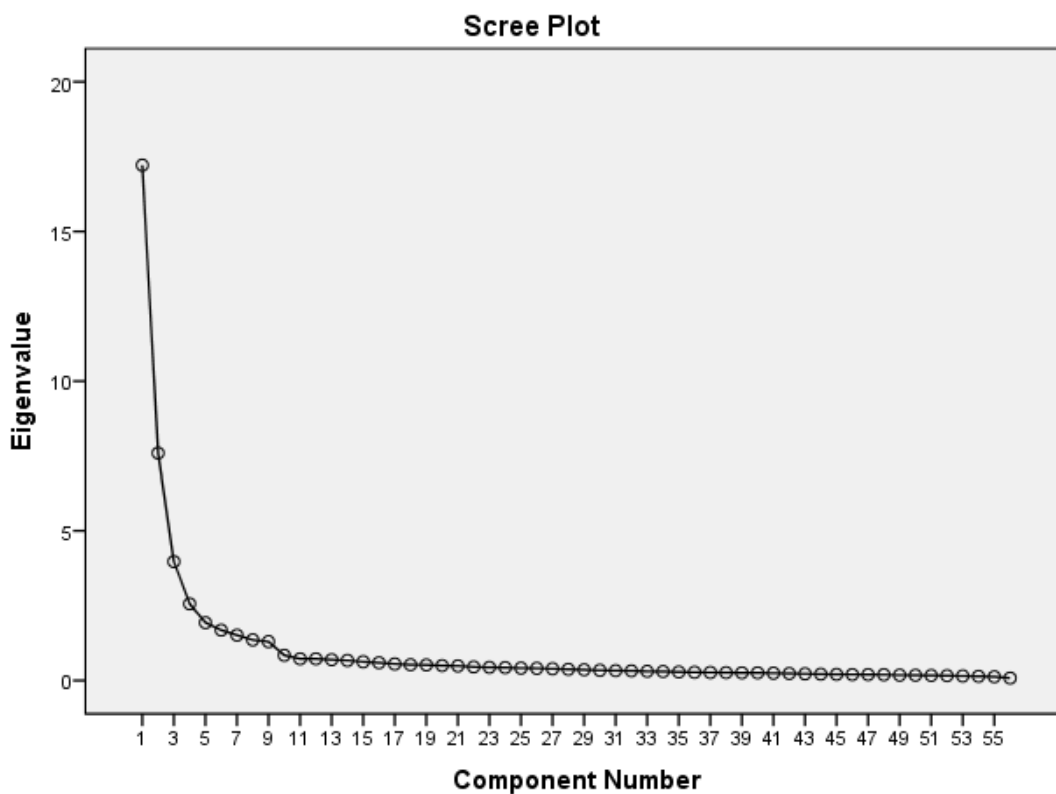


Figure 10 Scree Plot

To aid interpretation of the unrotated results, a Promax rotation (Hendrickson and White, 1964) with a Kaiser normalisation was performed. This rotation method was chosen because an oblique rotation method allows a degree of correlation between the factors being examined. As the measurement model being tested assumes correlation between the factors, this was the logical choice. Experimentation revealed the optimum Kappa value of 4, as this power was enough to reveal the presence of the simple structure whilst minimising the correlation between the factors (Gorsuch, 1983).

Chapter 7. Factor Analysis

According to Hair et al. (2010), a sample size above 350 must achieve minimum factor loadings of ± 0.3 in order to achieve statistical significance. For this study, we use the figure of ± 0.32 recommended by Tabachnick and Fidell (2007) as a rule of thumb for assessing minimum factor loading scores. In order to achieve this level for all variables, it was necessary to re-specify the EFA with the exclusion of two variables; SAFE7 and LAP7, which either cross-loaded strongly across one or more components or did not reach a loading of ± 0.32 or above on any factor. See Table 16 for the results of the EFA including all loading factors with the major loading factors for each item bolded.

	1	2	3	4	5	6	7	8	9
Factor Name	PCON	PINT	LAP	PDEAL	LAC	LASAFE	FOC	PCOM	FOA
% Variance	30.47	14.05	6.86	4.52	3.47	2.91	2.63	2.34	2.27
PCON2	0.949	-0.037	-0.01	-0.038	-0.017	0.009	-0.014	0.003	0.015
PCON1	0.925	-0.035	0.105	-0.057	-0.035	-0.097	0.028	-0.017	-0.052
PCON3	0.921	-0.101	0.006	0.029	-0.057	-0.087	0.088	-0.051	-0.014
PCON4	0.89	-0.028	0.037	0.016	0.014	-0.062	-0.047	-0.005	0.006
PCON5	0.846	0.068	-0.094	-0.011	0.087	-0.003	-0.065	-0.116	0.074
PCON7	0.774	0.2	-0.08	-0.117	0.022	0.006	-0.057	-0.002	0.049
PCON6	0.743	-0.028	-0.012	0.126	-0.006	0.011	-0.021	0.056	0.005
PCON8	0.677	0.031	0.05	0.142	-0.032	0.085	-0.032	0.077	-0.014
PCON9	0.658	0.137	-0.058	0.079	0.009	0.117	-0.076	0.05	-0.01
PCON10	0.621	0.042	0.076	0.165	-0.065	-0.012	-0.026	0.124	-0.008
PI1	0.02	0.917	0.034	-0.004	0.041	-0.072	0.057	-0.091	-0.05
PI5	0.106	0.898	0.039	-0.008	-0.016	-0.006	0.024	-0.133	-0.03
PI6	0.034	0.885	-0.008	-0.036	0.005	0.036	0.004	0.058	-0.031
PI4	-0.011	0.871	-0.01	-0.043	-0.007	0.098	-0.036	0.073	-0.016
PI2	0.022	0.857	-0.013	0.01	0.059	-0.069	0.009	0.028	0.038
PI8	-0.051	0.854	-0.013	0.028	-0.07	0.052	0.069	0.02	0.006
PI7	-0.047	0.853	-0.055	0.045	0.032	-0.016	0.052	-0.044	0.017
PI3	-0.017	0.847	0.075	0.002	-0.037	0.01	-0.027	0.08	-0.019
LAP2	0.086	0.017	0.957	-0.021	-0.054	-0.132	-0.003	-0.032	-0.024
LAP6	-0.081	0.044	0.839	0.023	0.015	-0.011	-0.14	0.013	0.125
LAP4	-0.009	-0.034	0.826	0.046	-0.087	0.002	0.07	-0.074	-0.062
LAP5	-0.012	0.039	0.818	-0.045	-0.092	-0.071	0.001	-0.03	0.059
LAP9	-0.064	0.005	0.77	-0.002	-0.009	0.082	0.026	0.012	-0.027
LAP3	-0.011	-0.006	0.745	0.052	0.035	-0.032	-0.033	-0.006	-0.112
SAFE5	0.063	-0.044	0.639	-0.033	0.139	0.084	0.118	-0.019	-0.187
SAFE6	0.115	-0.06	0.601	-0.079	0.114	0.137	0.152	-0.003	-0.167

Chapter 7. Factor Analysis

LAP1	-0.047	0.058	0.578	-0.046	0.077	-0.061	-0.193	0.107	0.274
PDEAL2	0.072	0.006	-0.072	0.839	0.061	-0.044	0.045	-0.08	-0.013
PDEAL5	0.08	0.033	-0.028	0.832	0.012	0.101	-0.011	-0.139	-0.021
PDEAL1	0.101	0.033	-0.092	0.779	0.018	0.013	0.116	-0.07	-0.025
PDEAL4	0.032	0.044	0.008	0.77	-0.024	0.017	0.05	0.063	-0.084
PDEAL7	-0.015	-0.007	-0.065	0.77	0.044	-0.111	0.001	-0.128	0.153
PDEAL8	-0.008	-0.091	0.095	0.726	0.005	-0.022	-0.05	0.131	0
PDEAL6	0.033	-0.053	0.151	0.68	-0.032	0.091	-0.081	0.144	-0.05
PDEAL3	-0.116	0.023	0.022	0.67	-0.043	0.003	0.004	0.158	0.066
LAC3	-0.073	0.014	-0.036	0.039	0.888	-0.097	0.029	0.062	-0.029
LAC5	-0.031	0.001	0.016	-0.016	0.875	-0.043	-0.028	0.084	0.009
LAC4	-0.028	-0.014	0.007	0.073	0.849	0.048	-0.116	-0.079	0.055
LAC2	0.032	0.016	-0.06	-0.018	0.84	-0.049	0.089	0.059	-0.009
LAC1	0.053	-0.005	0.086	-0.033	0.813	0.097	-0.052	-0.066	-0.014
SAFE3	-0.035	0.038	-0.065	0.036	-0.073	1.002	-0.19	-0.064	0.002
SAFE4	-0.093	0.015	-0.077	-0.004	-0.022	0.862	0.045	0.061	-0.03
SAFE1	0.074	-0.008	0.03	-0.043	0.065	0.823	-0.096	-0.104	0.013
SAFE2	-0.128	-0.036	0.134	0.019	-0.017	0.636	0.121	0.117	-0.032
FOC2	-0.05	0.062	-0.029	-0.02	-0.097	-0.05	0.956	0.062	-0.017
FOC3	-0.102	0.069	-0.038	0.059	-0.013	-0.122	0.953	0.009	0.021
FOC5	-0.005	0.005	0.107	0.048	0.063	-0.044	0.712	-0.02	0.02
FOC6	0.099	-0.053	0.318	-0.005	0.04	-0.002	0.56	-0.053	0.036
FOC1	0.036	-0.013	0.135	-0.05	0.022	0.255	0.42	0.033	0.205
FOC4	0.152	-0.04	0.076	-0.069	0.04	0.321	0.329	-0.042	0.259
PCOM3	0.013	-0.062	-0.04	-0.02	-0.025	-0.026	-0.01	0.91	0.013
PCOM5	0.017	-0.007	-0.069	0.029	0.03	-0.03	0.065	0.872	0.03
PCOM4	-0.098	0.053	0.062	0.033	0.077	0.011	0.019	0.791	-0.074
PCOM1	0.269	0.034	-0.093	-0.022	-0.007	0.021	0.005	0.673	0.058
PCOM2	0.253	-0.005	0.032	0.039	-0.003	-0.028	-0.021	0.654	-0.021
FOC7	0.054	-0.026	-0.11	0.003	0.011	0.005	0.058	-0.029	0.857
FOC8	0.019	-0.075	-0.066	0.021	0.007	0.008	0.074	0.022	0.842
LAP8	-0.095	0.091	0.442	0.097	-0.041	-0.047	-0.131	-0.005	0.581

Table 16 EFA Results

7.2.3 Interpretation of Results and Re-Specification of Factors

The results of the EFA showed that the majority of the items loaded onto their theorised factors, thus supporting the conceptualisations of the factors chosen for examination in the study. The majority of the factor loadings were very strong and unidimensional, with very few cross loadings identified. However, EFA also unveiled some possible changes that could be made to the item composition of the factors, as well as unveiling a new factor that had not been previously considered. As can be seen in Table 16, two variables from the “Perceptions of Local Area Safety” factor (LASAFE/Component 7) loaded onto the “Local Area Problems” factor (LAP/Component 3). Examining the wording of the items suggests that this alternate loading is theoretically valid, as the items are concerned with the overall perceptions of crime/anti-social behaviour perceived in the local area by the respondents, rather than a reaction to specific perceptions of personal safety as in the remainder of the “Perceptions of local area safety” items.

EFA also suggested the division of the “Fear of Crime” factor into two separate factors (Factor 8 and Factor 9), creating a previously un-conceptualised factor consisting of FOC7, FOC8 and LAP8. Examining the items that make up this factor (see Appendix C: “Original Factor/Variable Key”) suggest that this factor is associated with a fear of being verbally or physically abused due to some differentiating characteristic of the respondent, such as gender, sexuality, ethnicity etc. Whilst this factor was not initially theorised, evidence from EFA confirm that this factor explains a significant amount of variance in the data, therefore suggesting testing in Confirmatory Factor Analysis (CFA). This newly created factor was designated a factor name of “Fear of being abused” (FOA) as a separate factor to “Fear of crime”.

It is noted that there were 2 variables (FOC4/LAP8) with statistically significant cross loadings of $> \pm 0.32$ on one additional component (highlighted in Table 16). These items were considered for deletion, however FOC4 was considered a key components of the “Fear of Crime” factor, and the deletion of LAP8 would have meant the removal of the newly conceptualised “Fear of Abuse” factor. Therefore, it was decided to retain them for further investigation using Confirmatory Factor Analysis. Appendix C: “Original Factor/Variable Key” provides the wording of each question used in the survey alongside its corresponding factor.

The internal consistency of the re-conceptualised factors was analysed once more using the Cronbach Coefficient Alpha.

Factor name	Items	Previous Cronbach Alpha	Revised Cronbach Alpha
Perception of Local Area Problems (LAP)	10	0.879	0.907
Local Area Cohesion (LAC)	5	0.903	-
Fear of Crime (FOC)	6	0.874	0.890
Police Interactions (PINT)	8	0.955	-
Public Confidence (PCON)	10	0.953	-
Police & Community (PCOM)	5	0.905	-
Police Dealing with Local Concerns (PDEAL)	8	0.908	-
Perceptions of Local Area Safety (LASAFE)	4	0.869	0.770
Fear of Abuse (FOA)	3	-	0.756

Table 17 Revised Cronbach Alpha Values

Table 17 shows the changes in the Cronbach Alpha values for the adjusted scales. Whilst there was an improvement in the value on the “Perception of Local Area Problems” factor due to the addition of new variables that all correlated highly, the values for “Perceptions of Local Area Safety” dropped slightly. This is most likely to have occurred due to the reduction in the number of items per factor (Pallant, 2007). However, the values for all factors remain above the threshold level of acceptability of 0.7. An improvement was also made in the “Fear of Crime” factor, likely due to the removal of FOC7 and FOC8, which loaded onto the new “Fear of Abuse” factor.

Whilst some items were dropped in EFA, and others loaded onto unexpected factors, the results of the EFA have generally supported the theorised choice of items per construct. The re-conceptualised factors and their associated items are now tested using Confirmatory Factor Analysis within IBM SPSS AMOS.

7.3 Confirmatory Factor Analysis

7.3.1 Introduction

The following section discusses the first part of the two-stage approach being taken towards SEM: the creation of a measurement model in IBM SPSS AMOS (AMOS) from the survey data previously examined with EFA. The purpose of CFA in this

context is to test the proposed item/factor association before the structural model is developed, by assessing both the construct validity, and the unidimensionality of the conceptualised factors. Whilst unidimensionality and construct validity was previously assessed with EFA, CFA provides a stricter test of the latent factors in the proposed model (Gerbing and Anderson, 1988).

7.3.2 Preliminary Stages

Limitations of the AMOS software in dealing with weighted data (see 6.3.7) meant that raw SPSS data files could not be used as a direct input to the program. In order to conduct analysis with AMOS and retain the previously calculated weights, covariance matrices must be used as inputs instead. As this study is pursuing a Model Generating Strategy⁴⁰ (Jöreskog and Sörbom, 1993), the use of two samples is recommended by Pohlmann (2004) as a method to improve the stability of the parameters being estimated in the model. This has further benefits of increasing the replicability of the data, by ensuring the model is not simply fitting due to model re-specifications based upon quirks in the gathered sample (Dukes et al., 2009). Because of the large number of cases in the collected data (1322), it was possible to split the data file in two, whilst still exceeding the recommended minimum sample size of 500 cases (Hair et al., 2010) for a complex model such as this. Therefore, the SPSS data file was split into two random samples of 661 cases: one sample was used as a calibration sample and the other used for validating the results. Covariance matrixes were produced from each of these files and used as inputs for AMOS.

7.3.3 Measurement Model Development

Confirmatory Factor Analysis (CFA) was used to examine the covariance matrices imported from SPSS. Model development was carried out using one sample (calibration sample), the results of which were then validated using the second sample (validation sample). Model estimation was performed using Maximum Likelihood Estimation as recommended by Hu and Bentler (1998), with a Monte-Carlo parametric bootstrap of 1000 samples in order to adjust for non-normality (see 7.3.6). Figure 11 shows the structure of the finalised measurement model created in AMOS. All factors are shown

⁴⁰ Also described by Hair et al. (2010) as a Model Development Strategy.

Chapter 7. Factor Analysis

with double-headed arrows connecting to each other, indicating the estimation of factor correlations.

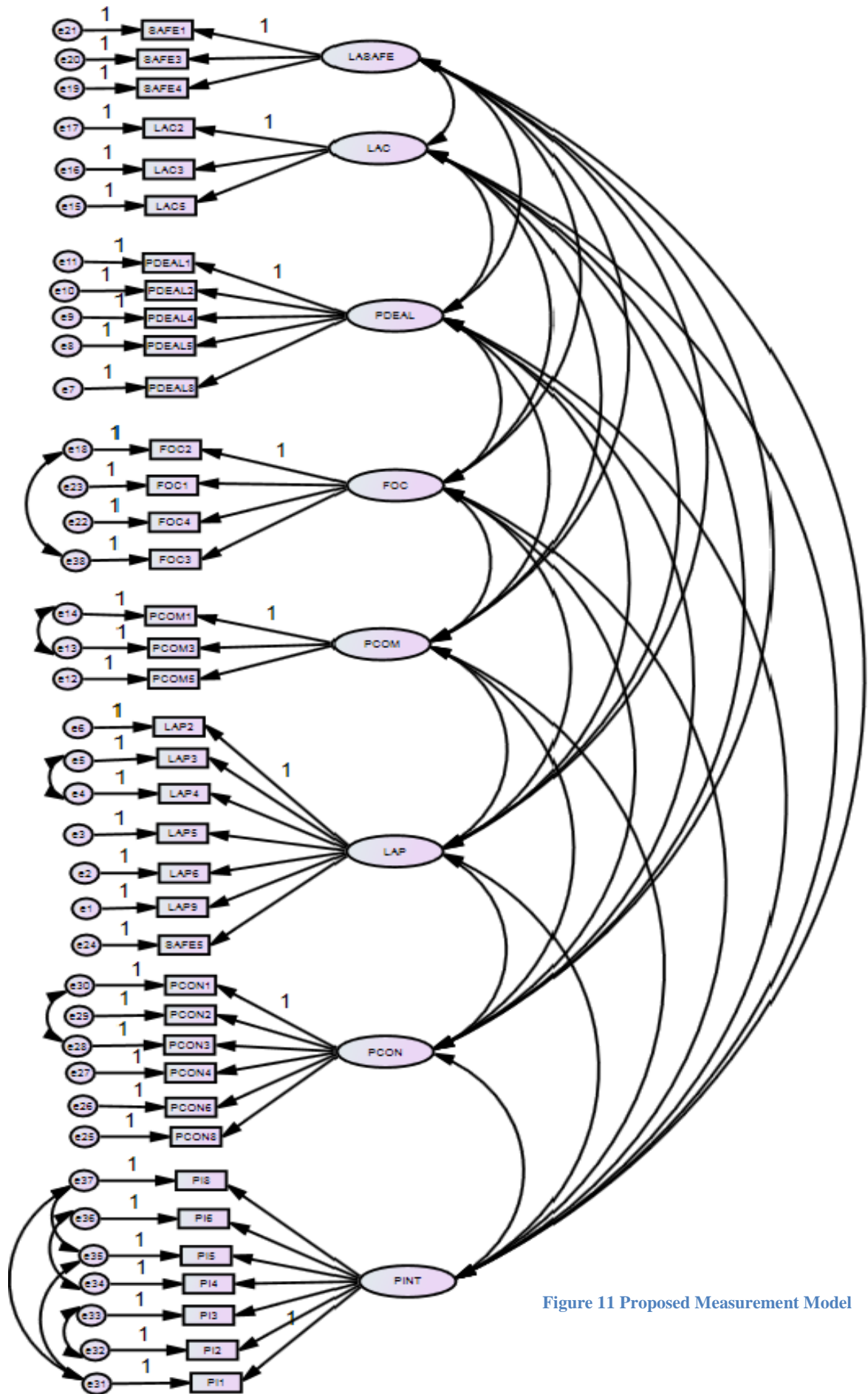


Figure 11 Proposed Measurement Model

The initial measurement model underwent a process of redevelopment and re-specification in order to improve model fit. The modifications were made based upon a combination of techniques including specification searches⁴¹ (MacCallum, 1986), the examination of factor loadings and standardised residual covariances, and the use of modification indices (such as covariances and regression weights) to examine the parameter changes possible from the removal of an item or factor. During this re-specification, errors were allowed to correlate within the confines of their construct groupings where appropriate, as the source of the error variance between these variables is likely similar (e.g. similar wording error) between two items in a construct (Child, 1990).

The main change emerging from the CFA is the removal of the factor “Fear of Abuse” that emerged from the results of EFA. In order for a model to be considered “identified” and have sufficient construct validity, there must be at least three items per construct (Long, 1983). As one of the items lost in the CFA was LAP8, this led to the newly theorised “Fear of Abuse” factor being under-identified and removed from the analysis. As this factor was not initially conceptualised as a factor, this is not a cause of concern for the research.

All of the remaining factors had at least one, but up to three problematic items, which had either high residual covariances or factor loadings under the cut-off point of .5, leading to unacceptable model fit. These items were removed from the model during the calibration process. The complete description of the of the items comprising each factor is displayed in Appendix D: “Complete Factor/Variable Key for SEM”.

7.3.4 Measurement Model Testing

In order to ensure that the re-specified model has not simply been fitted according to anomalies in the data, the use of a second sample is recommended for model validation (Pohlmann, 2004). As discussed in section 7.3.2, the original data sample was split into a calibration sample and a validation sample. A selection of Goodness-of-Fit (GOF)

⁴¹ Specification searches are where particular parameters previously fixed to 0 are allowed to freely estimate in an attempt to suggest where improvements to model fit may be gained.

indices for both the calibration and the validation sample are shown in Table 18 Model Fit Indices

, alongside a summary of the recommended values for model fit taken from Table 11.

	Measurement Model (Calibration sample)	Measurement Model (Validation sample)	Recommended minimum values for GOF index.
CMIN (χ^2)	2151.241	1811.806	NA
P value Sig.	0.00	0.00	NA
Degrees of Freedom (DF)	628	628	NA
CMIN/DF	3.426	2.885	≤ 5.0
PNFI	.799	.815	≥ 0.50
CFI	.923	.941	≥ 0.90
NFI	.895	.912	≥ 0.90
RMSEA	.060	.054	≤ 0.07

Table 18 Model Fit Indices

Examining the model fit indices for the validation sample, we can see that the re-specifications made to the model were acceptable modifications and that the fit was not simply due to quirks of the data set. Whilst the fit of the calibration sample model does not suggest exceptional fit, the overall GOF indices for the validation sample suggest a goodness of fit of the model that more than surpasses the minimally acceptable model based upon the sample size (662 per sample) and the number of variables estimated (38).

Whilst the χ^2 value reached significance, this is to be expected for a model such as this with a large sample size. In order to assess the overall GOF of the model we focus on the other GOF indices to assess model fit. Examining the χ^2 /DF ratio, we see that whilst the calibration sample achieved the minimum values of acceptability (Wheaton, 1977), the validation sample achieved the more conservative value of under 3.0 recommended

as a good indicator of acceptable model fit (Carmines and McIver, 1981). All of the remaining GOF tests for the validation sample showed acceptable model fit.

Factor loadings for the validation sample are shown in Table 19. For the remainder of the analysis, results presented are those obtained from the validation sample.

7.3.5 Non-Normality and Bootstrapping

The high χ^2 value displayed in the fit indices is likely due to a certain amount of non-normality in the data that has artificially inflated the chi-squared value (West, Finch and Curran, 1995). As initial statistical analysis of the data showed some potential elements of univariate non-normality (see section 6.3.4), we tested for multivariate non-normality, although a truly accurate assessment of multivariate normality is not strictly possible in this analysis as covariance matrices are being used for testing rather than raw data files. Because AMOS cannot deal with case weights in data files, nor calculate normality tests for covariance matrices, an assessment of the raw data files is approached with caution; due to the weightings applied in the covariance matrices, results could be significantly different from those actually being tested. With this caveat, we proceed with an assessment of multivariate normality.

An assessment of Mardia's coefficient of multivariate kurtosis (Mardia, 1970) gave a value of 423.005, exceeding the critical ratio of 292.839 and suggesting a significant deviation from normality. Potential outliers were also examined, with no outlying cases found based on the three largest Mahalanobis d-squared values of 131.864, 125.226 and 124.690 respectively. Because the data has shown evidence of multivariate non-normality, bootstrapping is used in AMOS to assess the stability of the path estimates being derived from the specified model. As the covariance matrix being used for analysis is derived from a weighted sample and is sufficiently large, the data is a good candidate for bootstrapping (Zhu, 1997).

Bootstrapping in SEM is a resampling technique that accounts for non-normality in data by assuming the examined sample represents the entire population. Numerous subsamples of the same size are randomly drawn from the main sample (with replacement), and path estimates for the models are calculated. The main benefit of this procedure is

that it allows for a more accurate estimation of standardised path estimates in the model due to the increased accuracy of the Standard Errors (Byrne, 2010.).

A Monte-Carlo parametric bootstrap was carried out with 1000 samples being estimated. The choice of 1000 samples was justified through an empirical comparison against a 10,000-sample bootstrap. The 10,000-sample bootstrap showed no major changes in mean estimates of regression weights, suggesting a 1000 sample bootstrap is sufficient in accounting for the non-normality of the data. In conjunction with the use of Maximum Likelihood Estimation, which has been shown to be robust with regards to deviations from normality (Benson and Fleishman, 1994), and the sample size of over 500 (Lei and Lomax, 2005), these procedures are considered sufficiently robust for accurate path estimates to be obtained. All discussion of estimates from herein refer to the mean estimates obtained from the bootstrapping procedure.

7.3.6 Construct Validity: Convergent, Discriminant and Nomological Validity

To confirm the measurement model as valid, the constructs need to be tested for convergent, discriminant, and nomological validity (Hair et al., 2010). Convergent validity relates to the amount of variance shared by indicators of a particular construct and is first tested by examining the un-standardised factor loadings in order to assess the statistical significance of the variables. As all variables achieved significance, we assess the factor loadings in the form of the mean of the standardised bootstrapped path estimates in Table 19.

Chapter 7. Factor Analysis

Path being Estimated			Bootstrapped mean path estimate	Standard Error
LAP	→	LAP9	.821	.015
LAP	→	LAP6	.769	.018
LAP	→	LAP5	.673	.024
LAP	→	LAP4	.703	.023
PDEAL	→	PDEAL8	.691	.023
PDEAL	→	PDEAL5	.832	.015
PDEAL	→	PDEAL4	.886	.011
PDEAL	→	PDEAL2	.797	.017
PDEAL	→	PDEAL1	.842	.014
PCOM	→	PCOM5	.876	.017
PCOM	→	PCOM3	.838	.017
PCOM	→	PCOM1	.826	.022
LAC	→	LAC3	.804	.016
LAC	→	LAC2	.883	.014
FOC	→	FOC2	.608	.027
LASAFE	→	SAFE4	.677	.028
LASAFE	→	SAFE3	.771	.028
LASAFE	→	SAFE1	.717	.030
FOC	→	FOC1	.906	.012
FOC	→	FOC4	.868	.013
LAP	→	SAFE5	.712	.022
LAP	→	LAP3	.615	.027
LAP	→	LAP2	.842	.015
LAC	→	LAC5	.878	.014
PCON	→	PCON8	.843	.013
PCON	→	PCON6	.837	.013
PCON	→	PCON4	.867	.011
PCON	→	PCON3	.820	.015
PCON	→	PCON2	.891	.010
PCON	→	PCON1	.826	.014
PINT	→	PI2	.894	.011
PINT	→	PI3	.922	.009
PINT	→	PI4	.904	.010
PINT	→	PI5	.806	.015
FOC	→	FOC3	.573	.029
PINT	→	PI1	.785	.016
PINT	→	PI6	.934	.008
PINT	→	PI8	.751	.019

Table 19 Bootstrapped Standardised Regression Weights and Standard Errors

Chapter 7. Factor Analysis

To achieve construct validity guidelines with respect to convergent validity, Hair et al (2010) suggest a minimum value of .5, and preferably .7 for each factor loading. An examination of the loadings shows that all variables pass the minimum value of .5 and that only six variables fall below .7. Examining Table 20 shows that the Construct Reliability (CR) and Average Variance Extracted (AVE) for each factor also pass the recommended values of .7 and .5 respectively. Taking into account the model fit indices shown in Table 18, adequate evidence of convergent validity is proven.

	CR	AVE	ASV
PCON	0.939	0.719	0.232
LAP	0.892	0.544	0.180
PDEAL	0.906	0.660	0.206
PCOM	0.884	0.717	0.206
LAC	0.891	0.732	0.128
FOC	0.835	0.568	0.195
LASAFE	0.766	0.522	0.109
PINT	0.952	0.738	0.131

Table 20 Validity and Reliability Table

Discriminant validity refers to the extent to which one construct is truly distinct from the other constructs in the model. Bove et al. (2009) notes that discriminant validity is supported if the construct AVE is greater than the Average Squared Shared Variance (ASV) of each pair of factors. As shown in Table 20, discriminant validity is supported using this measure. Taking the more conservative approach towards discriminant validity as noted by Fornell and Larcker (1981), discriminant validity is supported only if the shared variance observed between two pairs of constructs is lower than the minimum of their AVEs. Table 21 shows the AVE estimated on the diagonal, the Squared Inter-construct Correlation (SIC) estimates between constructs below the diagonal, and the shared variance estimates above the diagonal. As all of the AVE estimates are greater than their corresponding SICs, evidence of discriminant validity is shown.

Chapter 7. Factor Analysis

	PCON	LAP	PDEAL	PCOM	LAC	FOC	LASAFE	PINT
PCON	0.719	0.093	0.567	0.494	0.052	0.060	0.024	0.331
LAP	0.305	0.544	0.067	0.065	0.311	0.493	0.171	0.062
PDEAL	0.753	0.259	0.660	0.457	0.045	0.057	0.040	0.209
PCOM	0.703	0.255	0.676	0.717	0.105	0.085	0.026	0.213
LAC	0.228	0.558	0.212	0.324	0.732	0.242	0.090	0.052
FOC	0.245	0.702	0.239	0.291	0.492	0.568	0.393	0.033
LASAFE	0.156	0.413	0.201	0.160	0.300	0.627	0.522	0.017
PINT	0.575	0.249	0.457	0.461	0.228	0.183	0.130	0.738

Table 21 Correlation and SIC Estimates for Constructs

Nomological validity refers to whether the correlations in CFA make sense based upon previous theory and is the final stage of assessing construct validity. It is established by an assessment of the inter-factor correlations in the measurement model to examine whether the correlations make sense, i.e. whether they are theoretically sound (Hair et al., 2010). Assessing the inter-factor bootstrapped correlations shown in Table 22 suggests evidence of nomological validity; based upon the positive, significant relationships shown between all factors in the model, which is to be expected given the theoretical relationships existing between perceptions of one's local area, and perceptions of the police. Specifically, the variable PCON (which is tested as a dependent variable in the structural model) has significant relationships with all other factors in the directions predicted by previous studies (see section 4.5 for details).

Parameter			Estimate	SE	CR ⁴²	P
LAP	↔	FOC	0.673	0.018	37.39	***
LAC	↔	FOC	0.418	0.026	16.08	***
PCOM	↔	FOC	0.265	0.03	8.83	***
PDEAL	↔	FOC	0.252	0.029	8.69	***
LAP	↔	LAC	0.479	0.024	19.96	***
PCOM	↔	LAC	0.326	0.027	12.07	***
PDEAL	↔	LAC	0.231	0.029	7.97	***
FOC	↔	LASAFE	0.621	0.024	25.88	***
LAP	↔	LASAFE	0.441	0.029	15.21	***
LAC	↔	LASAFE	0.285	0.031	9.19	***
PCOM	↔	LASAFE	0.212	0.031	6.84	***
PDEAL	↔	LASAFE	0.178	0.031	5.74	***
PDEAL	↔	PCOM	0.666	0.019	35.05	***
LAP	↔	PCOM	0.199	0.03	6.63	***
PDEAL	↔	PCON	0.736	0.015	49.07	***
PCOM	↔	PCON	0.715	0.018	39.72	***
PINT	↔	PCON	0.561	0.02	28.05	***
FOC	↔	PCON	0.298	0.028	10.64	***
LAP	↔	PCON	0.267	0.028	9.54	***
LAC	↔	PCON	0.253	0.029	8.72	***
LASAFE	↔	PCON	0.231	0.03	7.70	***
LAP	↔	PDEAL	0.246	0.026	9.46	***
PCOM	↔	PINT	0.452	0.025	18.08	***
PDEAL	↔	PINT	0.418	0.025	16.72	***
LAP	↔	PINT	0.19	0.028	6.79	***
FOC	↔	PINT	0.188	0.03	6.27	***
LAC	↔	PINT	0.166	0.028	5.93	***
LASAFE	↔	PINT	0.161	0.032	5.03	***

Table 22 Inter-Factor Correlations

7.3.7 Assessment of Model Fitness by Comparison with Competing Models

The selection of the measurement model proposed in Figure 11 (Model 1) is confirmed through testing against two other competing models: a null model (Model 2) and a single-factor model (Model 3). The null model constrains the correlation between all the

⁴² CR refers to the Critical Ratio, which is the test statistic used in AMOS. This represents the parameter estimate divided by its standard error.

factors to zero by fixing the parameters to a non-numerical value of a , whereas the one-factor model conceptualises all of the items in the model into a single construct accounting for all item variance in the model. Table 23 shows a comparison of model fit indices between the three models. It is clear that the originally proposed model 1 has the best fit to the sample data; being the only model that achieves acceptable model fit. The χ^2 difference between model 1 and the next closest fitting model is significant (delta $\Delta\chi^2=953.956$, $p<0.001$), showing that the correlated model 1 is superior to the competing models. We can therefore reject the competing models and continue with the proposed measurement model.

Model	Model 1: Proposed model	Model 2: Null model	Model 3: single-factor model
CMIN (χ^2)	1811.806	2771.565	10602.467
P value Sig.	0.00	0.00	0.00
DF	628	654	693
CMIN/DF	2.885	4.238	15.299
CFI	.941	.894	.504
NFI	.912	.866	.488
RMSEA	.054	.070	.148

Table 23 Comparison with Competing Models

7.3.8 Common Method Variance

As the data was collected primarily through one online survey using mainly 5-point Likert scales there is the potential for common method variance/bias to have influenced the results (Podsakoff, MacKenzie, Lee et al., 2003). Common method bias was therefore tested for using Harman's single factor test and a common latent factor model.

Harman's single factor test was carried out in SPSS by constraining the number of variables produced in the EFA to one. This factor accounted for 28.306% variance. A common latent factor model was also produced in AMOS, which showed a common variance between the factors of just 0.0784%. The results from these tests suggest that common method bias is not an issue with this data.

As discussed in section 6.2.7, an additional survey was carried out in conjunction with City of York Council as part of the wider "Big York Survey" public attitude survey. A

comparison of key items from the present survey was made with the survey carried out with CYC and very similar patterns in the data were found. This also suggests that common method variance did not affect the present study.

7.4 Concluding Remarks

This chapter has detailed the processes of Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) used to explore the relationships between the variables in the study, assign these variables to appropriate factors, and then test the relationships between these factors prior to the Structural Modelling component of SEM.

The EFA procedures have revealed a nine-factor solution to the data, explaining 69.51% of the variance. Whilst the majority of items loaded onto their intended factors, a previously un-conceptualised factor emerged in the dataset. The CFA procedures tested the factor groupings that emerged from the EFA analysis. Whilst a degree of multivariate non-normality was discovered in the data, this has been dealt with through bootstrapping. The testing of construct validity resulted in the rejection of the additional factor suggested in EFA, and has revealed that the original eight constructs are valid for further assessment in the structural phase of SEM.

CHAPTER 8. THE SIMPLE STRUCTURAL MODEL OF PUBLIC CONFIDENCE IN YORK

8.1 Introduction

After an acceptable model fit has been found with CFA, and once factor convergent and discriminant validity is proven, the second stage in the two-step SEM process is to estimate and examine the structural (i.e. casual) model (Gerbing and Anderson, 1988). In the structural phase of SEM, the direction and strength of the relationships between endogenous factors are examined alongside the overall model fit in order to determine validity of the model being tested.

At this stage, we revert to using the complete sample of collected data rather than the split sample methodology of a specification sample and validations sample as shown in the previous stage. This ensures the weightings applied in the preliminary stages of data analysis are accurate and will allow for the greatest accuracy in testing the causal relationships inherent in the data.

This chapter discusses how the measurement model, confirmed as valid through CFA, is modified to allow us to answer the first research question set out in section 1.4: *“What are the factors that most affect people’s levels of public confidence in the police in York?”*

The unit of analysis for this model, and the revised structural model presented in the following chapter, is at the individual level, and all models are estimated using the same method as in CFA: Maximum Likelihood Estimation with a 1000 sample Monte-Carlo parametric bootstrap.

For reference, the construct details are presented in Table 24.

Construct Acronym	Construct Name
LAP	Perception of Local Area Problems
FOC	Fear of Crime
LASAFE	Perceptions of Local Area Safety
LAC	Local Area Cohesion
PINT	Police Interactions with the public
PCON	Public Confidence
PCOM	Police engagement with the Community
PDEAL	Whether Police are dealing with the issues that matter in York

Table 24 Construct Information

8.2 Simple Structural Model Development

The simple structural model was created in order to answer research question 1: “*What are the factors that most affect people’s levels of public confidence in the police in York?*”. This was achieved through the conversion of the measurement model shown in Figure 11 by altering the factor PCON to become an endogenous dependent variable, whilst all the other factors in the study become exogenous independent variables. The creation of the simple structural model allows us to not only examine a multitude of factors at the same time (therefore accounting for the effects of one factor on another), but also increases the theoretical contributions of the present study by analysing all of the factors in a single, methodologically robust analysis. In AMOS, this is achieved by the replacement of the double-headed covariance arrows between all factors with single-headed arrows leading from the exogenous factors to the endogenous factor of PCON, and the addition of an error measurement to PCON⁴³.

As shown in section Table 10, there are multiple factors identified in the literature that appear to have an effect on public confidence. Whilst this information is useful for

⁴³ In order to run the model in AMOS, the presence of covariance arrows between all non-endogenous variables in the model is required. These covariance arrows are not shown on the results presented here, as they do not represent hypotheses being tested.

theory development, the consideration of only a small number of factors related to public confidence examined in previous studies, and the differences in the conceptualisation of “public confidence” between these studies, means that the overall applicability of past results is diminished due to a failure to assess public confidence in a holistic manner. In addition, as discussed in section 4.4.1, many previous public confidence studies have only assessed public confidence using linear or multinomial regression analysis. Whilst these techniques could theoretically have been used to answer research question 1, there are three benefits in the choice of an SEM methodology to achieve this.

Firstly, SEM allows us to perform an estimation of multiple and interrelated dependence relationships in one, simultaneously evaluated model. Secondly, SEM gives the ability to represent unobserved concepts in these relationships whilst also accounting for errors in the estimation process. This recognises the fallibility of the measurement instrument being used and that the endogenous constructs being examined are not fully explained (Hair et al., 2010). Thirdly, a model can be defined which explains the entire set of relationships being studied.

8.3 Simple Structural Model Results

The simple structural model with Public Confidence (PCON) as the only dependent variable is shown in Figure 12 along with the bootstrapped standardised path estimates calculated in the model⁴⁴. We will first examine the overall model fit through an analysis of the GOF indices, before discussing the path estimates and their related hypotheses displayed on the path diagram.

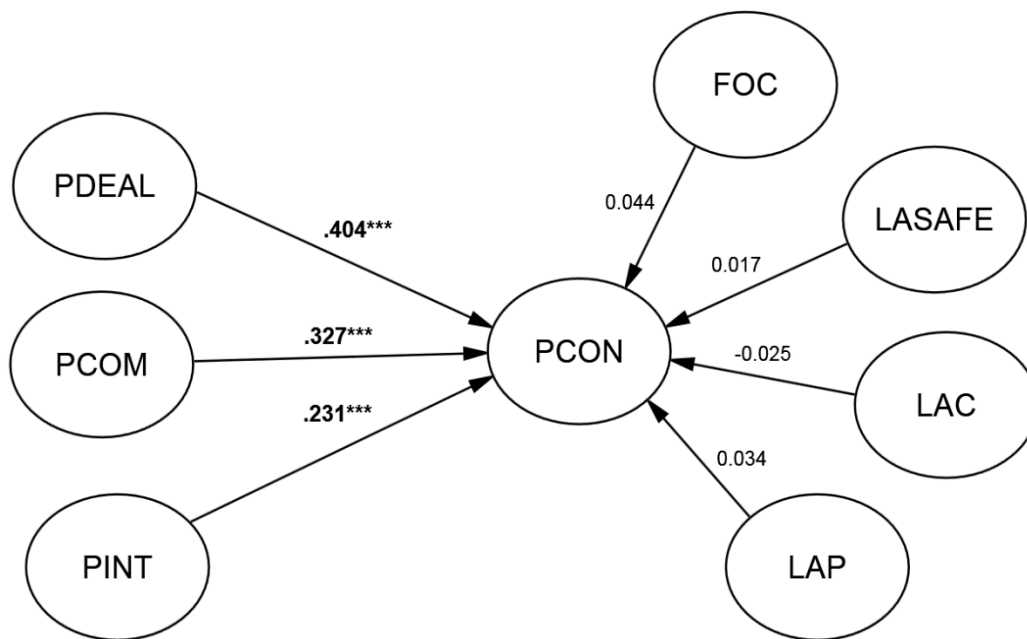


Figure 12 Simple Structural Model of Public Confidence

Table 25 shows selected GOF indices of the simple structural model compared to the previously calculated model fit indices for both the calibration and validation measurement modes. In order to aid further comparison, the fit indices for the measurement model using the full data sample are also shown.

⁴⁴ *** shows the path estimate is significant at the $p \geq 0.001$ level

Model	Simple Structural Model	Measurement Model (Calibration sample)	Measurement Model (Validation sample)	Measurement Model (Full Sample)
CMIN (χ^2)	2441.83	2151.24	1811.81	2441.83
P value Sig.	0.00	0.00	0.00	0.00
DF	628	628	628	628
CMIN/DF	3.88	3.43	2.89	3.88
PNFI	.838	.799	.815	.838
CFI	.953	.923	.941	.953
NFI	.938	.895	.912	.938
RMSEA	.047	.060	.054	.047

Table 25 Comparison of Model Fit Indices

An examination of the GOF indices for the simple structural model reveals that all measures are within a range that would suggest a good fit of the data to the model⁴⁵. In comparison with the calibration and validation measurement models, the fit of the simple structural model is greatly improved on almost all measures, to the point where the CFI value exceeds the more conservative value of .95 as advocated by Hu and Bentler (1999). Whilst the increase in the value of χ^2 (and the linked χ^2 /D.F. value) suggests a weaker model fit, this inflation is likely due to the use of the full sample of 1322 responses artificially distorting the absolute fit indices (Hair et al., 2010). Comparing the simple structural model results with the measurement model (full sample); we see that there are no differences in the fit indices. This is a result of the simple structural model being fully saturated in comparison to the measurement model, and has occurred because both the measurement model and the simple structural model

⁴⁵ See section 7.3.4 for a discussion of model fit indices

are being estimated from the same dataset as each other (the full survey sample), and the total number of parameters calculated for each model is the same (Hair et al., 2010).

This simple structural model has been designed to assess the effect, if any, of a number of previously hypothesised independent variables on the dependent variable of public confidence. As discussed in section 5.4.3, the graphical links between factors represent hypotheses being tested in the study. Assuming that acceptable model fit is proven, the strength and direction of the path estimates obtained after calculating the model proves or disproves the hypotheses being tested. Figure 12 reveals the hypotheses being tested by the simple structural model of public confidence in York. These hypotheses⁴⁶: can be summarised as follows

- H*₁: York residents' public confidence in the police is significantly affected by whether they feel the police are dealing with the issues that matter in York.
- H*₂: York residents' public confidence in the police is significantly affected by how much they believe the police are engaging with their community.
- H*₃: York residents' public confidence in the police is significantly affected by the interactions they have with representatives of the police.
- H*₄: York residents' public confidence in the police is significantly affected by their perceptions of how safe their local area is.
- H*₅: York residents' public confidence in the police is significantly affected by their perceptions of local area cohesion.
- H*₆: York residents' public confidence in the police is significantly affected by their perceptions of the problems that exist in their local area.
- H*₇: York residents' public confidence in the police is significantly affected by their fear of specific crimes occurring in their local area.

The previous evidence supporting each of these hypothesised links is discussed in section 4.5 and will not be re-examined in the discussion of the individual links between factors.

⁴⁶ The null hypothesis for each alternative hypothesis is not shown.

The standardised bootstrapped path estimates obtained from the model estimation procedure are shown in Table 26, alongside the equivalent hypothesis. The standard error for each estimate is shown with the Critical Ratio (C.R.) and the associated *p* value for each link. The Critical Ratio is the test statistic used in AMOS and represents the parameter estimate divided by its standard error. Based on a probability of .05, the C.R. value must reach a level of $>\pm 1.96$ before significance is achieved (Byrne, 2010).

<i>H</i>	Structural Link			Standardised Path Estimate (Standard Error)	Critical Ratio	P Value	Structural Link Supported?
<i>H</i> ₁	<i>PDEAL</i>	→	<i>PCON</i>	.404 (.027)	14.963	***	Supported
<i>H</i> ₂	<i>PCOM</i>	→	<i>PCON</i>	.327 (.031)	16.35	***	Supported
<i>H</i> ₃	<i>PINT</i>	→	<i>PCON</i>	.231 (.020)	11.55	***	Supported
<i>H</i> ₄	<i>LASAFE</i>	→	<i>PCON</i>	.017 (.028)	.607	.529	Not Supported
<i>H</i> ₅	<i>LAC</i>	→	<i>PCON</i>	-.025 (.025)	-1	.297	Not Supported
<i>H</i> ₆	<i>LAP</i>	→	<i>PCON</i>	.034 (.031)	1.097	.234	Not Supported
<i>H</i> ₇	<i>FOC</i>	→	<i>PCON</i>	.044 (.035)	1.257	.209	Not Supported

Table 26 Simple Structural Model Path Estimates

8.4 Simple Structural Model Discussion

For the simple structural model of public confidence in York, hypotheses one through seven suggested that relationships existed between the seven exogenous independent variables in the model (*PDEAL*, *PCOM*, *PINT*, *LASAFE*, *FOC*, *LAC*) and the dependent endogenous variable of public confidence. These hypotheses were developed based upon previous evidence (see Table 9) suggesting the presence of effects between the endogenous factors and public confidence in order to see whether these relationships would be present in the specific context of York, therefore answering Research

Chapter 8. The Simple Structural Model of Public Confidence In York

Question 1: “*What are the factors that most affect people’s levels of public confidence in the police in York?*”

An examination of the simple structural model reveals a clear answer to this question. The factors assessed in the model are listed below, in descending order of the effect they have shown on public confidence in policing in York.

1. *Police Dealing with local concerns (PDEAL): Whether York residents believe the police are dealing with the issues that matter in York.*
2. *Police and the Community (PCOM): Whether York residents believe the police are interacting with their community.*
3. *Police Interactions with the public (PINT): The quality of the interactions between the police and the public in York.*
4. Fear of Crime (FOC): York residents’ overall fear of crime.
5. Local Area Problems (LAP): The perceptions that York residents hold about the problems that exist in their local area.
6. Local Area Cohesion (LAC): The perceptions that York residents have about the level of local area cohesion
7. Local Area Safety (LASAFE): How safe York residents perceive their local area to be.

Only PDEAL, PINT and PCOM are shown to have significant effects on public confidence in York. For the remaining factors, some relationships exist between them and the dependent variable of PCON; however, the path estimates are not strong enough to reject the null hypotheses for the relationships. The results of the analysis suggest that the majority of these relationships were not actually supported in the case of York residents, with only three path estimates in the simple structural model showing statistically significant links. We now examine these interactions to provide some explanation as to why some of the hypotheses were supported, whereas others were not.

In order to aid discussion, the factors in this study are split into three factor groupings (based upon their underlying characteristics) and examined with reference to these groupings. These groupings are shown in Table 27

Police Influenced Factors (PIFs)		Local Perspective Factors (LPFs)	
PDEAL		LAP	
PCOM		LASAFE	
PINT		LAC	
Intermediary Factor (IF)	FOC		

Table 27 Factor Groupings

8.4.1 Police Influenced Factors (PIFs)

The first factor grouping consists of the perceptions that the police are dealing with the issues that matter to residents in York (PDEAL), the perceptions of police engagement with the local community (PCOM), and the perceptions of interactions with representatives of the police (PINT). There is a body of evidence suggesting that these factors not only have a direct effect on public confidence, but that they can be directly affected by police activities (Wünsch and Hohl, 2009; Hohl et al., 2010). This grouping is therefore named “Police Influenced Factors” (PIFs), as it is made up of those factors that the police could potentially influence through some form of direct intervention or strategy.

As can be seen in the simple structural model, the only relationships with statistically significant path estimates were PDEAL, PINT and PCOM; the three factors making up the Police Influenced Factors (PIFs) grouping.. The police could influence these factors using externally based initiatives such as the introduction of new strategies or policies aimed at changing public perceptions around policing, or with internal measures aimed at changing the behaviour and/or attitudes of officers.

This is positive news, as it suggests that public confidence should not be seen as a vague, abstract concept that cannot be changed. Instead, it shows that the goal of improving public confidence is within the reach of police forces, with the responsibility lying not only with the force as a whole, but also with the frontline officers in daily contact with the public. Public confidence can therefore be viewed as a tangible performance target that can be altered through strategic and operational improvements. Each relationship within the PIF grouping is now examined to see how the current study adds to the present literature on the factors affecting public confidence.

8.4.1.1 The relationship between PDEAL and PCON

The simple structural model showed that whether York residents believe the police are dealing with the issues that matter in York (PDEAL) had the biggest effect on their public confidence in the police (PCON) as shown by the path estimate of .404 between these two factors. The results of the analysis therefore support the consensus in the literature that perceptions of police effectiveness positively affect public confidence in the police. This study adds an additional location-based element when compared to previous examinations of police effectiveness. By asking residents to provide their views on how well they perceive the police in York to be dealing with the specific issues that are a priority in York⁴⁷, a clearer picture of the perceptions of *local* police effectiveness can be gained. This is in contrast to the more traditional assessments of police effectiveness, which are more generalised to allow for cross-comparison between locations.

8.4.1.2 The relationship between PCOM and PCON

The significant factor loading of PCOM onto PCON in the simple structural model supports previous literature, in the sense that public perceptions of police-community engagement have an effect on public confidence, and that this link is supported in York. In comparison to other studies which have used single-item measures of police-community engagement, this study adds further strength to the argument that this link exists, through the use of the multi-item latent factor that has been used to explore this factor.

Evidence in the public confidence literature demonstrates a clear link between community policing and public confidence and clearly highlights the importance of effective police-public engagement and communication with respect to effectively managing public confidence. A demonstrable willingness to engage with, and get involved with the community in question provides a clear opportunity for the police in York to improve their relationships with a range of different local areas and communities. Effectively managing the relationship between the police and local

⁴⁷ These priorities are set by the York Crime and Disorder Reduction Partnership (CRDP) and are developed based upon multi-agency data analysis of crime and disorder intelligence, in conjunction with community consultation on residents' views.

communities can therefore play an important role in the maintenance and improvement of public confidence in York.

8.4.1.3 The relationship between PINT and PCON

The majority of the evidence examining the relationship between PINT and PCON has shown that effectively managing the interactions between the police and the public plays an essential role in managing public confidence. The significant factor loading of PINT onto PCON on the simple structural model supports the hypothesis that perceptions of public-police interactions have a direct effect on public confidence, and that this link is therefore supported in the context of York. However, in comparison with the previous PIFs of PDEAL and PCOM, which simply show a positive relationship with public confidence, PINT is even more important for the maintenance of, or the prevention of a decline in, public confidence. This is due to the asymmetry of the public confidence impact stemming from positive and negative encounters between the public and the police and suggests that the close management of the behaviour and attitudes of the representatives of the police in York is essential if public confidence is to be maintained in York.

The asymmetry of police/public initiated contact was tested for in a multi-group analysis of the data using the same procedures as discussed in section 9.6, with no significant differences found in either the simple structural model or the revised structural model. This suggests that in the context of York, this asymmetry is not present. However, the asymmetry in negative/positive interactions could not be tested for using these methods due to the large imbalance between respondents with overall positive interactions with the police (706 respondents) and respondents with overall negative interactions (16 respondents). However, the very fact that the relationship between PINT and PCON is both positive and significant, even though the PINT sample consists mainly of positive interactions, shows that it is possible for the police in York to actually improve public confidence through good quality interactions, rather than just preventing a decline. This work therefore corroborates previous work by Tyler and Fagan (2008), Bradford et al. (2009) and Jackson et al. (2013) and supports the idea that police managers should not be overly disheartened by any confidence asymmetry stemming from police-public interactions.

8.4.2 Local Perspective Factors (LPFs)

The second factor grouping contains those factors that are more representative of respondents' perceptions of their local area, which would not be easily altered by the actions of the police. These factors include the perceptions of local area safety (LASAFE), the perceptions of local area problems (LAP) and the perceptions of local area cohesion (LAC). Whilst evidence exists that these factors have an effect of some form on public confidence, there is no evidence suggesting that these factors can be *directly* influenced by the police (Cao et al., 1996). Whilst some form of indirect effect by the police may be possible, and indeed desirable, these factors represent deeply seated views of respondents that may be difficult to alter, especially over the short term. This factor grouping is therefore named "Local Perspective Factors" (LPFs).

As can be seen in the simple structural model, none of the factors in the Local Perspective Factor (LPFs) grouping showed a significant effect on the dependent factor of public confidence (PCON). Each relationship within the LPFs grouping is now examined to see how the current study adds to the present literature on the factors affecting public confidence.

8.4.2.1 The relationship between LAC and PCON

Despite the positive relationship between social cohesion and public confidence being unrefuted in the literature in both US and UK based studies, the link between local area cohesion (LAC) and public confidence (PCON) was both negative and insignificant in the simple structural model of public confidence in York. This direct contradiction of previous studies is interesting, as it suggests that this link, or rather, the lack of it is due to a unique factor of York, or smaller urban areas in general. Alternatively, this could simply highlight the ongoing confusion in the literature as to what exactly is meant by public confidence, and how it should be assessed in a multivariate analysis of data. For example, in Jackson and Sunshine (2007), public confidence was assessed by examining the effects of social cohesion on the satisfaction with police effectiveness in cutting crime (the equivalent of PDEAL in the present study) and the satisfaction with police engagement with the local community (the equivalent of PCOM in the present study). As this link was not tested in the simple structural model, it perhaps hides some subtleties in the data due to the fluidity of the terms and the lack of consensus in what is

really meant by public confidence in the police. Care, therefore, needs to be taken in the direct comparison of public confidence studies in order to see what is actually being measured in terms of the specific questions being asked of respondents or participants.

Although the LAC factor was not shown to directly affect public confidence in the simple structural model, the impact of perceptions of social cohesion in a broader framework of public confidence will be assessed in the revised structural model, to examine exactly how it may fit into a wider model of public confidence in York

8.4.2.2 The relationship between LAP and PCON

Examining the evidence proved by the simple structural model, we see that, as in the case of its “twin” factor of LAC, the path estimate for LAP-PCON did not reach significance, therefore suggesting that in York, public confidence is not directly affected by perceptions of community disorder or low-level crime. However, as with the case of the other LPFs that did not gain significance in the simple structural model, this may be due to the fluidity of the terms used to describe public confidence and not necessarily a true indicator that no relationship exists. As previous studies suggest that this link is theoretically valid, the indirect effects of community disorder and the perceptions of local area problems on public confidence will be tested in the revised structural model.

8.4.2.3 The relationship between LASAFE and PCON

As with the other LPFs of LAC and LAP, the simple structural model shows no significant relationship between the LASAFE and PCON factors; therefore suggesting that in the context of York, the perceptions of local area safety held by York residents are not direct drivers of public confidence. Whilst evidence in support of this relationship is shown in two US based studies (Weitzer and Tuch, 2005; Dukes et al., 2009), the equivalent UK literature regarding the fear of crime generally fails to show a direct relationship between perceptions of crime and safety and increased police satisfaction (Jackson and Sunshine, 2007; Jackson et al., 2009; Myhill and Bradford, 2012; Sindall et al., 2012).

The path estimate between LASAFE and PCON is the smallest in the entire simple structural model. As this LASAFE factor is considered almost interchangeably with the

FOC factor, why is the strength of this relationship so weak? This may be partly explained by the previously mentioned lack of clarity in the terms used in the fear of crime and public confidence literature, or it could be some other factor specific to York. One possible explanation relates to the overall perceptions of safety reported by respondents of the study. These responses were overwhelmingly positive, with only 10.3% of respondents disagreeing with the statement “My local area is a safe place to live, relatively free from crime and violence.” In York, this may mean that the residents of areas with high levels of perceived safety feel that additional police interaction with an area or community is not required, due to the (assumed) absence of signs of community and social disorder. This could lead to a view of the police that is shaped less by the perceptions of the respondents’ local area, and more by the Police Influenced Factors in the simple structural model. This hypothesis will be tested using the multi-group moderation tests presented in section 9.6.

As with the other LPFs any effects on public confidence may occur indirectly through a mediation on other factors in the study, therefore it will be retained for further analysis in the revised structural model to examine how it fits into a wider model of public confidence in York.

8.4.3 Intermediary Factor (IF)

The final factor grouping consists of the remaining factor that falls in-between the previous two groups: the fear of crime (FOC). The FOC factor falls between the two previously described factor groupings due to the possible, *indirect* effect that the police may have on changing an individual’s fear of or worry about specific crimes occurring. Whilst someone’s worry about crime could be described as an internal social perspective, it is important to note that the FOC factor assesses the worry about specific crimes occurring, rather than a general fear of, or worry about crime, which is assessed through the LASAFE factor. As there is strong evidence in the literature which suggests that the fear of crime can be affected by the perceptions of a local area (Skogan, 1986; Jackson and Sunshine, 2007; Jackson and Bradford, 2009; Jackson et al., 2009; Brunton-Smith, 2011) this factor could be indirectly affected through any changes in the LPF grouping. For example, if the police or other local bodies (such as the City of York Council or Safer York Partnership) are successful in reducing the visible signals of community disorder, it is conceivable that the perceptions held by residents in the area

could improve to reflect these changes. However, any such reductions will take time to “*seep into the public consciousness*” (Stanko and Bradford, 2009, p. 327), and affect FOC, therefore any changes in this factor would be very difficult to quantify. As this factor falls partly into both of the previously described factor groupings, it is called the Intermediary Factor (IF).

8.4.3.1 The relationship between FOC and PCON

The simple structural model shows no significant relationship between the FOC and PCON factors, therefore suggesting that in the context of York, the worries held by residents regarding specific crimes occurring are not drivers of public confidence. Whilst contrasting evidence for this structural link exists in the literature, the evidence base supporting the view that the fear of crime does not affect public confidence is becoming increasingly difficult to ignore (Bennett, 1994; Cao et al., 1996; Jackson and Sunshine, 2007; Jackson et al., 2009; Myhill and Bradford, 2012; Sindall et al., 2012). However, examining the C.R. value of the path estimate shows that significance was close to being achieved in the simple structural model. It does not seem prudent, therefore, to completely rule out the possibility of fear of crime having some form of an effect on public confidence. As this effect may occur indirectly through a mediation on other factors in the study, it will be retained for further analysis in the revised structural model to examine how it fits into a wider model of public confidence in York. Further investigation of this relationship in future work is also recommended in order to see whether significance would be achieved given a slightly different sample.

Comparability between studies in this area is made difficult due to the differing nature of the questions used to assess the fear of, or worries about, crime. Whilst some studies have used quite general questions (“how safe do you feel being outside and alone in your neighbourhood?”), other studies have used items measuring specific concerns about crime. Zhao, Gibson, Lovrich et al. (2002), recommended that only the fear of violent crime should be considered as an indicator for FOC, however, in this study, the FOC factor is made up of a mixture of indicators considering both violent crimes against the person (being mugged and robbed) and non-violent crimes against property (having things stolen from your car). This difference in the way fear of crime is assessed

may go some way in explaining the differences found in both the existing literature, and the present study.

8.5 Concluding Remarks

Whilst the results of the simple structural model has indicated that only the Police Influenced Factors have a direct effect on public confidence, the Local Perspective Factors and the Intermediary Factor of FOC must not be neglected by police managers if a holistic understanding of public confidence in York is to be gained. Whilst these factors have not shown a direct effect on the PCON variable, the wider effects of these factors on an overall model of public confidence in York must be understood. To this end, all the factors discussed in the simple structural model above are now tested in a locally based, revised structural model of public confidence in York.

CHAPTER 9. THE REVISED STRUCTURAL MODEL OF PUBLIC CONFIDENCE IN YORK

9.1 Introduction

As the previous section has shown, a large proportion of factors predicted in the literature to have an effect on public confidence yielded results that failed to support the hypothesized relationships. From the seven factors tested, only the three factors from the PIFs grouping showed significant direct effects on the dependent variable of PCON. Because the simple structural model has failed to provide a complete explanation of public confidence in York, a revised structural model was developed in order to enable a deeper understanding of the relationships between the various factors explored in the study.

Because so many predicted drivers of public confidence did not hold true in the simple structural model, the development of the revised structural model seeks to examine the possibility that the factors from the LPF and IF factor groupings affect public confidence not directly, but through an indirect effect through the significant factors. A secondary goal of this model is to assess the relationships within the PIF grouping. If one factor can be shown to have the potential to improve public confidence whilst also improving other public perceptions represented in the model, then this would suggest a starting point for police managers to introduce a programme aimed at systematically improving public confidence in York. This section presents the results of this analysis.

9.2 Revised Structural Model Development

The revised structural model was created in order to answer the second research question: *“How do these factors interact with each other to form an explanatory framework of public confidence in York?”* To answer this question, a model had to be created which not only highlighted the significant, direct, interactions of the Police Influenced Factors on public confidence, but also provided a more holistic picture of public confidence in York by highlighting any possible effects of the Local Perspective Factors and Intermediary Factor on public confidence. In order to do this, the existing literature on models of public confidence was re-examined in order to create a theoretically valid model.

Chapter 9. The Revised Structural Model of Public Confidence in York

The model was developed based upon three key theoretical links between the different factor groupings discussed in section 8.4, as well as the relationship between the Police Influenced Factors (PIFs) and public confidence (PCON) which was previously confirmed in the simple structural model as being valid. These links are as follows:

1. Links within the Local Perspective/Intermediary Factors
2. From the Local Perspective/Intermediary Factors to the Police Influenced Factors
3. Links within the Police Influenced Factors

The theoretical development of each of these links will now be discussed, in order to explain the development of the revised structural model of public confidence in York.

9.2.1 Links within the Local Perspective/Intermediary Factors

The first set of links conceptualised is that from the Local Perspective Factors (LPFs) of LAP, LSAFE and LAC to the Intermediate Factor (IF) of the Fear of Crime (FOC). The link between an individual's perceptions of their local area and their fear of crime is well established in the literature. Previous work by Jackson and Sunshine (2007), Miller (2008), Jackson and Bradford (2009), Jackson et al. (2009) and Brunton-Smith (2011) have all shown how an individual's fear of crime is shaped in part by their perceptions of their local area. Other evidence supporting these relationships is also shown in the works of Skogan (1986), who discovered that both the levels of perceived social disorder, and lower levels of neighbourhood satisfaction were linked to the fear of crime, and by Jackson (2004); who found that perceptions of social cohesion and community disorder were key drivers of the fear of crime.

According to Jackson et al. (2009):

“Individuals make judgements about the order and disorder of their neighbourhood (a sense of control over the streets that is eroded by young people hanging around, by litter and graffiti, and by a feeling that the community has lost control over its members and over certain individuals/groups who occupy public space), the extent to which people trust and support one another, and whether individuals lack the appropriate norms and values.” These diagnoses of social order and moral consensus shape inferences about crime and inferences

about the ability of the local police to impose authority and ordered behaviour.” (p.104)

This quote highlights how the fear and worry about crime a resident holds is shaped by a combination of all the perceptions a resident has regarding their local area, confirming the inclusion of structural relationships in the revised structural model between the LPFs of LAP, LASEAFE and LAC, and the Intermediate Factor of FOC.

9.2.2 From the Local Perspective/Intermediary Factors to the Police Influenced Factors

The second set of relationships is concerned with the structural links between the LPFs/IF and the Police Influenced Factors of PINT, PDEAL and PCOM. These two sets of links are key in connecting the perceptions that a respondent holds about their local area/crime, to the already established direct links between the PIFs and PCON and are discussed in turn.

9.2.2.1 Relationships stemming from the Fear of Crime factor

The relationship between the fear of crime and public interactions with the police (PINT) has previously been established in the literature by O'Neil (1979), Percy (1986) and Reisig and Giacomazzi (1998), who all showed how public perceptions and fear of crime have a detrimental effect on public interactions with the police. This relationship suggests that there is going to be an additional degree of uncertainty when it comes to the interactions between the public and the police in addition to the interactions themselves. Aside from any preconceived notions or mistrust in the police that a person may hold, before any interaction has even taken place there is an unknown element that may influence the interaction in the form of the fear of crime of the individual.

In terms of the direct relationship between the fear of crime and public confidence, Skogan (2009) proposes an alternative model which may explain the failure of this factor to show significance in the simple structural model. Rather than the traditional accountability model of the FOC-PCON relationship (which suggests that concern about crime undermines public confidence), he puts forward evidence that suggests that confidence in the police actually leads to a reduction in the fear of crime, rather than a reduced fear of crime leading to improved confidence as theorised in the accountability

model. This is referred to as the reassurance model of the fear of crime, and is also evidenced by Baker, Nienstedt, Everett et al. (1982).

Whilst the simple structural model could only test the effects of FOC on PCON (the accountability model), this alternate relationship was tested for in the model development process and no evidence for the reassurance model of the fear of crime was found. This suggests that there is no solid evidence base to include the FOC factor as a direct precedent of PCON and supports its proposed use as an antecedent of the LPFs.

9.2.2.2 Relationships stemming from the Local Perspective Factors

With regards to the relationships between the LPFs and PIFs, previous work by Jackson and Sunshine (2007), Jackson et al. (2009), Jackson and Sunshine (2007); Jackson and Bradford (2009) Jackson and Sunshine (2007); Jackson and Bradford (2009) Jackson and Sunshine (2007); Jackson and Bradford (2009) and Jackson et al. (2013) found evidence showing that the perceptions of neighbourhood disorder (LAP) and social cohesion (LAC) directly influence public confidence. However, in a path analysis using data from ten sweeps of the British Crime Survey, Jackson et al. (2009) assessed the overall drivers of public confidence in a SEM model and did not find a direct link between social cohesion and overall public confidence. Whilst they did find a significant link between the perceptions of social cohesion and confidence in police-community engagement, therefore replicating the results found in Jackson and Sunshine (2007)⁴⁸ somewhat, the overall evidence for a direct relationship between the LPFs and PCON is mixed. Given this mixed evidence in the literature, during the model development process, both the direct, and the indirect relationships between the LPFs and PCON was tested for, and a more appropriate model fit was found for the indirect relationships between the LPFs and PCON; via the respective factors of PDEAL and PCOM.

⁴⁸ Jackson and Sunshine (2007) did not measure confidence using the same measures as in the present study. Instead, they used confidence in police effectiveness and confidence in police-community engagement as proxies for overall confidence. As the present study uses these measures (PDEAL and PCOM respectively) in addition to an overall factor for public confidence, caution must be taken with the comparability of results.

9.2.3 Links within the Police Influenced Factors

The final set of relationships is concerned with the effects within the Police Influenced Factors of PINT, PDEAL and PCOM. As all of these factors had been established in the simple structural model, during the model development process, any potential links between these factors were explored to examine whether there were any potential additional indirect effects of the PIFs on PCON. The link between the perceptions of police interactions (PINT) and perceptions of police community engagement (PCOM) has previously been explored in Reisig and Giacomazzi (1998), who state that “*positive attitudes toward police are a necessary precursor to the establishment of meaningful, co-operative ties between citizens and the police*” (p. 547). This suggests that in order to have a good quality interaction with the police, one must already be somewhat confident in the police. Whilst someone’s attitudes are likely to have an effect on the perceived quality of any interactions with the police, this suggestion of direct causality is questionable. Instead, we recognise that although PCOM and PDEAL *may* affect PINT in some form, this cannot be tested in the revised structural model due to the cross-sectional design of the study.

Because respondents completed the survey questions at a single point in time, any interactions between the police and the public must have occurred prior to this point. Therefore, the only logical order of any interaction effects within the PIFs in the revised structural model must be from PINT to PDEAL and from PINT to PCOM as conceptualised in Jackson and Sunshine (2007) and Stanko et al. (2012).

The potential of a relationship existing between PCOM and PDEAL is under-explored in the literature on models of public confidence. Even when they have been included as factors in the same study, no relationships between them were shown to have been tested (Jackson and Bradford, 2009; Stanko et al., 2012). This may be due to the previous use of these two factors as dependent variables in studies where they have been used as proxies for public confidence as in Jackson and Sunshine (2007), or simply because no relationship was found, therefore post-hoc model specification occurred. In the two studies where this link was tested, mixed results were found. Dukes et al. (2009) showed that there was a strong (.83) relationship between police response (which involved elements of police-public engagement) and the satisfaction with police

services (comprising elements of police effectiveness). However, Reisig and Giacomazzi (1998) found no evidence to support a link between citizen-police relations and the perceived problem solving ability of the police. Due to the potential to provide a new contribution to the literature, this relationship was hypothesised in the revised structural model.

Based upon the above evidence, combined with the careful use of specification searches, trial-and-error, and re-examinations of the original data, a revised structural model of public confidence in York was developed. This model is shown in Figure 13 along with the bootstrapped, standardised path estimates calculated by AMOS for the model⁴⁹.

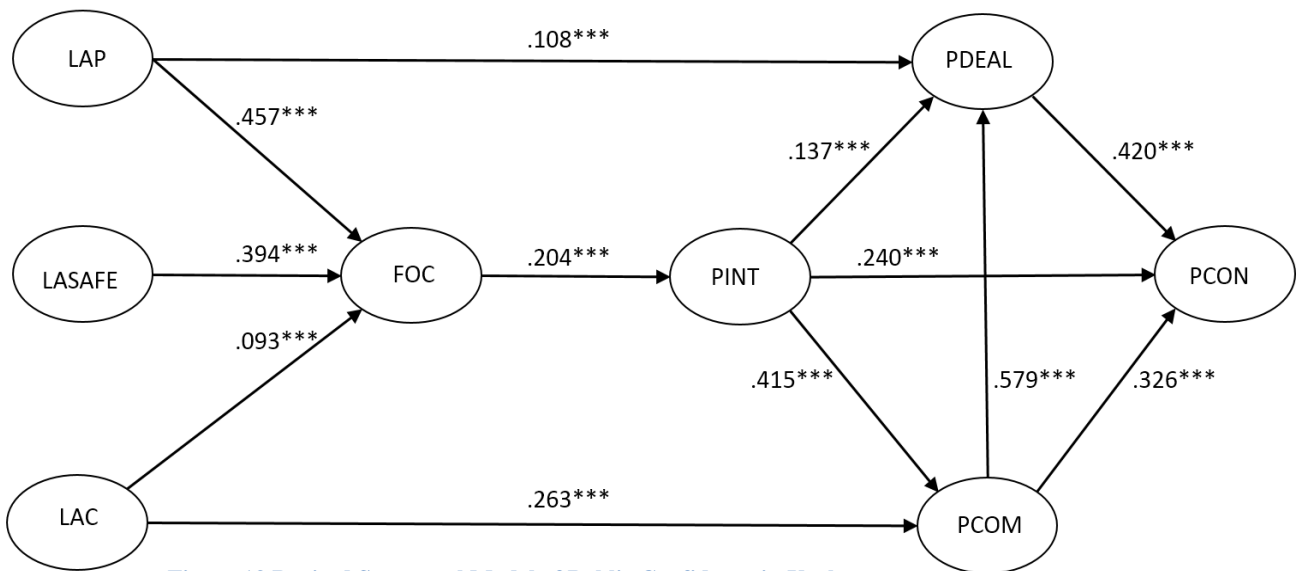


Figure 13 Revised Structural Model of Public Confidence in York

The results of the revised structural model give a much more holistic view of public confidence in York. As well as showing the direct effects of PCOM, PDEAL and PINT on PCON, the model shows how the factors that failed to show a direct impact on public confidence in the simple structural model, actually affect the overall framework of public confidence in York through a multi-step process summarised as follows:

⁴⁹ *** shows the path estimate is significant at the $P \geq 0.001$ level

1. The model shows how the drivers of confidence are rooted in an individual's perceptions of their local area; i.e. the Local Perspective Factors. Specifically, their perceptions of local area safety (LASFE), local area/social cohesion (LAC) and local area problems/disorder (LAP).
2. These local area perceptions all influence the specific worries and fears about crime in a local area (FOC).
3. As well as directly influencing FOC, these local area perceptions influence the general perceptions an individual has about the police. This is shown through the effects LAP has on the public perceptions of how well the police are dealing with local concerns (PDEAL), and the effects LAC has on the perceptions of the police relationship with their community (PCOM).
4. In conjunction with the FOC factor, all of the LPFs exert an influence on the perceptions of the quality of public-police interactions (PINT).
5. These perceptions of public-police interactions affect the more general perceptions an individual holds about the police; in terms of whether they think the police are dealing effectively with local concerns and engaging with their community.
6. Finally, these general perceptions of the police (in addition to the perceptions of police-public interactions) directly affect public confidence as shown in the simple structural model. This suggests that strategies aimed at improving public confidence should focus on improving these factors, all of which can potentially be modified through specific operations or behavioural changes.

N.B. As all survey questions were based on the same scale of "1" indicating a positive response/experience and "5" indicating a negative one, it seems as if increased fear of crime (FOC) leads to an increase in the quality of police interactions with the public (PINT). This is not the case; rather, as the values associated with the FOC factor increases, (indicating a higher fear of crime) the values for PINT increase, (indicating a negatively perceived interaction with the police). Therefore, this shows a negative relationship between FOC and PINT: as fear of crime increases, the perceptions of the public-police interactions will decrease.

9.3 Revised Structural Model Results

We now examine the overall fit of the model through an analysis of the GOF indices, before discussing the hypothesised relationships displayed on the path diagram.

Table 28 shows a selection of GOF indices for the revised structural model, compared to the previously calculated model fit indices for the simple structural model, and the validation sample of the measurement model. In order to aid further comparison, the fit indices for the measurement model using the full data sample are also shown.

Model	Revised Structural Model	Simple Structural Model	Measurement Model (Validation sample)	Measurement Model (Full Sample)
CMIN (χ^2)	2492.53	2441.83	1817.62	2441.83
DF	641	628	628	628
CMIN/DF	3.89	3.88	2.89	3.88
PNFI	.854	.838	.815	.838
P value Sig.	0.00	0.00	0.00	0.00
CFI	.952	.953	.940	.953
NFI	.936	.938	.912	.938
RMSEA	.047	.047	.054	.047

Table 28 Comparison of Model Fit Indices for the Revised Structural Model of Public Confidence

An examination of the GOF indices for the revised structural model reveal that all measures are within a range that would suggest a good fit of the data to the model⁵⁰. As with the simple structural model, in comparison with the validation measurement model, the fit of the revised structural model is greatly improved on almost all measures, to the point where the CFI value exceeds the more conservative model fit value of .95 as advocated by Hu and Bentler (1999). In comparison to the simple structural model, the fit statistics for the revised structural model are almost identical. A slight drop in the value of the CMIN/DF ratio and a rise in both CFI and NFI could suggest a slightly weaker fit of the model to the data; however, the PNFI value has increased significantly, suggesting a better fitting model. Given the increased complexity in the revised structural model, it is reasonable to assume that as well as achieving recommended fit levels, the overall fit of the model to the data has not decreased in comparison with the simple structural model.

⁵⁰ See section 7.3.4 for a discussion of the model fit indices

The bootstrapped⁵¹, standardised path estimates obtained from the model are shown in Table 29. Also shown is the bootstrapped standard error and associated Critical Ratio (C.R.) for each path estimate. As all paths in the model reached significance, the *p*-values are not shown.

Parameter			Path Estimate	S.E	C.R.	Structural Link Supported?
LAP	→	FOC	.457	.028	16.321	Supported
LASAFE	→	FOC	.394	.027	14.593	Supported
LAC	→	FOC	.093	.027	3.444	Supported
FOC	→	PINT	.204	.03	6.800	Supported
LAC	→	PCOM	.263	.027	9.741	Supported
PINT	→	PCOM	.415	.026	15.962	Supported
LAP	→	PDEAL	.108	.025	4.320	Supported
PINT	→	PDEAL	.137	.027	5.074	Supported
PCOM	→	PDEAL	.579	.025	23.160	Supported
PDEAL	→	PCON	.420	.026	16.154	Supported
PCOM	→	PCON	.326	.029	11.241	Supported
PINT	→	PCON	.240	.021	11.429	Supported

Table 29 Bootstrapped Path Estimates of the Revised Structural Model

9.4 Revised Structural Model Discussion: A New Framework of Public Confidence in York

The revised structural model shown in Figure 13 is now explained in detail. We use the framework of the three separate factor groupings originally introduced in section 8.4, and developed in section 9.2 in order to aid discussion and explain how the “flow” of public confidence, summarised above, occurs due to the interactions between all factors in the model.

9.4.1 Links within the Local Perspective/Intermediary Factors

The left hand side of the revised structural model shows how public confidence in York is rooted in the social perspective factors of LAC, LASAFE and FOC, and the intermediary factor of FOC. Specifically, it shows how an individual’s perceptions of their local area shapes their fear of crime. Examining these links, we can see that there

⁵¹ See section 7.3.5 for an explanation of the use of bootstrapping in the analysis

are large differences in the path estimates in the revised structural model. Although the effect that local area cohesion has on fear of crime is significant, the path estimate is small in comparison to others in the model. This suggests that whilst local perceptions of social cohesion are somewhat important for determining the fear of crime in York, they do not have the biggest influence. Instead, the strong path estimate between LAP and FOC shows that residents' perceptions of community disorder (in the form of visible local area problems) has the largest effect on the fear of crime in York. This is positive news for both the police and other local safety bodies operating in York. As discussed in section 4.5.8, it may not be possible to directly improve the perceptions residents hold regarding the fear of crime in their local area. However, the model suggests that local residents' fear of crime can be most easily improved through operations aimed at improving the visible signs of community disorder represented by the LAP factor.

Within the LPFs, the path estimate of .394 that local area safety (LASAFE) has on FOC is almost as strong as the impact shown in the LAP-FOC path estimate. This suggests that the LASAFE factor is also an important factor in the determination of fear of crime. This link is logical, in that it makes sense that how safe you feel in an area in general will affect how concerned you are regarding specific crimes occurring to you. As discussed in section 8.4.2.3, there are certain ambiguities in the literature regarding the distinctions between the "fear of crime" and perceptions of "local area safety". Because of this ambiguity, this study examined these two aspects in distinct factors; therefore, comparison to previous studies is made difficult. Despite this ambiguity, the emergence of two separate factors in the EFA and CFA and the strong path estimate in the hypothesised direction supports the inclusion of LASAFE as a driver of the fear of crime. These results add to the present literature on the relationship between the fear of crime/local area safety and public confidence, by showing that these two factors are, in fact, not the same. This means that in future multivariate studies of public confidence where either of these factors are explored, care should be taken in both the composition and description of the factors in order that sufficient model complexity can be preserved.

The revised structural model therefore supports the consensus in the literature that the fear of crime is shaped by residents' perceptions of their local area. This is important to

note because it shows that someone's fear of crime is not necessarily an unalterable, fully internalised view. Rather, it is malleable and subject to change based upon the underlying (yet potentially shifting) characteristics of the local area in which they live. As this study was not designed to directly assess the drivers of the fear of crime, it is likely that there are other factors, not included in the revised structural model that also exert an influence on this factor. Therefore, whilst we cannot draw fully informed conclusions about the drivers of the fear of crime in general, we can at least state that with regards to public confidence, changes in the perceptions of the local area in which York residents live, are likely to have a direct impact on the fear of crime; therefore indirectly influencing public confidence.

9.4.2 From the Local Perspective/Intermediary Factors to the Police Influenced Factors

The central section of the revised structural model shows the path estimates between LAP and PDEAL, FOC and PINT, and LAC and PCOM. These relationships show how the Local Perspective Factors of local area cohesion (LAC), local area problems (LAP), and the Intermediate Factor of the fear of crime (FOC) affect the Police Influenced Factors situated on the right-hand side of the model.

9.4.2.1 Relationships stemming from the Fear of Crime factor

Jackson and Sunshine (2007) found evidence suggesting that the worry about falling victim to crime (FOC) affects the perceptions of police effectiveness (PDEAL) as well as perceptions of police-community engagement (PCOM). This was not supported in the revised structural model, even though the dataset used (a rural English location) is significantly more similar to the city of York than previous UK based studies of public confidence, which have been mainly focused around London.

Instead, the revised structural model shows that the only theoretically valid relationship stemming from the FOC factor that is supported by the evidence is that between the fear of crime and public interactions with the police (PINT). Whilst the directionality of this link is difficult to prove, the significant relationship in the hypothesised direction, improvements to model fit indices from the inclusion of this directional link, and the previous work supporting this path, are considered to provide sufficient evidence for the directionality of this path in the model.

The presence of this link highlights the importance of reassurance policing strategies in York, aimed at working with local residents at a beat level to identify the signs of disorder. If these signs of disorder are contained or reduced, any perceived improvements in perceptions of local area safety and local area problems could act to shape the fear of crime, and in turn, the public-police interactions.

Despite testing for the reassurance model of the fear of crime during the model development process, testing this relationship found no evidence for the reassurance model holding true in this context. Instead, the results for both the simple structural model and the revised structural model replicate the findings of multiple authors suggesting that no clear link between the fear of crime and public confidence can be established (Bennett, 1994; Cao et al., 1996; Jackson and Sunshine, 2007; Jackson et al., 2009; Myhill and Bradford, 2012; Sindall et al., 2012).

The failure of the evidence to support the previously hypothesised links between FOC and PCON and between FOC and PDEAL/PCOM may seem to suggest that the role fear of crime plays in explaining public confidence is therefore rather limited, as it does not directly affect perceptions of the police. However, the revised structural model shows that the FOC directly affects the perceptions of public interactions with the police, which in turn, has direct effects on both overall confidence and the general police perceptions of effectiveness and community engagement.

9.4.2.2 Relationships stemming from the Local Perspective Factors

Whilst no evidence of previously established relationships between the LPFs and PCON were found in the simple structural model of public confidence in York, the revised structural model shows that in fact, the two factors of LAC and LAP indirectly affect public confidence through the respective variables of PDEAL and PCOM, in addition to their effect on the fear of crime.

The lack of a direct effect from LAC-PCON in the simple structural model, and the significant path estimate from LAC to PCOM in the revised structural model supports the theory that perceptions of social cohesion in an area can affect the perceptions of the

Chapter 9. The Revised Structural Model of Public Confidence in York

police. More specifically, it suggests that as residents' social capital increases (see section 8.4.2.1), they feel their local area is more cohesive, and that they are therefore neither alone, nor cut off from society. The path estimate between LAC and PCOM seems to show that this could cause a perception that the police are in some way responsible for this cohesiveness through their (presumably) successful engagements with the community. The police therefore seem to be acting as a "social glue" in holding together local areas and communities with York.

The same relationship also posits the opposite effect. Because individuals consider the police responsible for defending this community social cohesion (Sunshine and Tyler, 2003b; Jackson and Sunshine, 2007), when this is perceived as low (and perceived signs of disorder are high), the "social glue" effect will no longer hold. This causes local residents to feel that the police are failing in their duty as the "moral guardians" of their community and therefore leads to a reduction in the perceptions of police-community engagement.

The revised structural model shows how LAP has a significant effect on PDEAL. This relationship represents the hypothesis that as the perceptions of visible signs of community disorder (LAP) increase, perceptions of police effectiveness in dealing with the issues that matter to York (PDEAL) will decrease. As there are similarities in the item compositions of LAP and PDEAL, a logical assumption for this relationship can be established using an example. If residents feel that "people being drunk or rowdy in a public places" (LAP6) is a big problem in their local area, it is fair to assume that they will also perceive the police to be failing in their duty to effectively deal with "Alcohol use and alcohol related crime" (PDEAL8) in York. The theory explaining this relationship is similar to that explaining the link between LAC and PCOM, in that the public view the police as responsible for the social and moral order of their neighbourhood and communities. If residents perceive that this social contract has been breached, perhaps due to increasing signs of visible disorder in their local area, they lose confidence in the ability of the police to control this disorder (Jackson and Sunshine, 2007; Jackson and Bradford, 2009; Jackson et al., 2009).

In contrast to the strictly expressive based analysis of public confidence presented by Jackson (2004) and Jackson and Sunshine (2007) that suggests that social cohesion

(LAC) and perceptions of disorder (LAP) have the greatest impact on public confidence, the results of the revised structural model actually indicate that these effects are far more subtle. Instead, whilst these Local Perspective Factors may have some small effect on public confidence, any effect is indirect and mediated by the FOC-PINT-PCON path, or through the more general perceptions of police effectiveness (PDEAL) and police-community engagement (PCOM). Further evidence for this more instrumental view of policing held by residents of York comes from the lack of a direct relationship between LAC and PDEAL in the revised structural model as found in Jackson and Sunshine (2007). If this direct relationship were present, it would suggest that the “soft” views pertaining to perceptions of social cohesion could influence the more instrumental “hard” views about police effectiveness in dealing with crime, therefore lending support to the “expressive” model of public confidence. As this relationship was not found, it suggests that the views York residents hold about the police perhaps lean more towards the traditional roles of the police as crime-fighters or problem solvers. However, there are still several indirect links between LAC and PDEAL, and LAC and PCON, therefore an examination of both the other paths in the model, alongside the total effects of the LPFs on public confidence in the model will be required before any firm conclusions can be drawn.

9.4.3 Links within the Police Influenced Factors

The right-hand side of the model illustrates three types of relationship. Firstly, it shows the direct effects that the Police Influenced Factors of PDEAL, PCOM and PINT have on the dependent variable of PCON. These relationships have already been explored in the discussion of the simple structural model and will not be elaborated on. The second type of relationship shown in the right hand side of the model is the interconnectedness within the PIFs, i.e. the direct effects between these factors. The third deals with the indirect effects that the PIFs exert on the dependent variable of PCON. All these relationships are of specific interest as they show us not only how the PIFs directly exert an effect one each other, but also the mediating effects that these PIFs may have in changing the relationship between the other PIFs and PCON.

9.4.3.1 Direct effects within the PIFs

Evidence in the revised structural model was found which indicated the existence of relationships between PINT and PDEAL, and PINT and PCOM. These two links suggest that changes in the perceptions of procedurally just interactions between the public and the police can lead to changes in the perceptions of the police (both positively, and perhaps negatively more so) concerning their effectiveness in dealing with crime and engaging with local communities. As shown in section 8.4.1.3, this relationship is well established in the literature, with strong evidence linking procedural justice to general public perceptions of the police and legitimacy coming from the work of Tyler (1990); Tyler (2001); Tyler (2004), Tyler and Huo (2002), Sunshine and Tyler (2003b), McCluskey (2003), Skogan (2006), Tyler and Fagan (2008) and Hough et al. (2010). The fact that the path estimate between PINT and PCOM is over three times larger than the path estimate between PINT and PDEAL raises an interesting point. It suggests that although a positive interaction with the police will improve how effective an individual perceives the police to be, it will also cause a much larger change in the belief that the police are successfully engaging with the community. This large difference is a reversal in the magnitude of the effect found by Jackson and Sunshine (2007), and could again lend support to the neo-Durkheimian based “expressive” assessment of the police proposed by Jackson and Sunshine (2007), Jackson and Bradford (2009), and Jackson et al. (2009). If the quality of police-public interactions affect the perceptions of community engagement to this extent, it suggests the residents in York look to the police as moral guardians providing the “social glue” in a community. When positive interactions are experienced by the public, this perception is reinforced, but when negative interactions are experienced, the strong path estimate also infers that large falls in the perceptions of police-community engagement may occur as a result.

The relationship between PCOM and PDEAL that was hypothesised in the revised structural model was found to have the largest path estimate in the whole model, despite the mixed evidence available. IN addition, it was found that if the path was removed, a large drop in the model fit indices was encountered. This link once again supports evidence for an expressive based model of public confidence in York; as individuals perceive the police relationship with their community to be improving, this causes a

large positive change in the perceptions that the police are dealing with the crimes that are important to residents in York. This link provides a solid contribution to the literature by investigating the under-explored relationship between PCOM and PDEAL and finding new evidence that supports the hypothesis that public perceptions of police engagement with the community have a strong, positive effect on perceptions of police effectiveness.

9.4.3.2 Indirect and mediating effects within the PIFs

Two separate issues are dealt with here. The first is the indirect effects that the PIFs exert on each other, and public confidence. The second is the mediated relationships between PINT and PCON, and PCOM and PCON.

In the context of SEM, indirect effects are the “knock on” effects that one factor exerts on another through the chain of causal relationships present in a model. Of particular interest in this model is the PINT factor. Because PINT has a direct effect on both PDEAL and PCOM (which have direct effects on PCON), as well as having a direct influence on the dependent variable of PCON, this suggests that PINT has an important role in the overall model; as it, along with PCOM, both directly and indirectly affect public confidence. This means that any police interaction has the potential to change an individual’s confidence in four separate ways:

- The direct effect of PINT → PCON
- The indirect effect of PINT → PDEAL → PCON
- The indirect effect of PINT → PCOM → PCON
- The indirect effect of PINT → PCOM → PDEAL → PCON

The sum of the direct and indirect effects that PINT has on PCON is referred to as the total effects, and will be explored in the following section, alongside the indirect effects of all the other factors in the models. However, the sheer number of significant indirect effects stemming from this factor serves to highlight the importance of quality police-public interactions, both in York, and further afield.

The presence of these indirect effects suggest that the factors PDEAL and PCOM may be mediating the direct relationship between PINT and PCON. In Structural Equation

Modelling, a mediating effect occurs when a third factor affects the relationship between two directly related factors (Baron and Kenny, 1986). This third factor may help explain a relationship in the model; the direct relationship shows that one factor affects another, but may not explain “why” a relationship is present. On the right hand side of the model, we can see three potential mediations: the above-mentioned chains of PINT-PDEAL-PCON and PINT-PCOM-PCON, but also the PCOM-PDEAL-PCON causal chain. Although the direct relationships have already been theoretically established in the simple structural model, any mediations present in the model will serve to highlight the subtleties inherent in public confidence research.

Using the classic mediation testing procedures of Baron and Kenny (1986), the three potential mediations were examined. Because the introduction of a third variable caused a reduction in the path estimate between the first and second factors in all cases, it was established that partial mediations were present in all of the above-described relationships. PDEAL and PCOM both partially mediate the relationship between PINT and PCON. This suggests that following an interaction between the public and the police, it is not just the perceived quality of the interaction that affects any subsequent change in public confidence. Instead, any change is also affected by the pre-existing overall perceptions of the police (as represented by PDEAL and PCOM) that are held by the individual. In the same vein, the effect that perceptions of police-community engagement has on public confidence appears to affect an individual’s perceptions of the effectiveness of the York police in dealing with the issues that matter in York.

We now examine the direct, indirect and total effects present in the model in order to gain a complete understanding of which factors are key in influencing public confidence in York.

9.4.4 Direct, Indirect and Total Effects present in the model

One of the limitations of using traditional regression modelling to examine public confidence is that only one dependent variable can be tested each time, meaning that the interactions between dependent variables cannot be calculated accurately. Using SEM, we can examine multiple dependent variables simultaneously, and therefore examine the “chain” of effects that occur within a model when one factor is altered. In the revised structural model, these indirect effects are important in assessing the full impact

Chapter 9. The Revised Structural Model of Public Confidence in York

of each factor on public confidence, as they reveal the total effects that one factor exerts on another. In order to understand which factor has the most impact on public confidence, we must consider not only the direct effects the PIFs have on PCON, but also the indirect effects that the other variables may have exerted on the dependent variable.

Table 30 shows the direct effects present in the revised structural model. These are the path estimates presented in the model, however, as bootstrapped mean path estimates cannot be obtained for either direct, indirect and total effects in AMOS, the standardised direct effects are shown which is why slight differences in the path estimates are present.

	LASAFE	LAC	LAP	FOC	PINT	PCOM	PDEAL	PCON
FOC	.393	.091	.459					
PINT				.203				
PCOM		.262			.416			
PDEAL			.108		.136	.581		
PCON					.239	.327	.419	

Table 30 Direct Standardised Effects of the Revised Structural Model

This table and the others that follow it can be interpreted by considering the factors on the *x*-axis as the independent variable, and the factors on the *y*-axis as the dependent variable. For example, the top left cell can be interpreted as “*If the value for LASAFE increases by one standard deviation, the value for FOC will increase by .393 standard deviations.*”

As the table of direct effects explains nothing new about the model, we move on to the standardised indirect effects present in the revised structural model, shown in Table 31.

	LASAFE	LAC	LAP	FOC	PINT	PCOM	PDEAL	PCON
FOC								
PINT	.08	.018	.093					
PCOM	.033	.008	.039	.084				
PDEAL	.03	.159	.035	.077	.241			
PCON	.042	.159	.095	.108	.294	.244		

Table 31 Indirect Standardised Effects of the Revised Structural Model

Using a bootstrapping procedure recommended by Cheung and Lau (2008) and Preacher and Hayes (2008), the significance of these indirect effects in the model were tested. All indirect effects were statistically significant ($p < .001$) with a 95% confidence interval.

Examining this table shows all of the indirect effects present in the model. The final row in the table shows the indirect effects that the Local Perspective Factors and the Intermediate Factor of FOC have exerted on PCON through the public confidence causal chain in the revised structural model, as well as the mediated effects from PINT and PCOM to PCON. It was shown in section 9.4.3.2 that the direct effects that the LPFs have on PCON were partially mediated by the influences of PDEAL and PCOM. Table 31 shows how much the addition of the mediating variables reduced the direct effects that PCON and PCOM have on PCON. The large indirect effect of .294 that PINT has on PCON serves to highlight the importance of this factor in explaining public confidence by demonstrating the amount of mediation that occurs due to the introduction of the PDEAL and PCOM factors into the model.

Table 32 shows the standardised total effects of all factors in the revised structural model of public confidence in York. Of specific interest is the final row in the table that shows the indirect effects of the LPFs and the IF on public confidence⁵², and the sum of the direct and indirect effects that the PIFs exert on PCON.

⁵² Because these factors do not exert a direct effect on public confidence, these values are the same as in Table 31.

	LASAFE	LAC	LAP	FOC	PINT	PCOM	PDEAL	PCON
FOC	.393	.091	.459					
PINT	.08	.018	.093	.203				
PCOM	.033	.27	.039	.084	.416			
PDEAL	.03	.159	.143	.077	.378	.581		
PCON	.042	.159	.095	.108	.534	.571	.419	

Table 32 Total Standardised Effects of the Revised Structural Model

We now examine whether the sum of the direct and the indirect effects present in the revised structural model reveals a picture of public confidence that is different from an initial assessment of the model, as to the most important factors in explaining public confidence in York. In doing this, we can fully answer research questions one⁵³ and two⁵⁴. Based upon the data from the revised structural model shown in Table 32, we propose the following ordering of importance for the factors explored in the study in terms of their total effects on public confidence:

1. Police and the Community (PCOM)
2. Police Interactions with the public (PINT)
3. Police Dealing with local concerns (PDEAL)
4. Local Area Cohesion (LAC)
5. Fear Of Crime (FOC)
6. Local Area Problems (LAP)
7. Local Area Safety (LASAFE)

By comparing the ordering of importance gained from the revised structural model to the ordering suggested in the simple structural model, we see some interesting differences in the total effects that each factor exerts on public confidence:

⁵³ What are the factors that most affect people’s levels of public confidence in the police in York?

⁵⁴ How do these factors interact with each other to form an explanatory framework of public confidence in York?

Revised Structural Model: Order of Importance (Total effect on PCON)	Simple Structural Model: Order of Importance (Total effect on PCON)
1. PCOM (.571)	1. PDEAL (.404)
2. PINT (.534)	2. PCOM (.327)
3. PDEAL (.419)	3. PINT (.231)
4. LAC (.159)	4. FOC (.044)
5. FOC (.108)	5. LAP (.034)
6. LAP (.095)	6. LAC (-.025)
7. LASAFE (.042)	7. LASAFE (.017)

Table 33 Comparison of the Implied Ordering of Factor Importance

Whilst the simple structural model showed that both PINT and PCOM did have a direct effect on public confidence, these effects were rather weak in comparison to the direct effects on PCOM demonstrated by PDEAL. The addition of the indirect effects to the calculations showed large changes in the effects that both PINT and PCOM have on PCON and suggest that out of the PIFs, these are the two most important factors in explaining public confidence in York.

An examination of the total effects present in the model shows us that contrary to the initial assessment of the Local Area Cohesion factor as being a relatively insignificant driver of public confidence, the large indirect effect that this factor has on PCON means that its overall importance in explaining public confidence in York is much greater than first thought. This lends further support to the literature, which suggests the positive relationship between the perceptions of social cohesion and public confidence. However, contrary to previous work (Jackson and Sunshine, 2007; Jackson and Bradford, 2009; Jackson et al., 2009; Jackson et al., 2013), this model has revealed that the impacts that social cohesion has on public confidence are mainly exerted indirectly, perhaps highlighting a more nuanced relationship between these two factors than has previously been hypothesised. Whilst the Local Perspective Factors all exert rather small individual indirect effects on PCON, when we sum these indirect effects we obtain an overall value of .296. This arbitrary addition of indirect effects is purely illustrative and we cannot make any direct conclusions based on it, yet, it serves to show

the overall importance of the perceptions that York residents hold about their local area in a broader framework of public confidence

9.5 Concluding Remarks

The purpose of the revised structural model was to answer the second research question: *“How do these factors interact with each other to form an explanatory framework of public confidence in York?”* By examining the role these seven factors play in explaining the overall framework of public confidence in York we answer this question as well as adding further detail to the first research question *“What are the factors that most affect people’s levels of public confidence in the police in York?”*

The revised structural model shows how public confidence in York is rooted in the perceptions that residents hold regarding their local areas. These Local Perspective Factors affect the Intermediary Factor of the fear of crime held by residents (FOC), as well as an individual’s more general perceptions of the police. The fear of crime affects the perceptions of interactions between the police and the public, which not only directly influences public confidence, but also affects the more general perceptions of the police. These general perceptions of the police both directly affect public confidence, whilst also mediating the relationship between PINT and PCON. In addition, the indirect effects of the LPFs are shown to play an important role in the overall understanding of public confidence in York

In the above discussion, we presented what is essentially a modified expressive model of public confidence in the city of York. Whilst the evidence shown in the revised structural model supports previous assertions that local area perceptions affect one’s overall fear of crime (Jackson, 2004; Jackson and Sunshine, 2007), the supposed direct relationship between these perceptions and overall public confidence could not be proven in either the simple structural model or the revised structural model. Instead, we find that the main role played by the LPFs is to affect the general perceptions of the police in terms of their perceived effectiveness and levels of police-community engagement as shown in Jackson (2007; 2009). It is these general perceptions of the police, along with the quality of the police-public interactions that directly affect public

confidence of the police in York, with smaller, indirect effects on confidence being shown by the other factors in the model.

Whilst the examination of direct effects in structural models is *de rigueur*, very few studies examining public confidence consider the indirect and total effects that factors exert on public confidence in addition to the direct effects. Whilst some authors mention indirect effects in terms of the general chain of effects that occurs in an SEM model (Dukes et al., 2009; Skogan, 2009), the only authors to discuss the specific indirect and total effects occurring in a model are Baker et al. (1982) and Jackson and Bradford (2009). What then, has the use of indirect and total effects in the revised structural model shown us? In contrast to the results of the simple structural model, which only supported the testing of direct relationships and therefore only revealed three factors with significant effects on public confidence, the revised structural model shows that all of the factors do have a statistically significant (if very minor) indirect effect on public confidence. This study, therefore, provides a further methodological contribution by clearly demonstrating how a thorough examination of the total effects occurring in a model of public confidence is necessary in order to identify the key factors of importance in a model of public confidence and gain a holistic picture of this complex concept.

We now use the locational data gathered in the survey to assess whether this framework of public confidence is consistent throughout York, or if certain local and neighbourhood characteristics affect the relationships shown in the revised structural model.

9.6 Testing the Homogeneity of the New Framework of Public Confidence in York

9.6.1 Introduction

The revised structural model revealed a new perspective on public confidence in York through the development of a novel framework showing the multifaceted, interacting effects of a number of factors on public confidence. In this analysis, we use the locational data collected in the study to test whether the revised structural model is homogenous throughout York, or whether there are differences present from one area of the city to another. This is performed by examining whether the perceptions someone

has about their area has a moderating effect⁵⁵ on the relationships specified in the revised structural model.

Doing this allows us to uncover any existing subtleties in the dataset that may affect the general implications for policing operations in York if public confidence is a key concern. We test whether the recommendations and implications suggested in the following chapter can be applied with confidence by the NYP throughout the whole of York, or whether a certain degree of caution must be taken in the development of any new operations aimed at maintaining or improving public confidence throughout different areas of the city. In doing so, we answer research question three: “*Is the framework of public confidence homogenous throughout York?*”

The purpose of this testing is primarily aimed at assessing whether potential differences *could* exist in York, and therefore whether police managers need to be aware of the general applicability of initiatives or operations that they may wish to implement in order to influence the factors discussed in the revised structural model. This analysis does not claim to offer specific advice as to where exactly in York differences to policing operations on a ward-by-ward basis may be necessary. Instead, it uses the general concepts of highly perceived areas of the city, versus poorly perceived areas, to offer guidance that policing managers and front-line officers could use to assist in making their own judgements about where in York changes may be required based upon their unique local knowledge. To this end, we offer a contribution to practice as well as theory, however, given the vast array of locational, socio-economic and demographic differences that may be present from one York ward to another, we do not seek to offer detailed explanations of why such differences may occur, simply whether differences do, or do not exist.

9.6.2 Framework Testing Development

It is well recognised that perceptions of the police can differ quite significantly by local area and that both the social and structural characteristics (geodemographics) of a neighbourhood can affect these perceptions (Jacob, 1971; Dunham and Alpert, 1988;

⁵⁵ A moderating effect occurs when a third variable (in this case, perceptions of local area) changes the relationship between two related factors in an SEM model (Baron and Kenny, 1986).

Reisig and Giacomazzi, 1998; Reisig and Parks, 2000; Ashby, 2005; Jackson et al., 2013). Due to this well-established link, we do not test whether these neighbourhood differences influence public confidence or perceptions of the police in general in York. Instead, we assess whether the perceptions residents hold regarding their local area affects the specific paths we have identified between factors in the revised structural model. Doing this allows us to examine where changes might be required to policing operations aimed at influencing the factors in certain types of areas in the city.

As described in Chapter 6, respondents to the survey were required to enter their full residential postcode in order to complete the survey. It was recognised that some respondents might not have felt entirely comfortable with this; however, both reassurances and incentives were offered to encourage respondents to answer accurately. This postcode information was used in this particular analysis to assign each survey response to one of the 22 electoral wards within York, which allowed us to perform comparisons of the data on a ward-by-ward basis. For the purpose of this analysis, wards were used as a proxy for the term “neighbourhood” that had been used throughout the survey.

Examinations of neighbourhood differences and their impact on perceptions of the police typically focus either on resident perceptions of their local area (Schafer, Huebner and Bynum, 2003), or use quantitative variables linked to deprivation such as mean income, crime rates etc. (Williamson, Ashby and Webber, 2006). As residents’ perceptions of their local areas were obtained in the survey, this type of information was used to classify the wards in York depending on the general perceptions held by the residents of the wards. Categorising neighbourhoods in this manner means that we gain a more accurate representation of the neighbourhood characteristics, social cohesiveness and problems that are actually perceived by residents.

In order to rank and categorise these neighbourhoods in terms of the perceptions of residents living in them, we used the scores obtained in the survey with respect to the Local Perspective Factors (LPFs) of LAP, LASAFE and LAC. Individual scores for these three variables were summed together to form a new case variable of “Total Local Area Perceptions” (TLAP), with higher scores on this variable indicating generally poorer perceptions of the local area. An average score per ward for this variable was

then created by summing the total scores of each resident then dividing this by the number of survey responses obtained per ward.

As it is only possible to compare two groups together in multigroup SEM (Hair, 2010), in order to see where differences in the revised structural model may lie, we compiled the responses of a number of similarly ranked wards together in order to assess group differences between wards which residents perceived positively, versus wards which residents perceived negatively. The survey responses for the top five scoring wards in York (in terms of their low total scores for the TLAP variable) were combined to create one group named “Highly Perceived Wards” (HPWs) ($n=120$) and the responses for the bottom five scoring wards were combined to create the second group of “Poorly Perceived Wards” (PPWs) ($n=373$). Five wards were combined in each instance to give a minimum number of 100 cases per group and reduce any problems with the scores for one ward overly affecting the results of the analysis, whilst still maintaining adequate differences in the scores between the groups to allow any differences to be tested. The calculations for the group rankings are shown in Appendix I: “Ward Perception Calculations”.

9.6.3 Framework Testing Results

To test the hypothesis that differences in the path estimates will occur between the two groups, we must test for the equivalence of paths when the revised structural model is run simultaneously for both groups, then test for significant differences between these path estimates (Byrne, 1994).

This is achieved by obtaining the critical ratios of differences table produced by AMOS, and using the “Stats Tools” software package (Gaskin, 2012) to compare the path estimates and calculate p -values to determine the significance of the differences between the estimates. Testing for differences in path estimates this way allows us to

evaluate the strength and direction of any changes in the path estimates found between the models (Arbuckle, 2011).⁵⁶

The results of this analysis are shown in Table 34.

Relationship			Highly Perceived Wards		Poorly Perceived Wards		
			Estimate	P	Estimate	P	Critical Ratio
LAP	→	FOC	0.348	0.000	0.281	0.000	-0.672
LASAFE	→	FOC	3.298	0.006	0.514	0.000	-2.3**
LAC	→	FOC	0.076	0.476	0.093	0.010	0.148
FOC	→	PINT	0.358	0.007	0.387	0.000	0.183
LAC	→	PCOM	0.471	0.000	0.195	0.000	-2.275**
PINT	→	PCOM	0.247	0.000	0.340	0.000	0.999
LAP	→	PDEAL	0.283	0.000	0.105	0.000	-1.957*
PINT	→	PDEAL	0.101	0.255	0.038	0.471	-0.608
PCOM	→	PDEAL	0.679	0.000	0.484	0.000	-1.293
PCOM	→	PCON	0.148	0.139	0.424	0.000	2.161**
PINT	→	PCON	0.304	0.000	0.244	0.000	-0.655
PDEAL	→	PCON	0.516	0.000	0.468	0.000	-0.396

Notes: * p-value < .01; ** p-value < .05; * p-value < .10**

Table 34 Public Confidence Framework Testing: Revised Structural Model

9.6.4 Framework Testing Discussion

The results table shows an estimation of the unstandardised regression weights for each path in the revised structural model for the two groups in question, as well as the *p*-values for each of these estimates. The Critical Ratio (C.R.) value (*z*-scores) for the comparison of each path is shown in the far right column. The paths where significant differences were found are highlighted in the table. A positive *z*-score shows that the path estimate is larger in the Poorly Perceived Wards, and a negative score shows that the path is stronger in the Highly Perceived Wards. We immediately see that there are four paths in the model that are significantly different across the two groups, therefore

⁵⁶ Because we are only interested in the equivalence of regression weights between latent factors, we do not test for either factorial equivalence (Jöreskog, 1971) or latent mean structure equivalence (Byrne and Stewart, 2006).

suggesting that the revised structural model is not completely homogenous throughout York.

An initial comparison of the overall levels of public confidence between the two groups in these areas shows that in both groups, generally positive perceptions of the police exist,⁵⁷ suggesting it is not the perceptions of the police that are causing these differences in the paths within the model, but the perceptions of the local area. We now briefly explore the differences found within the model with reference to the two groups.

9.6.4.1 *Highly Perceived Wards*

We first examine the three paths that are stronger in the HPWs. These are the relationships between LASAFE and FOC, LAP and PDEAL, and LAC and PCOM. The negative CR value for these links suggests that any changes in the independent variable in the HPWs will result in a greater change in the dependent variable in comparison to the PPWs.

The stronger path estimate in the HPWs between LASAFE and FOC, suggests that in the HPWs, where the perceptions of safety are higher than in PPWs⁵⁸, residents are more aware of the subtle changes in their area that affect their fear of crime. As residents' perceptions of safety in the HPWS are almost at 100%, it is unsurprising that small changes in this level will result in extremely large changes in associated fear of crime. Whilst perceptions of local area safety are by no means low in the PPWs at 79%, even this small difference has a noticeable effect on the FOC factor.

The link between neighbourhood geodemographic characteristics and the fear of crime is well recognised (Skogan, 1986; Ashby, 2005; Williamson et al., 2006; Brunton-Smith and Sturgis, 2011), with residents in areas where high levels of social capital exist typically exhibiting lower levels of fear of crime. This analysis adds a further dimension

⁵⁷ 62% of HPWs residents had high levels of overall confidence compared to 64% of PPWs (mean item values for all “strongly/agree” responses in the PCON factor)

⁵⁸ 99% of HPWs residents agreed that they felt safe in their local area compared to 79% of PPWs residents (mean item values for all “strongly/agree” responses in the LASAFE factor)

Chapter 9. The Revised Structural Model of Public Confidence in York

to this view by showing that in these types of areas (represented by HPWs⁵⁹), not only do residents exhibit lower levels of worry about crime⁶⁰, but also that perceptions of local area safety are more important drivers of the fear of crime for these residents than individuals resident in PPWs.

In the Highly Perceived Wards, the strengthened links between LAP and PDEAL, and LAC and PCOM, suggest that the expressive model of policing discussed earlier in this chapter, is shown to be stronger than in Poorly Perceived Wards. In the HPWs, as signs of local area problems increase, and perceptions of social cohesion decrease, this will have a stronger effect on the perceptions held by residents of HPWs that the police are failing in their role as moral guardians or the “social glue” of the community. The weaker, but still significant relationships between these factors in the PPWs suggests that this expressive model of policing holds true throughout York, although the difference in the estimates could suggest that residents in PPWs may not be as responsive to changes in their neighbourhood than residents in HPWs.

If residents are accustomed to seeing signs of social or community disorder in their local area (i.e. if they live in PPWs), then small increases or decreases in these signs will not affect the perceptions they hold regarding the effectiveness of the police in dealing with these problems or engaging with the community. This may be due to a perception that they feel the police are already failing in their duty to deal with disorder, as shown in the data by the lower perceptions of police effectiveness experienced by the residents in PPWs⁶¹; however, the generally high confidence in the police shown by residents in these areas counters this argument somewhat.

However, if residents are not used to these signs of disorder, (i.e. if they live in HPWS), then any perceived increases in disorder will result in larger associated decreases in their perceptions that the police are dealing effectively with problems and engaging with the

⁵⁹ 87% of HPWs residents agreed that their local area exhibited cohesive qualities compared to 46% of PWs residents (mean item values for all “strongly/agree” responses in the LAC factor)

⁶⁰ 66% of PPWs residents agreed they were not concerned about specific crimes occurring in their area, compared to 90% of HPWs residents (mean item values for all “strongly/agree” responses in the FOC factor)

⁶¹ 43% of PPWs residents agreed that the police were effective in dealing with the problems in York, compared to 54% of HPWs residents (mean item values for all “strongly/agree” responses in the PDEAL factor)

community. This demonstrates once more, how residents of HPWs may be more attuned to the signs of social and community disorder than residents of PPWs.

9.6.4.2 Poorly Perceived Wards (PPWs)

The only path shown to have a greater effect within PPWs was that between PCOM and PCON. This shows that in areas where residents have poor perceptions of their local area, the strength of the relationship between the perceptions of police-community interactions and public confidence is significantly stronger than the same link in HPWs.

This indicates that residents of PPWs feel that the police do not understand the problems affecting the local area and are therefore failing to successfully engage with the community⁶². Therefore, if they perceive the police to be improving in this area, this will have a relatively large change on overall confidence perceived by residents of PPWs. This suggests that small additional efforts by the police to engage with the local community could have large beneficial effects in these types of wards or neighbourhoods.

The reverse of this also appears to be true. Residents of HPWs, (with high levels of perceived safety and cohesion, coupled with low levels of signs of disorder) have better perceptions of police-community engagement than residents of PPWs. They may therefore feel that additional police interaction within the community is not required, due to the (assumed) absence of these signs of community and social disorder. This could be indicative of a feeling that relationships between the police and the community within HPWs are already acceptable, and that additional police operation looking at improving police-community relations in these sort of areas would be unwarranted due to the relatively smaller increases in public confidence that could be obtained from any policing efforts.

⁶²42% of PPWs residents agreed that the police were interacting with their communities, compared to 54% of HPWs residents (mean item values for all “strongly/agree” responses in the PCOM factor)

9.6.4.3 Caveats

We offer a few notes of caution with regards the interpretation of these results. As the critical ratios are calculated using unstandardised regression weights, they are subject to the large factor loading effects of the one path between each factor and its composite items that is fixed to a regression weight of one. This has the potential to potentially skew the calculations of the other factor loadings, especially in those factors where there are only a small number of items per factor. This issue, along with the 99% levels of perceived safety in the HPWs group⁶³ serves to explain the very large regression weight of 3.298 between LASAFE and FOC in this model. Finally, the differences present in the sample sizes of the two groups means that, due to the increased statistical power, the estimates for the PPWs group may be more accurate than in the HPWs group. Therefore, the exact magnitude of the differences in the paths between the models may not be entirely dependable. With these caveats in mind, we draw the following conclusions.

9.6.5 Concluding Remarks

Even within a small, relatively homogenous city such as York, this analysis has shown that there are differences in the overall framework of public confidence depending on the perceptions people hold about their local areas. In order to account for this, policing operations must be altered depending on the specific neighbourhood context. Whilst this may already occur to some degree, this study provides a base of evidence to support any future changes.

We propose that both police managers and front-line officers consider the views of local residents as to what needs to be changed in their areas, as well as the evidence offered here, when making decisions as how best to serve the local areas in which they operate. Whilst local neighbourhood policing teams may already have some idea as to the style of policing strategies that will work best in the areas they are serving, this analysis serves to highlight the importance of adapting policing operations depending on the type of area they are serving to make the most efficient use of limited resources.

⁶³ 99% of HPWs residents agreed that they felt safe in their local area compared to 79% of PPWs residents (mean item values for all “strongly/agree” responses in the LASAFE factor)

Chapter 9. The Revised Structural Model of Public Confidence in York

Exactly why these differences occur remains unknown and underexplored in the literature (Brown and Benedict, 2002; Hawdon, 2008). We offer a contribution to knowledge by showing how individual perceptions of a local area seem to affect certain relationships in the revised structural model. In addition, we show how the NYP operating in York can adapt their policing styles, depending on the geodemographic characteristics of the areas they are operating in, thus addressing the literature gap identified by Hawdon (2008), who state:

“By understanding which policing style generates positive resident views of police in various types of neighborhoods, officers will be freed from a “one-size-fits-all” model of policing. Instead, they can tailor their policing to the neighborhoods they patrol. Community policing, currently considered the best style of policing, is expensive. However, it may not be necessary to implement community policing in certain neighborhoods where less expensive styles may be equally effective.” (Hawdon, 2008, p. 198)

We now consider the implications that the simple structural model and the revised structural model could have on community safety bodies in York, as well as briefly detailing the existing impact of the joint survey carried out with City of York Council (see section 6.2.7).

CHAPTER 10. RECOMMENDATIONS AND IMPLICATIONS

10.1 Introduction

Both the simple structural model and the revised structural model set out a new framework for the understanding of public confidence in York. However, knowing the effects that one factor can exert on another is only part of the story if effective management of public confidence in York is desired. This section examines the changes that have already been implemented in York based on the results of the joint crime survey, and details the further changes could be implemented by the North Yorkshire Police, City of York Council and the Safer York Partnership based upon the results of the above analysis, in order to improve public confidence in York. It also considers the wider implications to the policy and practice of performance measurement and performance management in the police forces of England and Wales.

10.2 Existing Impact of the Study within York

A recent report by the City of York Council (2013a) highlighted some of the policy changes that have already occurred based upon the results of the joint crime survey carried out in Spring 2012 (see section 6.2.7). These changes are as follows.

10.2.1 Dedicated Council Cabinet Post

Whilst the survey revealed the overwhelming majority of York residents (78.5%) felt that their local area was a safe place to live in, further improvements to this figure are still desired. In order to achieve this, a new city council cabinet post was created with the responsibility for Crime and Stronger Neighbourhoods. The purpose of this post was to assist in keeping the council focused on issues relating to crime and safety, co-ordinate partnerships at a strategic level, and prepare York for the introduction of the North Yorkshire Police and Crime Commissioner. Having a dedicated post on the council cabinet should allow for a strong focus on developing new schemes to tackle crime and community safety in the city with the support of multiple partners.

10.2.2 Improvements to Anti-Social Behaviour Strategies

The joint survey showed that although 64% of residents felt that their area did not have an overall problem with crime or anti-social behaviour (ASB), there were a few areas for improvement. As over 10% of residents felt that noisy neighbours or loud parties

were a problem in their area, a new noise patrol team was developed in partnership with the police. This patrol team is guaranteed priority support by the council, and focuses on quickly resolving both chronic and acute noise complaints throughout the city. By quickly resolving any problems with noise in the neighbourhoods around York, it is not only improvements in general perceptions of the local area that could be achieved. In resolving issues and disputes between neighbours, it is possible that increases in perceptions of local area cohesion (LAC) could be gained; especially if any issues are related to one house, and the rest of the community seeks help in dealing with this problem from the police. If these problems are then dealt with quickly and effectively by a multi-partner team consisting of the police and the city council, these bodies could be perceived as dealing with the issues that affect local people in the community and therefore providing a further benefit in the form of increased perceptions of police-community engagement (PCOM).

One of the most problematic issues identified in the joint survey relating to ASB was people being drunk or rowdy in public places. As 18% of York residents felt that this was an issue in their local area, the second annual York Crime Summit was focused around this area. In order to reduce this problem, new legislation was implemented in order to tighten up alcohol licensing in York, late-night levies on bars and clubs have been proposed, and additional Designated Public Place Orders (DPPOs) are being considered to reduce street drinking in certain areas of the city. In an attempt to reduce ASB in general, the city council is collaborating more closely with Safer York Partnership and the North Yorkshire police to make those responsible for vandalism repair any damage through the Community Payback scheme. A new approach to Multi-Agency Problem Solving (MAPS) has been developed to deal with ASB in York, by bringing together all relevant partners into one structure so that issues with ASB can be more quickly resolved. In 2012-20123, the number of calls for service relating to ASB was reduced by 2169 calls equating to a 17% fall in ASB in the city (City of York Council, 2013a).

10.2.3 Strengthened Collaborations

These changes are an extremely positive sign for York. We have shown in the revised structural model how improving residents' perceptions of their local area could lead to

improvements in public confidence. The collaborations occurring between the North Yorkshire Police, City of York Council and the Safer York partnership in attempting to do this, shows how partnership working with the aim of reducing crime and disorder, whilst simultaneously improving public confidence in policing can be achieved. The benefits of partnership working such as this has been recognised by Myhill and Britain (2003) who identified the potential for resource maximisation, and by Maguire and John (2006) who recognised the improvements which could be made in intelligence gathering and sharing. We therefore recommend that these partnerships continue in York, in order that residents' perceptions of their local areas, as well their perceptions of the police and other partnership bodies can continue to be improved. This can be achieved through the continued campaigning of the council cabinet post for Crime and Safer Neighbourhoods, and with the support of the Police and Crime Commissioner for North Yorkshire.

10.3 Recommended Changes to Policy and Practice within York

We now investigate what the analysis of the structural models presented above means in terms of further specific policy decisions that could be undertaken by the North Yorkshire Police and other local safety partners operating in York wishing to improve public confidence. In doing so, we aim to answer research question four: *“How can public confidence in the police in York be improved?”*

10.3.1 Increased Police Visibility

It has previously been shown that public perceptions of police effectiveness can be improved through increased police visibility and presence (Pate et al., 1986; Skogan and Hartnett, 1997). Hawdon, Ryan and Griffin (2003) argued that if residents see a visible policing presence in their community then they are more likely to perceive that the police are making an effort to fight crime in the areas. Targeted foot patrols have also been shown to positively affect public confidence in the police in conjunction with other elements of community policing (Tuffin et al., 2006). However, too much patrolling has been shown to have negative consequences. For example, in areas where there has previously been tensions with the police, seeing officers patrolling may not lead to an increase in reassurance and could possibly reduce reassurance and perceptions of the police (Millie and Herrington, 2005; Millie, 2010).

Sindall and Sturgis (2013) showed that visibility has a significant effect on confidence and that reducing the overall numbers of the police is likely to lead to erosions in confidence. An investigation by HMIC into the reduction of policing numbers since the start of austerity measures (see section 1.3) has shown that the numbers of police in visible roles reduced by 5500 between December 2010 and February 2012 (HMIC, 2012c). Therefore, it seems very clear that despite falling levels of available officers, police visibility within York should be maintained and increased where possible. This was highlighted in qualitative data collected through the question: “*What one thing could the police in York do to improve your confidence in them?*” The majority of these responses focused on a desire for increased police visibility and presence in terms of foot patrols as opposed to bicycle or vehicle patrols. This suggests that whilst the likely impact of highly visible beat policing (in terms of crime prevention) is low (and resource intensive) if improvements in public confidence are desired, high visibility of police representatives is key.

10.3.2 Continued Focus on Reassurance, Neighbourhood and Community Policing

Myhill and Quinton (2010) caution that the recent funding cuts made in policing may lead to an “*overtly enforcement based crime control model*” (p. 279). This could result in a shift in focus away from the neighbourhood policing style that has been shown to effectively deal with the Anti-Social Behaviour (ASB) and public disorder issues that adversely shape public confidence.

Therefore, increasing the focus on “reassurance policing”⁶⁴ could go a long way towards improving the Police Influenced Factors of PCOM and PDEAL along with the Intermediary Factor (IF) of the fear of crime (FOC). Reassurance policing could help by targeting those signals of social disorder that lead to feelings of insecurity. If the police or other local bodies (such as the City of York Council or Safer York Partnership) are successful in reducing these more visible drivers of local area concerns, it is conceivable that the perceptions held by residents in the area regarding the police could improve to reflect these changes (Reisig and Giacomazzi, 1998). However, any reductions in social

⁶⁴ Reassurance policing involves working with local residents at a beat level to identify the signals of disorder (such as those identified in the LAP factor) and taking action to remedy these situations.

disorder in an area will take time to “*seep into the public consciousness*” (Stanko and Bradford, 2009, p. 327), therefore any increases in public confidence based upon improved perceptions of residents’ local areas may be difficult to measure.

In addition to the potential improvements in the perceptions of local area problems and police effectiveness, reassurance policing could also affect the perceptions of police engagement with communities (PCOM). A demonstrable willingness to engage with, and get involved with the community in question through locally based, neighbourhood-policing strategies provides a clear opportunity for the police in York to improve their relationships with a range of different local areas and communities. Whilst it is recognised that it is difficult for the police to obtain full community “buy-in” with regards to sustained community engagement projects (Long, Wells and De Leon-Granados, 2002), the potential benefits to be obtained by achieving this are recognised in the literature as being worth the significant efforts required from the police (Skogan and Steiner, 2004). Given that the revised structural model and the total effects present in the model showed the PCOM factor to have the largest effect on public confidence, it is clear that effectively managing the relationships between the police and the different communities of York can therefore play an important role in the maintenance and improvement of public confidence in the city.

Reassurance policing may also help to improve the perceptions of interactions between the police and the public by affecting the fear of crime held by members of the public (see section 9.4.2.1). If the perceptions of a local area can be improved through neighbourhood and community-policing measures as discussed above, this could lead to a decrease in the fear of crime held by residents of the local area. This could therefore have the potential to lead to interactions between the police and the public that are perceived in a better light, due to the direct effects that FOC was shown to have on PINT in the revised structural model.

10.3.3 Improved Communication from the Police

Wünsch and Hohl (2009) and Hohl et al. (2010) have shown that improved communication by the police towards the public can lead to a small but significant increase in perceptions of fairness, community engagement and confidence. These studies explored the potential for external stimuli to improve confidence in the police in

London. This was performed through the targeted leafleting of areas under investigation which set out what the Metropolitan police service was doing to address the specific community concerns in that area. Through the analysis of longitudinal survey data, it was found that perceptions of police fairness, community engagement and overall confidence all saw statistically significant increases.

There is no reason that the NYP could not carry out similar operations aimed at targeting areas in York where the perceived levels of social disorder is high (or where the levels of confidence are low). If a concerted effort was made to keep residents informed as to what the police are doing to deal with the crime and disorder issues that are important to *them*, then this could potentially lead to increased levels of satisfaction with the police. Based on the revised structural model, improved satisfaction and confidence in the police could result from both an improvement in local area perceptions (filtering through the model indirectly), and from a direct increase in the perceptions of how well police are dealing with the issues that matter in York leading to increased overall confidence. According to Hinds and Murphy (2007), those who feel more informed about what the local police are doing have higher levels of confidence in the police. Therefore, if the police, the council, or other public body is seeking improvements in public perceptions of the services they provide, the existing literature and the analysis of the revised structural model both suggest that keeping residents of York informed about the actions that are being taken to deal with the issues that matter to them is critical.

However, it is important to note that any information must be relevant. Stanko et al. (2012), note that if communications do not reflect the concerns of those who receive them, they can feel that the police are out of touch with the local area/community and therefore perceptions of police-community engagement and overall trust could fall as a result. They caution that newsletters: “...cannot be a cheap substitute for engaging with the public, finding out about local concerns and responding to them” (Stanko et al., 2012, p. 325). Therefore, if the NYP, SYP or CYC were to engage in such a programme, it must be the result of a carefully targeted consultation of local residents to find out the key issues that are important to them.

10.3.4 Improving the Interactions between the Police and the Public

Whilst there is debate around what people actually want from the police during face-to-face encounters (Webb, 1998; Tyler and Huo, 2002; Casey, 2008; Hough et al., 2010), it is clear that poor interactions with the police have the potential to significantly harm public confidence. In addition, these negative encounters with the police have been shown to have a much more significant effect on public confidence than positive encounters do (Skogan, 2006). This asymmetry in negative/positive interactions could not be tested in the current sample due to the large imbalance between respondents with overall positive interactions with the police (706 respondents) and respondents with overall negative interactions (16 respondents). However, the very fact that the relationship between PINT and PCON is both positive and significant, even though the PINT sample consists mainly of positive interactions, shows that it is possible for the police in York to actually improve public confidence through good quality interactions, rather than just prevent a decline.

Due to this asymmetry, Innes (2006) suggests that rather than introducing new innovations designed to increase the number of public-police interactions, the focus should instead be on minimizing the opportunities for poor contacts to happen. We propose that minimising these opportunities for poor contact to occur should be achieved using structured training programmes; aimed at improving the quality of interaction that occur between the police and the public with a specific focus on improving customer service skills. This training should be implemented as part of initial officer training but should also form part of any Continued Professional Development (CPD) programme.

Whilst the link between perceptions of procedurally just interactions and improvements in public confidence is very well evidenced (see section 8.4.1.3), the paucity of studies examining exactly how this can be achieved is strange. Excluding the above-discussed work relating to reassurance policing strategies, the only evidence found in the literature comes from the work of Wilson, Boni and Hogg (1997). They used a structured training programme involving “task clarification” to try to instil desirable behaviours related to good customer service into a small sample of police officers and staff. Following the training, a system of feedback and monitoring was implemented to reinforce the lessons learned and assess any changes in behaviour that had occurred. It was shown that the

positive behaviours exhibited by the officers and staff when interacting with the public improved in all cases, and was maintained in all but one of the cohort following the withdrawal of the observer. Although this study used observer-measured indicators of courteous and procedurally just behaviour, rather than public perceptions of the encounters, the positive changes in the attitudes exhibited by the participants suggests that similar training programmes in the NYP could be helpful. Even if the extent of similar training were simply to reduce those behaviours that could lead to negative perceptions of police-public interactions, rather than improving the perceptions of the police stemming from large changes in positive behaviour, due to the possible positive/negative interaction asymmetry, this would be extremely beneficial to NYP.

So which behaviours could be included in the ongoing training for police officers if improvements in public perceptions of interactions is desired? In addition to the work of Wilson et al. (1997), the organisational change model of policing as described by Galloway (1994) gives some examples of the negative behaviours that could be reduced, and the positive “customer service” orientated behaviours that should be encouraged. In addition to these behaviours, we recognise that the interactions between the police and the public do not stop at simple “customer service” based interactions. Many interactions between the police and the public are extremely sensitive; therefore, an assumption that simply being helpful and polite will improve perceptions of police interactions is flawed, we therefore recommend that in addition to basic “customer service” skills, officers should receive regular training in empathetic behaviour and the handling of delicate situations. Table 35, based upon the composition of the PINT factor and the results of the two studies above, shows some negative behaviours that should be discouraged and positive behaviours, which should be encouraged, in any structured training programme designed to improve the perceptions of police-public interactions.

Behaviours to be discouraged	Behaviours to be encouraged
Disparaging language about the public	Treating people like “customers”
Rudeness/Abruptness	Sales techniques
Aggressive behaviours	Sympathy and Empathy
Ambiguity in communication	Offering assistance without being asked
Ending exchanges abruptly	An approachable demeanour
Failing to provide an appropriate greeting	Maintaining eye contact
Being dismissive of concerns expressed by the public	Clear and coherent speech
	Respect for diversity

Table 35 Behaviours to be Discouraged/Encouraged in Police-Public Interactions

Myhill and Bradford (2012) have suggested that improvements in public confidence stemming from interactions between the public and the police are difficult to obtain, but positive, procedurally just encounters with the police in general can assist in improving public confidence. A training programme similar to that described above, may go some way towards improving the interactions between the police and members of the public and assist in improving public confidence through the strong direct and indirect effects that these interactions have been shown to exert on public confidence. Involving the recently established national College of Policing in any such training programme, would ensure that best practice is observed, and any benefits obtained by the North Yorkshire Police can be shared with other forces on both a local and national basis.

10.3.5 Homogeneity of Policing Operations

Williamson et al. (2006) have recommended the profiling of neighbourhoods as an essential strategy for customising police services in order to better meet local needs. By testing the revised structural model of public confidence in York, we showed in section 9.6 how this framework is not completely homogenous throughout the city, and that residents may react differently to certain styles of policing or neighbourhood changes depending on their perceptions of the local area.

We caution that it is not good enough to simply police “York” as a whole; the NYP must consider the individual characteristics of each local area they operate within if public confidence is to be maintained or improved. The results of the framework testing

have shown that this can partly be achieved by focusing activities aimed at improving police-community relations to the areas of the city where residents have poor perceptions of their local areas. This will have more of an impact on improving public confidence than in areas where residents do not perceive there to be many problems.

In addition, in wards in York where local perceptions are generally positive, small changes in the signs of community disorder have a large impact on the perceptions that these residents hold regarding the effectiveness of the police. This means that signs of community disorder in these areas must be quickly dealt with if public perceptions of police effectiveness are to be maintained.

This further highlights the requirement for the police to work in conjunction with other community safety partners to explore the issues that are important to residents at a local, as opposed to a citywide level.

10.3.6 The use of Geographical Information Systems (GIS) Technology

The locationally linked confidence data collected in the study could be used in conjunction with the choropleth (“hot-spot”) mapping that is currently performed by the North Yorkshire Police and Safer York Partnership in order to help achieve some of the above recommendations. This could allow for an even more detailed understanding of the intricacies of public confidence in York. For example, it could be very easily assessed whether there were any associations between the perceptions residents in York have regarding both their local area and the police, and the occurrences of specific crimes happening in an area of the city. Operations to resolve any potential issues could be targeted at a very specific area and therefore make the most effective use of resources in the police operating in York. The use of locational confidence data in this way has already been carried out by the West Yorkshire Police, who discovered a rise in the public confidence felt by residents from the specific areas which were targeted (Rix, Joshua, Maguire et al., 2009). GIS technology would also be of great assistance in adjusting policing strategies dependent on the perceptions of local residents, as discussed in section 10.3.5.

The use of GIS data and technology in this way would allow the NYP to work towards their overall vision on the use of Geographic Information Systems (GIS) as detailed in

Fernandes and Perkins (2010), by improving both the situational, and tactical crime analysis that is currently undertaken within the force, whilst also improving public confidence in policing. According to Williamson et al. (2006), rebuilding reassurance in a neighbourhood is unlikely to occur if the geodemographic characteristics of the area are not taken into account. Therefore, the police in York must utilise GIS technology in combination with the analysis presented above, if they hope to improve the perceptions of York residents.

10.3.7 Influencing the Local Perspective Factors

The recommendations above focus mainly on how to improve the factors in the Police Influenced Factor (PIF) grouping. Whilst these are the factors that have been shown to have the largest effects on public confidence, it was discovered through an examination of the total effects present in the revised structural model that the Intermediary Factor of the fear of crime, and the Local Perspective Factors (LPFs) also played an important role in affecting public confidence. Whilst some form of indirect effect on the LPFs by the police may be possible, and indeed desirable, these factors represent internalised views of respondents that may be very difficult to be altered solely by the police, especially over the short term.

Therefore, the police are reliant on collaborations with other bodies who *may* be able to assist them in changing the perceptions of the public to somehow alter these perspectives, albeit in a minor way given the internalised nature of the factors. In the context of York, these bodies may include the City of York Council, Safer York Partnership and local Neighbourhood Watch schemes. As discussed in section 10.2, these collaborations are becoming increasingly more common within York, and look set to continue over the next few years, due to the introduction of a city council cabinet post with the portfolio of Crime and Stronger Neighbourhoods. In terms of what has already been achieved through these collaborations to improve the LPFs, new noise patrol teams have been formed which could improve residents' perceptions of local area cohesion (LAC), and community payback schemes have been altered in a way that could improve the perceptions of local area problems (LAP).

In terms of changing the views of residents regarding their perceptions of overall safety in their local area, and the worry of specific crimes occurring, this may be more difficult

to achieve. The links between the LPFs and the FOC factor shows that any improvements in the former may result in increases in the latter, therefore the above-mentioned interventions relating to improvements in PDEAL and LAC may lead to improvements in the FOC factor. However, due to the relatively weak effects that perceptions of local area safety, local area problems and the fear of crime have on the dependent variable of PCON in the revised structural model, any interventions hoping to improve public confidence through these factors may not be particularly cost effective. We recognise that the NYP, along with all public sector services, has very limited resources available to fund new operations and initiatives. In order to maximise the use of these resources, we therefore recommend that the NYP work in conjunction with other bodies to focus mainly on those interventions designed to improve public confidence directly through the PIFs, which have shown to have a much stronger direct effect on public confidence.

10.4 Implications for the Performance Measurement and Management of the North Yorkshire Police

This study has approached public confidence from a performance management perspective (Chapter 2); taking the view that, as the most stable performance indicator used in police PMM (see Chapter 3), the accurate measurement and understanding of the drivers behind this ephemeral concept (see Chapter 4) is extremely important, if improvements in public confidence levels are to be achieved.

We now explore the potential implications that this work may have on the performance measurement and performance management policies and practices of the North Yorkshire Police.

The creation of an explanatory framework for public confidence in York, and the policy and practice implications that have resulted from this, should prove highly beneficial to the North Yorkshire Police, as it will allow them to focus their PMM around this extremely important target. Whilst the emphasis on public confidence with regards to national police PMM has been reduced since the election of the Coalition Government, the publication of the Police and Crime Plan for North Yorkshire (Mulligan, 2013a) has

put public confidence back at the heart of PMM in North Yorkshire, along with many other forces⁶⁵. We now consider exactly what the current research means in relation to performance measurement and management, both within the North Yorkshire Police and the wider national context.

Given the multitude of factors that have shown varying degrees of significance in their relative importance to explaining public confidence in York, how can police managers within NYP hope to improve this very ephemeral target? Initiating operations aimed at improving public confidence may not actually lead to increases in confidence. Instead, the more likely scenario is that the individual factors which have been shown to affect public confidence will show an improvement, however the time differences between implementing these operations and any possible alterations to public confidence occurring, may be so long as to make the assessment of the “benefits” of the operation difficult. This is due to the subtle interactions between all the factors involved in public confidence in York (detailed in the revised structural model) in which small changes in one factor can have significant effects on another. This means that even if the NYP were to implement the above recommendations today, any changes as assessed by future studies of confidence in York may not be revealed for a number of years.

Therefore, it is important to understand that despite the recent resurgence in interest of a “target” of improved confidence, whether implied or explicit, caution must be urged in how the NYP and the PCC approach this issue. Any new initiatives started by the NYP (and other safety partners) in an attempt to improve public confidence must be considered long-term investments, not quick fixes or “box-ticking” exercises. Whilst HMIC have now been tasked with a “light-touch” approach to external monitoring, there is a risk that over-enthusiastic PCCs may take a harder line in pressuring forces to show cost-efficient, timely improvements in confidence figures; in order to show voters they have achieved their objectives. The reality is, that given the complex nature of public perceptions of policing services, some initiatives may never actually lead to improvements in confidence, no matter the resources assigned to them (Swindell and

⁶⁵ PCCs of the following areas have stated in their Police and Crime Plans that a key goal is to improve public confidence: Avon and Somerset (Mountstevens, 2013), Northumbria (Baird, 2013), Thames Valley (Stansfeld, 2013), Gwent (Johnston, 2013), Greater Manchester (Lloyd, 2013) West Midlands (Jones, 2013), and Cambridgeshire (Graham, 2013), amongst others.

Kelly, 2000; Kelly and Swindell, 2002; Kelly, 2003). A more pragmatic approach to the measurement and management of any such confidence initiatives would be to state an overall goal for the improvement of public confidence, but avoid the setting of specific targets. More importantly, due to the positive effects of increased communication on satisfaction measures (see section 10.3.3) members of the public should be kept informed about any planned operations, as the simple fact of doing this may result in increases in confidence levels itself.

Whilst high levels of public confidence in the police are important, attempting to increase the public's confidence in the police should not necessarily be viewed as a separate goal of the NYP. Although we have discussed initiatives and operations specifically designed to improve confidence, the revised structural model has shown that this goal can be achieved through small changes in behaviour during normal policing activities. Therefore, it is important to recognise that improving confidence is not something you necessarily set out to do; it is something that occurs because of *what* you do, and *how* you do it.

Any performance management activity carried out in the context of policing (whether a specific PMS, or a more general performance management philosophy), should recognise the multi-faceted role of modern policing as both a reassuring presence to members of the public, and an instrument of the criminal justice system in preventing crime. As the results of this study have indicated that public perceptions of both these policing roles can affect confidence in their own way, whether directly or indirectly, this demonstrates that a holistic view of police PMM in York should be taken. It is not just "hard" targets and indicators that should be used to assess the performance of the police in York, but "softer" targets as well; perhaps including measures assessing community engagement and public assistance, in order to recognise the vital role that these activities play in influencing perceptions of the police in York. Although we have shown that a great deal of significance has been placed in public confidence, it needs to be recognised that it is only one part of the whole picture of performance management. Relying on it, or any other single indicator as a sole proxy for performance in the police can have potentially negative consequences (Fitzgerald, 2010; Pidun and Felden, 2011).

This research has provided a number of potential options for improving confidence, and the PMM activities based around this, in the context of the NYP. However, we have shown in the study how the alteration of some of these factors may not be achievable by the police alone, and that an awareness of the importance of partnership working in the effective control and moral guardianship of the city of York is essential. We predict that as the real-term cuts to police and local government spending continue to bite, the relationship between NYP and its partners will only grow closer due to an increased need for efficiencies across all public sector bodies. How the work carried out in conjunction with these partners will fit in with the PMM structure of NYP remains unclear, nonetheless, the ability to incorporate this into future PMM frameworks should prove invaluable in enabling the NYP to understand exactly where and how their resources are being utilised across the city.

Wholey and Hatry (1992) recognise the potential that effective performance measurement in public institutions has to increase public confidence. Having public confidence in the police as a key component in the force PMM strategy and making sure it is measured appropriately will be vital for the continued success of PMM in the NYP. Ensuring that both confidence targets and initiatives are considered in the long-term will allow for the gradual improvement of public confidence, as well as assisting the police and local communities to form effective ties. The results of the revised structural model indicate that this enhanced engagement between the public and the police could lead to associated increases in public confidence and enable the police to continue operating as the “social glue” within the local areas and communities of York.

10.5 Concluding Remarks

This chapter has examined what the implications of this work are for improving public confidence and police PMM within the North Yorkshire Police. The first section of this chapter has shown the impact that the joint survey has already had on public safety issues in York, including paving the way for a dedicated council Cabinet post for Crime and Community Safety, suggesting improvements in the management of anti-social behaviour within York, and highlighting the need for collaborative working in the city. The second section of this chapter has made a number of recommendations to the NYP in terms of initiatives that could be started to improve public confidence in York. These recommendations are based upon the key driving factors of public confidence shown in

the revised structural model, and include increasing police visibility, improving the communications and interactions between the police and the public, as well as ensuring the current focus on neighbourhood policing is continued. The final section has addressed the possible implications of this work on the performance measurement and management policies of the NYP, focusing on the inherent dangers of setting explicit targets on a factor as complex as public confidence.

In February 2012, the results of the work carried out in the project, along with the policy recommendations discussed above were fed back to the Deputy Chief Constable of North Yorkshire Police; Mr Tim Madgwick. DCC Madgwick, who has been the overall project sponsor, stated that he did not wish the results of the work to go to waste, and was very keen that the practice and policy implications in particular were examined in closer detail by the NYP. He therefore encouraged the author and colleagues at The York Management School to submit a response to the draft Police and Crime Plan⁶⁶, which had recently been published and sent for public consultation by the new Police and Crime Commissioner (PCC) for North Yorkshire: Julia Mulligan. As a result of this consultation, public confidence has been embedded into the heart of the Police and Crime plan for North Yorkshire, and increasing confidence has been established as a key goal for the North Yorkshire Police over the period 2013-2017 (Mulligan, 2013a).

The recommendations and implications set out above for the effective measurement and management of public confidence have been designed as a starting point for the North Yorkshire Police, in conjunction with other community safety bodies, to create initiatives and operations aimed at improving public confidence in York. Ericson and Haggerty (1997) argue that modern policing is moving away from its traditional focus on maintaining law and order and controlling crime, to a role that is more about detecting and managing risk and communicating knowledge of that risk to other institutions in society. As discussed in section 10.3, partnership working should therefore be a priority and sit within any PMM policy of NYP, as this is possibly the

⁶⁶ The creation of a Police and Crime Plan was a statutory requirement for all new PCCs in England and Wales who were elected in November 2012. Its purpose is to set out the policing priorities for each police force in England and Wales in order to create accountability for both the police force in question, and the local PCC.

Chapter 10. Recommendations and Implications

only way that the more subtle, indirect effects on public confidence may be gained; through the alteration of York residents' internalised social and neighbourhood views with the assistance of other community safety bodies within York.

Whilst the recommendations made here have been made with reference to the present location of York, the wider applicability of the recommendations must also be understood. These recommendations have been developed based upon prior research that has examined the impact of implementing specific policies or practices upon a number of the factors explored in the model, with specific relation to public confidence. Although the revised structural model discussed in Chapter 10 may, or may not be exactly applicable to other locations (see section 11.5.1), the recommendations that have been included in this present chapter can be considered as a general "tool-kit" of good practice. Each recommendation detailed above has been developed based upon previous academic research, and is supported by the results of the revised structural model in the present study. These recommendations have the potential to be applied (with a degree of caution) to other police forces, in not only the UK, but also worldwide in the broader context of public sector improvements and customer-oriented practices.

Studies such as this are essential for assessing the needs of local residents, not only in York, but in other communities as well. It is only by seeking the views of local people that community safety bodies can work together to understand where people feel improvement needs to be made in the services provided to them by local agencies. Only with this knowledge can the day-to-day lives of local residents be improved through the application of resources to where they are most required within communities.

CHAPTER 11. CONCLUSIONS

11.1 Introduction

This study has examined the concept of public confidence in York through the lens of performance measurement and performance management. With the development and testing of two Structural Equation Models, we have shown how complex this issue is, and how a holistic view of public confidence (both the drivers, and the stakeholders involved) is essential, if improvements in confidence and PMM are desired.

Viewing the simple structural model independently may lead to conclusions that police managers and the NYP only need to focus on the issues that have been proven to have a direct causal effect on public confidence in York. However, this is not the case, as it over-simplifies the full picture of public confidence. A true understanding of public confidence in York can only be gained by an assessment of both of the structural models of public confidence in York, considered alongside the homogeneity testing carried out on the revised structural model (see section 9.6). Whilst the simple structural model of public confidence showed that only a small number of factors tested have significant direct effects on public confidence in York, the revised structural model revealed that those factors which did not have a direct effect on confidence affect the overall framework of public confidence in a number of different ways. In addition to this, through the testing of the relationships in the proposed framework of public confidence, we show how this framework is not necessarily indicative of every single area in York and that different areas of York may require slightly different approaches to be taken with regards the management of public confidence.

Take, for example, the factor FOC, representing residents' fears of, and worries about, specific crimes occurring in their area. Although no evidence was found linking this factor to public confidence directly (and indeed, no evidence for this link seems to have been found in previous UK studies), police managers still need to be aware of its indirect impacts on public confidence. In this instance, FOC acts as an important link between the perceptions of one's local area and the perceptions of high quality, procedurally just interactions with representatives of the police. In addition, it also exerts an indirect, but significant effect on public confidence. This example illustrates the importance of all of the factors in the overall framework of public confidence in

York, not just those Police Influenced Factors shown to directly affect public confidence.

The remainder of this chapter is structured as follows. Firstly, a summary of all the previous chapters in the thesis is provided in order to give an overview of the work that has been carried out. Secondly, the contributions of this research to knowledge, practice, and methodology are highlighted. We then examine the limitations of this research and the methods that have been used to try to overcome these limitations. Finally, we identify a number of possible future research directions based upon this work.

11.2 Chapter Revisit

Chapter 1 introduces the research by setting out the background to the project, examining why the effective management of public confidence in policing is important, and discussing the problem situation faced by the NYP. The research goal and questions of the project, and an introduction to the methods used to achieve these goals are discussed. The gaps in the literature are identified, and the expected contributions to knowledge, practice, and methodology are examined. The chapter ends with an introduction to the remainder of the thesis by means of a chapter summary.

Chapter 2 outlines the importance of performance measurement and performance management in general. After an examination of why it is important to measure and manage performance, and PMM definitions are provided, we present the results of a literature survey on the PMSs that have been evidenced in police forces both worldwide, and in the UK. The literature survey indicates that in terms of academically rigorous PMSs, only examples of the Balanced Scorecard and Activity Based Costing have been used in UK police forces to support the overall goal of improving performance. We conclude that there is a great potential to improve police PMM by focusing on alternate measures of performance, rather than those considered in traditional PMSs.

Chapter 3 focuses the literature review on the performance measurement and management of the police in England and Wales. A brief overview on how the police forces of England and Wales are structured is given, followed by a discussion on the history and development of police performance management in England and Wales as well as an examination of the specifics of how police PMM is achieved. We note that

Chapter 11. Conclusions

despite the many changes in the PMM policies of the police in recent years, the inclusion of public confidence as part of an overall PMM strategy has been consistent. The recent resurgence in importance of public confidence at a local level provides support for an assessment of the drivers of this factor in York in order to assist in the PMM of the North Yorkshire Police.

Chapter 4 delves into the specifics of public confidence. We assess why this issue is so important to modern policing work, the role it has played in shaping the overall police performance landscape and what is known to affect public confidence. From a literature review of the available evidence, we see that not only would the use of data from the BCS/CSEW to assess public confidence in York be unwise, but also, previous studies assessing public confidence in a similar methodology to ours cannot be fully relied upon to determine accurate drivers of public confidence in our specific context. Based on previous evidence we develop the eight factors of public confidence that are assessed in the structural models of public confidence in York.

Chapter 5 provides the details of the research strategy taken in this study, the particulars of the research design, and the specific research methods that have been selected to explore the data. The justification for the choice of a quantitative research strategy is provided, and the research design, based upon a Structural Equation Modelling (SEM) methodology is discussed. The specific research methods of Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM) are analysed.

Chapter 6 is structured in two sections. The first section discusses the data collection procedure in detail; including the design of the survey measurement instrument, the specific procedures of data collection and issues surrounding data protection and management. The second section explores the preliminary data analysis procedures performed prior to the use of Structural Equation Modelling (SEM) to analyse the factors being explored. This includes both data cleansing processes and statistical examinations of the data to ensure accurate results are obtained in the later stages of analysis. The outcome of this chapter is a dataset that is fully prepared for analysis with the specific methodological tools of analysis.

Chapter 11. Conclusions

Chapter 7 details the processes of Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) used to explore the relationships between the variables in the study, assign these variables to appropriate factors, and then test the relationships between these factors prior to the Structural Modelling component of SEM. The EFA procedures revealed a nine-factor solution to the data, explaining 69.51% of the variance. Whilst the majority of items loaded onto their intended factors, a previously un-conceptualised factor emerged in the dataset. The CFA procedures test the factor groupings that emerged from the EFA analysis. The construct validity of all of these factors is tested, resulting in the rejection of the additional factor suggested in EFA, and the confirmation of an eight-factor measurement model to be carried forward for structural modelling

Chapter 8 presents the development and discussion of the simple structural model of public confidence in York, designed to answer research question one: *“What are the factors that most affect people’s levels of public confidence in the police in York?”* To achieve this, a model is developed where the Public Confidence factor “PCON” is the only endogenous, dependent variable in the model, and all other factors become independent exogenous variables. The results of this model indicate that only the Police Influenced Factors (PIFs) of PCOM, PINT, and PDEAL have direct significant effects on the dependent factor of PCON, and of those factors, PDEAL has the strongest effect. This suggests that if police wish to focus their public confidence initiative efforts on the most efficient factor in terms of possible increases to be gained, they should attempt to alter the perceptions that residents hold regarding how well the police in York are dealing with the problems that matter in York.

Chapter 8 presents the development, discussion, and testing of the revised structural model of public confidence in York, to answer the second research question: *“How do these factors interact with each other to form an explanatory framework of public confidence in York?”*. The results of the simple structural model are used to assist in developing a theory driven framework of public confidence, which enables a more holistic understanding of public confidence to be gained by examining all of the relationships between the various factors explored in the study. This allows us to assess not only the direct effects that the PIFs exert on PCON, but also the indirect and total effects that all of the factors exert as well. The results of this indicate not only a new

Chapter 11. Conclusions

order of importance in terms of the factors that have the largest effect on public confidence, but also that all of the factors tested in the model do have significant (if minor) effects on public confidence. The testing of the confidence framework revealed that even within a small, relatively homogenous city such as York, differences in the relationships between factors in the model do exist, depending on the perceptions held by the residents of an area. This not only answers research question three: “*Is the framework of public confidence homogenous throughout York?*”, but also serves to highlight the importance of adapting policing operations depending on the type of area the NYP are operating within in order to make the most efficient use of resources when carrying out initiatives designed to improve public confidence.

Chapter 10 examines the implications of this work in order to answer research question four: “*How can public confidence in the police in York be improved?*”. It shows the existing impact of the wider research on community safety bodies in York, provides recommendations of possible initiatives the North Yorkshire Police could implement if they are interested in improving levels of public confidence in York, and examines the possible implications the research has for the performance measurement and performance management policies of the NYP. We conclude that effective partnership working is essential if the NYP are to maximise the efficiency of both their confidence initiatives, and their PMM policies.

11.3 Research Contributions

Throughout this thesis, we have highlighted a number of contributions that have been made, both major and minor, to knowledge, practice, and methodology. These research contributions are summarised below.

11.3.1 Contributions to Knowledge and Academic Debate

According to Jackson and Bradford (2009), “*there is a pressing need to systematically assess what drives public confidence in policing*” (p. 599) which has still not been fully assessed in the public confidence literature. Whilst a large number of factors have been previously evidenced as having an effect on public confidence (see Table 10), studies modelling the simultaneous effects of these factors on public confidence are limited to those six examined in section 4.4. Of these studies, two use data from countries outside

the UK, (Hinds and Murphy, 2007; Dukes et al., 2009) one uses aggregate data from a national survey (Jackson and Bradford, 2009), three use data from major metropolitan centres (Jackson and Bradford, 2009; Jackson et al., 2009; Jackson and Bradford, 2010) and one uses data from a rural location (Jackson and Sunshine, 2007). None of these studies have examined public confidence in a UK city with characteristics similar to York. We therefore offer our first major contribution to the literature by filling this research gap and examining the drivers of public confidence in the urban area of York. We enhance this contribution by developing a public confidence framework that provides a holistic understanding of the nature of public confidence in York and allows the total effects of any factor on public confidence to be tested. The assessment of total effects in our model allows us to see that the importance of the drivers of public confidence in an SEM study stretches beyond what is shown simply by an examination of the direct effects and highlights the subtleties present in determining the drivers of factor as complex as public confidence. In addition, by testing the proposed framework to see whether it is stable across the city, we show how even in a relatively homogenous area such as York, differences in how public confidence operates can still be found. Through fulfilling this research gap, we reveal a number of contributions to the academic debate surrounding public confidence.

11.3.1.1 Simple Structural Model contributions

The first contribution to knowledge is revealed in the results of the simple structural model. Because all of the factors chosen for inclusion in the models were previously shown to have an effect on public confidence (see Table 10), we expected these effects to be revealed in the simple structural model. Instead, we found that it was only the Police Influenced Factors of PDEAL, PCOM, and PINT that had statistically significant direct effects on confidence, with the regression estimates of the other factors on PCON failing to reach significance. These results directly contradict previous studies on public confidence and therefore suggest that in smaller urban areas such as York, only the perceptions residents hold about various aspects of the police directly shape confidence, and not their perceptions of their local areas, or the worry they have regarding crime.

11.3.1.2 Revised Structural Model contributions

The second contribution to knowledge comes from the results of the revised structural model. The model reveals how all of the factors assessed in the model interact with each other, and shows the overall “flow” of public confidence within York. This flow is summarised in section 9.4 and reveals that although only the factors in the PIFs factor grouping directly influence public confidence, all of the other factors assessed have an indirect influence on confidence, through the influences they all have on each other. The revised structural model reveals what is essentially a modified version of an expressive model of public confidence. Whilst the model supports previous evidence that local area perceptions affect one’s overall fear of crime (Jackson, 2004; Jackson and Sunshine, 2007), the supposed direct relationship between these perceptions and overall public confidence could not be proven. Instead, we find that the main roles played by the Local Perspective Factors of LAP, LASAFE and LAC in the revised structural model is to affect the general perceptions of the police; in terms of their perceived effectiveness and levels of police-community engagement as shown in Jackson (2007; 2009). It is these general perceptions of the police, along with the quality of the police-public interactions that directly affect public confidence of the police in York, supplemented by the smaller, indirect effects on confidence being shown by the other factors in the model.

11.3.1.3 Framework testing contributions

The third contribution to knowledge emerges from the testing of the revised structural model of public confidence for homogeneity across York. Specifically, we offer a contribution to knowledge by showing how individual perceptions of a local area seem to affect certain relationships in the revised structural model, therefore suggesting that the police should customise their services in order to best meet local needs as recommended by Williamson et al. (2006). In addition, we partly address the literature gap identified by Hawdon (2008) by showing how the police in York can adapt their policing styles depending on the type of area they are operating in and that community style policing does not have as much impact in the Highly Perceived Wards of York as it does in the Poorly Perceived Wards. By showing how the revised structural model of public confidence in York is not completely homogenous throughout the city, we see how residents in different types of wards may react differently to certain styles of policing or neighbourhood changes. This provides a contribution to knowledge by

showing that even a model of public confidence developed in a homogenous urban area such as York can still not be applied indiscriminately if increases in confidence are desired.

11.3.1.4 Other Contributions

Whilst this overall understanding of public confidence in York was the primary focus of the research, a number of other contributions to theory and academic debate revealed themselves in the course of the analysis.

No evidence was found to support the hypothesis that an asymmetry exists between police initiated contact versus public initiated contact in the perceptions of police interactions (see section 8.4.1.3). However, whilst the asymmetry in confidence between negative/positive interactions could not be directly tested for, the results of both models suggest that that it is possible for the police in York to actually improve public confidence through good quality interactions, rather than just preventing a decline. This is shown through the fact that the relationship between PINT and PCON was both positive and significant, even though the PINT sample consists mainly of positive interactions between the public and the police.

We also identified two new research gaps in the literature of public confidence, which could provide scope for further work in the area of public confidence. The first of these is the relationship between perceptions of police engagement with the community (PCOM) and perceptions of police effectiveness of dealing with the crimes that matter in York (PDEAL). Although this link was shown to be very strong in the revised structural model, and is both theoretically and empirically supported, no previous studies have assessed this relationship before (see section 9.4.3.1). The second gap identified relates to improving the interactions between the police and the public. Whilst only two examples of studies dealing with this could be found in the literature (Galloway, 1994; Wilson et al., 1997), the results of the simple structural model and the revised structural model indicate that improving this factor could potentially lead to significant increases in public confidence, or at least prevent declines in confidence during public-police interactions. We therefore recommend that further work be carried out to test the best methods of improving the manner in which police staff and officers

engage with the public in their day-to-day duties, as knowing this could have significant benefits to forces wishing to improve the public's perceptions in them.

11.3.2 Contributions to Practice and Policy

Chapter 10 analyses in detail the contributions that this research has made to both practice and policy. These contributions revolve around how the NYP can utilise the results of this study to inform future work on improving public confidence, as well as their PMM policies. The recommendations designed to improve public confidence in York are as follows:

- Increase the visibility of police patrols within York;
- Ensure a focus is maintained on reassurance, neighbourhood and community based policing ;
- Improve the communications between the NYP and the public;
- Improve the interactions between the public and the police through continuous training;
- Consider the individual characteristics of each local area in York and adjust policing tactics accordingly;
- Further develop the existing collaborations with community safety bodies in York.

Concerning the PMM policies within NYP, we caution that even though an implementation of these recommendations could lead to eventual increases in public confidence, this is not guaranteed. Therefore, we recommend that despite the recent resurgence in confidence as a local “target”, any initiatives designed to improve this figure in the public must be viewed as a long-term investment, both by the police and the PCC. Even if no new public confidence initiatives are started in York, we show how attempting to increase public confidence should not necessarily be viewed as a separate goal of the NYP, as the results of the revised structural model indicate that significant changes in confidence can emerge from small changes in behaviour during normal policing activities.

Despite the considerable body of empirical evidence available relating to how police forces can improve public confidence, changes to policy and practice within the police service, informed by academic debate have been slow to emerge (Stanko et al., 2012). It is hoped that the renewed focus on public confidence in policing at a local level will provide the impetus for NYP, and other police forces to consider a more evidence-based approach to policing. This will help enable the practice and policy recommendations of this research to be converted into actual initiatives and operations designed to improve public confidence in the police in York, and further afield.

Given that differences in the drivers of public confidence have been found in York in comparison to empirical research in other contexts, this research will also provide valuable evidence to support the development of new, evidence-based policing initiatives aimed at assessing and improving public confidence in the police both throughout the U.K, and further afield.

11.3.3 Methodological Contributions

In addition to the contributions to theory and practice, a number of methodological contributions have been made by this study, which are outlined below.

11.3.3.1 Multi-item measure of public confidence

As discussed in section 4.5.1, this study used a multi-item factor “PCON” in order to assess public confidence. By including measures of perceived police reliability in the factor construction, we give a more balanced view of public confidence by taking into account its multifaceted nature, rather than relying on a single “overall” indicator of confidence as has been used in the past examinations of confidence. In using more than three items for every factor in the model, we also avoid technical issues of under-identification of the factors and the measurement model during SEM (Hair et al., 2010). Our contribution to methodology is therefore the use of a fully identified latent factor structural model, which, due to its ability to examine a broad range of items per factor, means that a more holistic and realistic assessment of public confidence can be performed in comparison to a structural model using under identified factors.

11.3.3.2 The relationship between the fear of crime and public confidence

The relationship between the fear of crime and public confidence has historically been examined in studies assessing public perceptions of the police. However, there is an increasingly growing body of literature suggesting that the fear of crime has no direct effect on public confidence (Bennett, 1994; Cao et al., 1996; Jackson et al., 2009; Myhill and Bradford, 2012; Sindall et al., 2012), and authors have urged for its removal in studies of public perceptions of the police (Stanko and Bradford, 2009). Whilst the results of the simple structural model show that the fear of crime does not have a direct impact on public confidence, the revised structural model shows how an individual's fear of crime shapes their interactions with the police. Given this important link (and the indirect effect that FOC has on the PCON factor), we caution against its removal as a factor for examination in future studies of public confidence, as the removal of any factor in a multivariate study will inherently make any model less complex, and therefore less applicable to the situation being studied. As public confidence has been shown to be a complex, multi-faceted concept, we recommend that researchers studying the drivers of confidence should use as many theoretically based factors as methodologically possible in order to avoid the over-simplification of this complex concept.

11.3.3.3 Identification of the vagueness of terms used

An examination of the literature dealing with perceptions of crime and safety (see section 8.4.2.3) revealed an important issue to note in terms of the vagueness of the definitions used in public confidence studies. Because the analysis of the revised structural model showed that the two factors assessing resident's perceptions of local area safety (LASAFE) and the worry about specific crimes occurring (FOC) are distinct factors in their own right, they should not be used interchangeably in the literature. We therefore encourage researchers to be especially clear in the composition of their items when evaluating either of these factors in future studies of public confidence, and to consider their joint inclusion, based upon the evidence provided in the revised structural model showing that they both have statistically significant effects on confidence.

11.3.3.4 The utilisation of indirect and total effects

The examination of the indirect effects and total effects of the independent factors on PCON in the revised structural model revealed some subtleties in the data, which would have gone unnoticed with a standard examination of the direct effects in a model. As discussed in section 9.2.2.1, the assessment of these indirect effects in studies evaluating public perceptions of the police is limited to Baker et al. (1982) and Jackson and Bradford (2009). This study, therefore, provides a further methodological contribution by clearly demonstrating how a thorough examination of the total effects occurring in a model of public confidence is necessary, in order to identify the key factors of importance in a model of public confidence. We have evidenced that it is not good enough to simply discuss the direct effects present in an SEM model of public confidence, and that the possible indirect and total effects of every factor must be considered if a clear, holistic picture of public confidence is to be achieved.

11.4 Limitations of Research

Whilst this study was designed to provide a methodologically sound assessment of the public confidence in the police held by York residents, and the data was weighted to be representative of the overall demographic make-up of York, there are certain limitations that must be considered when interpreting both the research findings and providing recommendations to the NYP.

11.4.1 Potential Sample bias

The first limitation emerges from the potential bias of the survey sample. A convenience sample in the form of the Operation Spoke electronic mailing list was used to achieve the greatest number of respondents for the survey. The Operation Spoke mailing list is maintained by Safer York Partnership and is sent on an approximately quarterly basis to 9000 residents, or former residents of York who had previously agreed to receive information from the police following their bicycle being security tagged.

As these residents have agreed to receive information from the NYP, this could suggest some *a priori* bias concerning confidence in the police. It could be argued that firstly, people who have agreed to allow the police to tag their bicycles have some level of inherent confidence in the police that is enough to make them approach the police for

assistance in bicycle security. Secondly, of those people who had their bicycle tagged, the sub-set who have agreed to post-tagging contact (and therefore received invitations to this survey) have done so because they are confident that the police will not misuse the data entrusted to them. Conversely, it could simply be that of the first group, the benefits of having their bicycles tagged outweighs any pre-existing confidence and trust issues, and of the second group there is a certain level of apathy with regards to their personal information.

However, the wide distribution of the survey around York (shown by the number of respondents who completed the survey through links unrelated to Operations Spoke) goes some way to negating this effect. In addition, the incentives offered to respondents for completing the survey, should ensure that an acceptable balance of respondents was obtained, and that people did not simply complete the survey because they felt the need to express strong feelings in one direction or the other about the police in York. Due to the planned use of SEM to analyse the data (which required a minimum number of 1000 responses in order to perform certain analyses), it was felt that the possible negative effects of the use of this convenience sample were far outweighed by the opportunity to reach a wide number of York residents. Common method bias was also tested for during CFA (see section 7.3.8), and no example of bias was found, suggesting that the use of a convenience sample was justified in this case.

11.4.2 Cross-Sectional Nature of the Survey and SEM Causality

A second limitation of this work is common to all similar studies and deals with the issue of temporal ordering and causality. As opposed to panel data⁶⁷, which is considered to be a robust method for assessing public confidence (Myhill and Bradford, 2012), the data collected in this survey was cross sectional, leaving question marks around the exact direction of the interactions that have been shown in the revised structural model. Because SEM data using cross-sectional surveys cannot allow us to “prove” whether one factor causes another, we must rely on both logical assumptions, and previous evidence in the literature to support the causal ordering (the direction of

⁶⁷ Where an individual is interviewed at two separate points in time therefore allowing for pre-existing attitudes to be taken into account

these links) of the model. This becomes increasingly important in the use of highly correlated data in an SEM model, as regression arrows may reveal the presence of significant path estimates in both directions between two factors.

This raises another issue, that of causality inferences within SEM. Throughout the thesis we have inferred that two factors linked by a unidirectional arrow means that an increase in the independent factor will lead to a change in the dependent factor. Given the cross-sectional, non-experimental nature of the data, this statement is difficult to prove, and we must be careful in making claims of causation based solely upon the relationships present in the data (Pearl, 2000, 2010). However, as all of the paths estimated in the model are supported by previous evidence in the literature, our ability to make approximations to causal inferences is improved somewhat (Shah and Goldstein, 2006). Given the post-hoc nature of the model fitting, and the novelty of this study (see section 11.3.1), we offer a note of caution to the over-generalisability of the findings here, and recommend that future work be carried out testing the model in other similar locations to see whether these causal inferences still hold true.

11.4.3 Unexplored Factors

Whilst this study examined a wide variety of factors, it was not possible in a cross-sectional survey such as this to assess the full range of factors that have been shown in the literature to affect public confidence (see section 4.6.1). Specifically, two possible antecedents of public confidence were omitted from the study. The first factor is the role of the media on public confidence. Whilst some studies have shown a small impact on public confidence stemming from this factor, (Weitzer, 2002; Miller et al., 2004; Jackson et al., 2013), assessing this factor effectively with the current methodology would have required a significant increase in survey length. As the possible effects of this factor on public confidence have previously been shown to be relatively minor when compared with other factors, the risk of increasing the participant dropout rate was judged too great when measured against the potential benefits of exploring this factor.

The second factor omitted was the effects of improved police-public mass communication on public confidence. This study explored the impact of the factor “PDEAL” on public confidence and found that this, along with the other Police

Chapter 11. Conclusions

Influenced Factors (PIFs) had a significant effect on public confidence. A key recommendation made to the NYP (see section 9.6) has focused on aiming to improve York residents' perceptions around policing issues through a structured program of enhancing communication. Whilst previous research has shown that improved communication from the police can help to improve perceptions of the police (Hinds and Murphy, 2007; Wünsch and Hohl, 2009; Hohl et al., 2010), this has only been clearly demonstrated in London (Wünsch and Hohl, 2009; Hohl et al., 2010). In order to build on the current work, a longitudinal study could be performed in York in order to examine the impact of the suggested interventions on improving residents' perceptions of the police.

Whilst the present study has taken a holistic view in its assessment of public confidence, future studies in York, or other similar urban areas should aim to address as wide a number of factors as possible through a combination of cross-sectional and longitudinal data. By doing this, the research gaps that still exist in the literature surrounding public confidence in smaller urban areas can be more effectively addressed, as can the issues relating to causality discussed above.

11.4.4 Fluidity of Public Confidence Terms

A further limitation of this research, and indeed all research investigating public confidence, is the lack of consistency in the measures used to assess both the independent drivers of public confidence (see section 11.3.3.3) and the composition of public confidence factors themselves. Therefore, comparability between studies assessing public confidence is difficult, as the items chosen to make up a specific factor in one study are often very different to that in another. (cf. Stanko and Bradford (2009); Hohl et al. (2010) for examples of this)

This is also shown in Jackson and Sunshine (2007) where public confidence was assessed by examining the effects of social cohesion on the satisfaction with police effectiveness in cutting crime (the equivalent of PDEAL in the present study) and the satisfaction with police engagement with the local community (the equivalent of PCOM in the present study). Similar inconsistencies can also be seen with the scales used for other factors under investigation in multivariate analyses of public confidence. For

example, that which one author labels as “Police Effectiveness” may contain the same, or very similar items to a factor labelled “Police Performance” or “Police Response”⁶⁸.

However, a key difference in this study is the use of a multi-faceted concept of public confidence, which consisted of six items in the survey examining a broader definition of the term “public confidence” than that which can be measured by the use of a single item alone. Care therefore needs to be taken in the direct comparison of public confidence studies as what one author refers to as “public confidence” may not be the same as what is referred to by another. We recommend that the authors of future studies examining public confidence be clear about the terms that they are using to avoid confusion and possible misrepresentation of results.

11.5 Future Research Directions

Both the analysis of the data, and an evaluation of the limitations of the research, have provided potential avenues for the future direction of research into public confidence in smaller urban areas, as well as possible extensions to the present work. These are examined below.

11.5.1 Inclusion/Exclusion of Factors

Whilst the omission of the factors described in section 11.4.3 is identified as a limitation of the research, future work examining these factors could improve our current understanding of the nature of public confidence in smaller urban areas. Unfortunately, these limitations will inevitably occur in every study of public confidence as it impractical, if not impossible to examine the possible effects of every factor that has previously been shown to have an effect on public attitudes towards the police in a single study. As the focus of this study was to assess factors of confidence that could potentially be influenced by the police or other community safety bodies in York, and provide results that were representative of the city, demographic factors such as age, gender and race were not included in the models. An extension of this work would therefore involve re-specification of the models to include the wide variety of

⁶⁸ These inconsistencies in scale development can be seen in Murphy (2009), Dukes et al. (2009), and Stanko and Bradford (2009) amongst others.

demographic information that was collected during the survey in order to test previous assertions as to whether these factors have significant effects on confidence.

Alternatively, a further area of research may involve the removal of a factor from the model. The PINT factor assess the perceptions of the public's past encounters with the police and has been proven in both the simple structural model and the revised structural model to be an extremely important driver in explaining public confidence in York. However, if we were to remove this factor, and re-specify the models, this may reveal a new explanation of the drivers of public confidence in York when members of the public have not previously had any contact at all with the police.

11.5.1 Utilisation of Other Data Sources

In section 10.3.6, we recommended that the NYP utilise GIS technologies in order to carry out the recommendations that we have provided. The locational data that we collected in the survey as part of the demographic information could be utilised to assist in achieving this. There is significant scope for extending this work by combining the present data set with other data held by the NYP in order to provide a more detailed understanding of public confidence in the city. For example, the public confidence data could be overlaid on a map of York, and combined with police-recorded crime information. This would show whether there were potential links in York between crime levels in an area and public confidence, and could also suggest where in York police may wish to use as a starting point for starting any of the initiatives designed at improving confidence described in section 10.3.

As well as the locational data, one under-explored question in the survey asks residents "*What, if anything, could the police in York do to improve your confidence in them?*". 473 responses were obtained with this question, and this data has been used to shape the recommendations made to the police regarding police visibility. However, in order to make full use of this rich data source, these responses would need re-coding and analysing qualitatively. This would allow for an interesting comparison between what the quantitative data has shown has the biggest impact on public confidence in the police, and what the public themselves think would improve their confidence the most.

11.5.2 Wider Applicability of the Revised Structural Model

Because of the paucity of public confidence studies carried out in smaller urban areas (see section 1.7.1), an understanding of the wider applicability of the results of the study is made difficult. The results of the revised structural model support a number of previously established theoretical relationships between the model factors (see section 9.4), and the overall discovery of an “expressive” based view of public confidence is comparable to previous UK based studies of public confidence (cf. Jackson and Sunshine, 2007; Jackson and Bradford, 2009; Jackson et al. 2009). However, the failure of the model to exactly replicate some direct relationships in the data (for example, the well-supported relationship between LAC and PCON) suggests that there may be some idiosyncrasies in either the specific sample of York or the construction of the factors used in the model which could limit the wider applicability of the model.

With regards to the sample of York, this research has provided a contribution to the literature by examining public confidence in an environment in which this concept has not previously being examined. The relatively small city population of 198,000 residents, its unique socio-demographic makeup, and the low overall crime levels in North Yorkshire may all contribute in making the unitary authority of York a unique location in which to study the concept of public confidence. Whilst these factors add value to the study due to the uniqueness of the specific location, it must be recognised that all areas have their own unique characteristics. Because of this, no study on public confidence can truly be considered wholly applicable to any area other than where the sample was initially drawn from. As discussed in section 10.5, the results and the recommendations given in this study provide a general model of good practice with regards to effectively managing public confidence within the police; it is only through testing the model in other locations that we can be sure that the relationships found within this study are applicable in other areas.

Aside from the issue of location, the exact composition of the factors used in the model⁶⁹ may limit the wider applicability of the results somewhat; given that previous studies have previously used single indicator items to measure confidence (Hinds and

⁶⁹ particularly, the fully identified latent factor PCON with its focus on police reliability

Murphy, 2007; Jackson and Bradford, 2009) or have used surrogate measures; not specifying “public confidence” as a term in its own right (Dukes, 2009; Jackson and Sunshine, 2007).

Despite these minor issues, the results of the models developed in this study have revealed some interesting information as to the drivers of public confidence in York. In order to see whether the model we have proposed is unique to York, or is more widely applicable, either to other areas with similar characteristics in the UK, or completely disparate locations, an extension of this work would be to test the models both against data collected from other similar urban areas, and from national data. As the survey was developed using past questions from the British Crime Survey and other public attitude surveys as a starting point (see section 6.2.2.2), the model could potentially be adapted to fit existing data sets. Whilst an adapted version of the model would not allow for direct comparability with the original, it would at least give an idea as to the potential applicability of the models in other areas and provide a “proof of concept” to suggest where additional work might best be carried out.

11.6 What Next for the Role of Public Confidence in Police PMM?

Regarding the role of public confidence in police PMM in general, this study has shown it to be an important issue that the police must take into account in their operations and internal planning. However, we disagree with previous policies of it being the only way that forces are formally assessed, or not being used to assess forces at all. Instead, section 10.4 has demonstrated how public confidence should be part of an overall PMM strategy that takes a broader view on the factors important to the overall performance of forces, rather than a PMM view that is overly focused on performance indicators and achieving specific targets.

As opposed to the sole use of quantitative PMM targets, Fielding and Innes (2006) have recommended that a more qualitative approach to police PMM is taken. In this context, a qualitative approach means an approach to PMM by forces that is less focused solely on numeric targets, but instead allows police officers to carry out the day-to-day community activities that cannot be quantified, but may result in highly beneficial improvements in public perceptions. They use the example of a car mechanic working

in a backstreet repair business who provides some informal information leading to disruption of a network of youths who are selling drugs. They argue that the benefits gained in terms of an increased sense of police-community engagement and new information sources, despite the lack of any formal targets being achieved, shows the problems inherent in the general system of police PMM. Whilst we caution that there must be certain elements of quantifiable behaviours measured in the police as a whole, this example highlights the particular nature of policing as being a public service where strict adherence to targets and a draconian approach to performance measurement is not always appropriate.

Because trust and confidence in the police has been proven to have clear links to improving behaviours in the public that would assist officers in carrying out their own jobs (see section 4.2), the opportunity to improve public confidence through relatively minor changes in police operations or behaviour should instead be welcomed by the police. However, given the sceptical nature of police culture, coupled with the inherent resistance to change shown by officers (Wisniewski and Dickson, 2001; Wood, Fleming and Marks, 2008; Jackson et al., 2013), it is understood that compliance to any such changes may be low, unless managers and decision makers can convince front-line officers that this would be beneficial to them. Compliance is unlikely to be gained from the use of top-down performance management instruments, but should instead be achieved through structured training programmes designed to teach officers the benefits of improved public perceptions.

Improving public confidence should not be seen by the police as a box ticking exercise, begrudgingly carried out simply to comply with targets or the requirements of police PMSs. Instead, the importance of public confidence needs to be embedded in policing culture if the police wish to retain the public perceptions of them as the legitimate guardians of modern society and secure their ability to maintain order in the UK.

APPENDIX A: PREVIOUS SEM MODELS OF PUBLIC CONFIDENCE

Dukes and Portillos (2009)

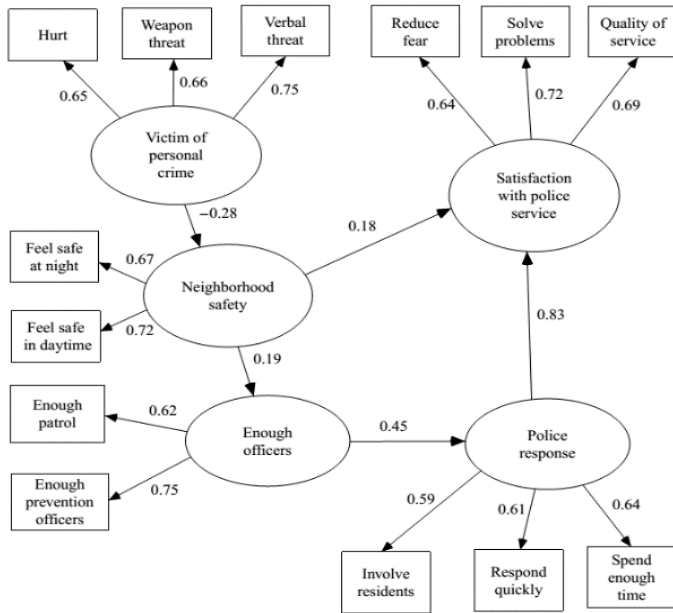


Figure 14 Dukes and Portillos (2009) Model 1. Source: *ibid.* p. 307

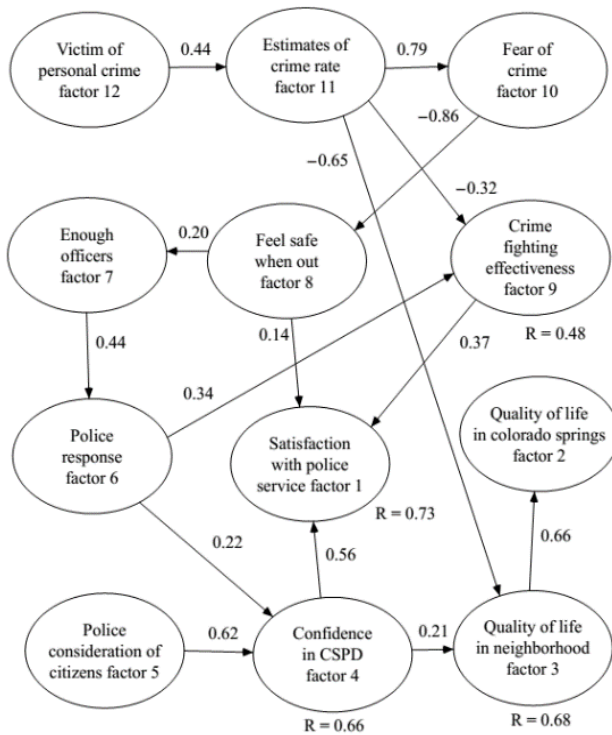


Figure 15 Dukes and Portillos (2009) Model 2. Source: *ibid.* p. 309

Hinds and Murphy (2007)

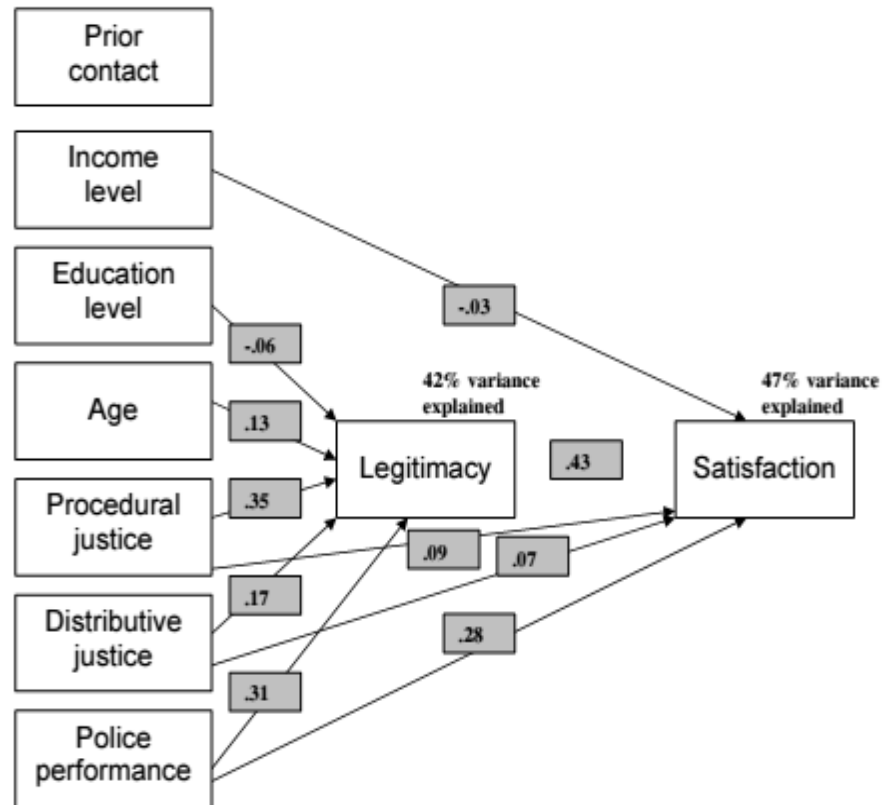


Figure 16 Hinds and Murphy (2007) Structural Model. Source: *ibid.* p. 34

Jackson and Sunshine (2007)

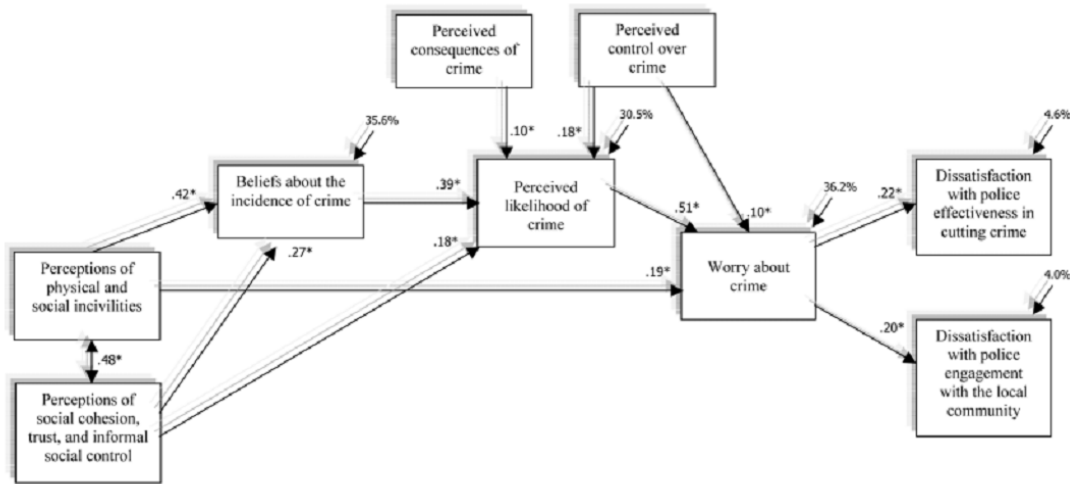


Figure 17 Jackson and Sunshine (2007) Model 1. Source: *ibid.* p. 225

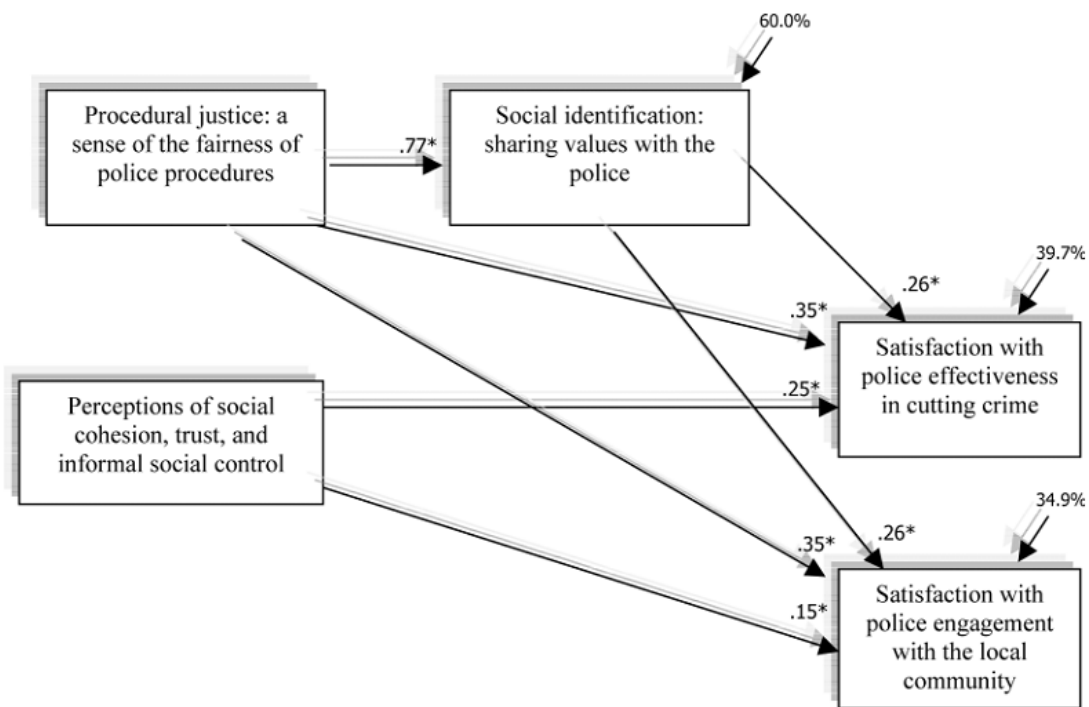


Figure 18 Jackson and Sunshine (2007) Model 2. Source: *ibid.* p. 227

Jackson and Bradford (2009)

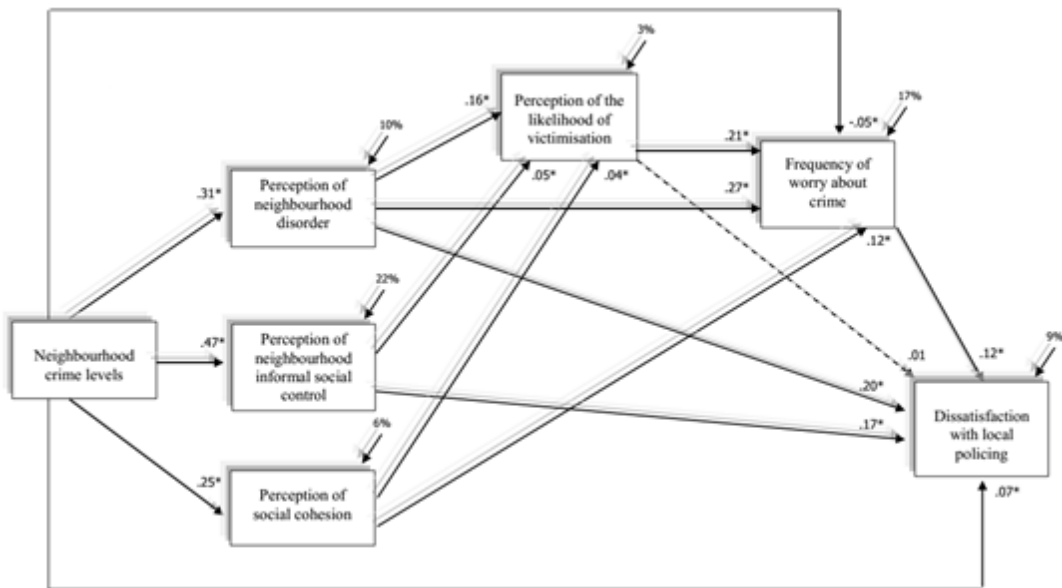


Figure 19 Jackson and Bradford (2009) Model 1. Source: *ibid.* p. 504

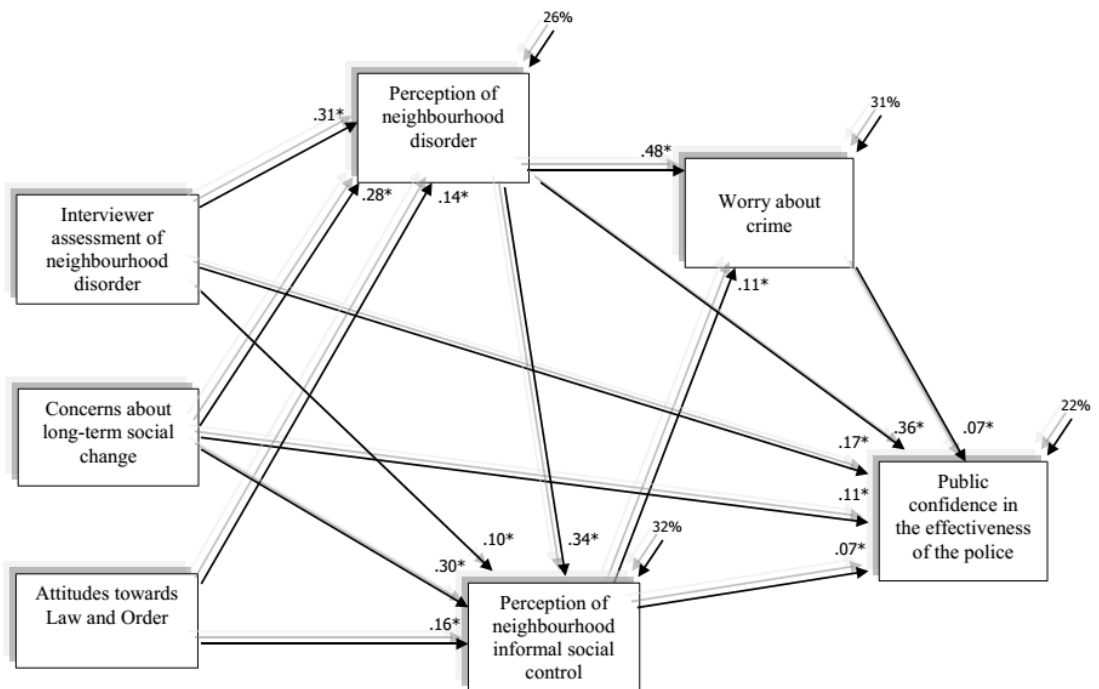


Figure 20 Jackson and Bradford (2009) Model 2. Source: *ibid.* p. 506

Appendices

Jackson et al. (2009)

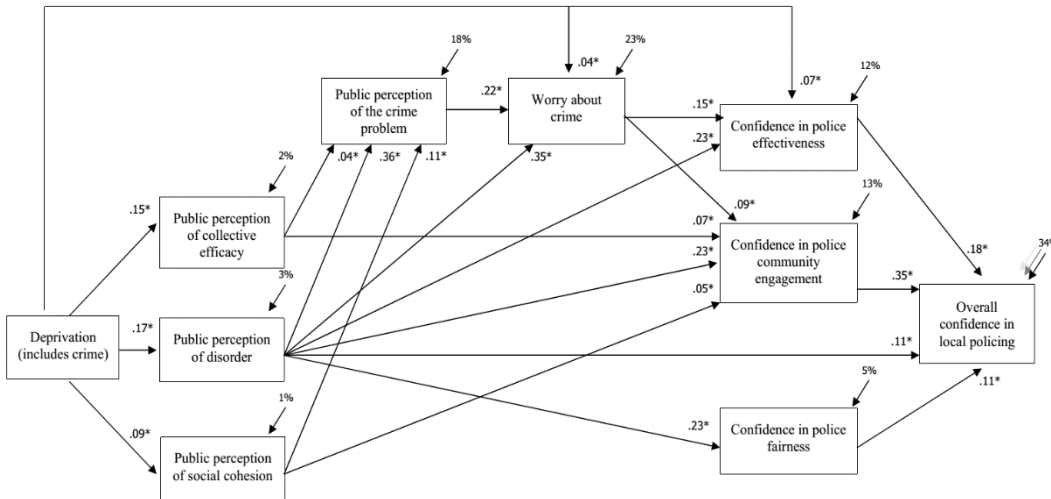


Figure 21 Jackson et al. (2009) Structural Model. Source: *ibid.* p. 1762

Jackson and Bradford (2010)

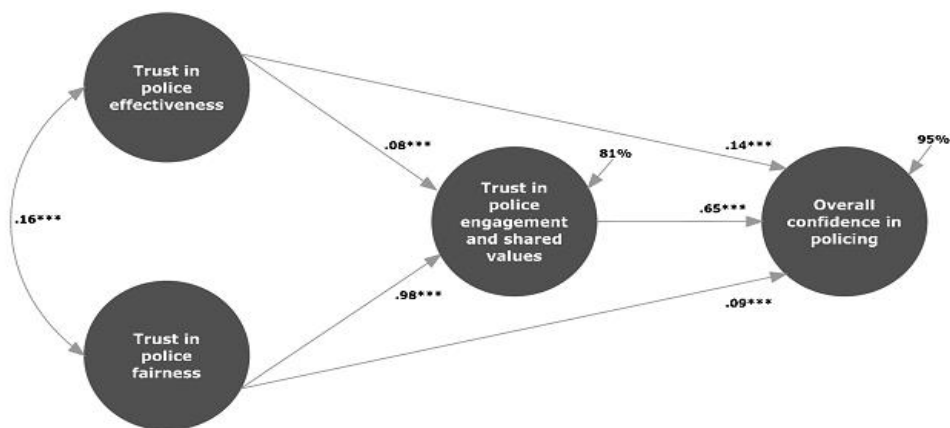


Figure 22 Jackson and Bradford (2010) Structural Model. Source: *ibid.* p. 246

APPENDIX B: COPY OF SURVEY

1. Introduction and Privacy Statement

Thank you for agreeing to take part in this survey which should take approximately 7 minutes to complete. The study can be completed by anyone who currently lives in York, or who has lived in York within the last 12 months.

Privacy Statement

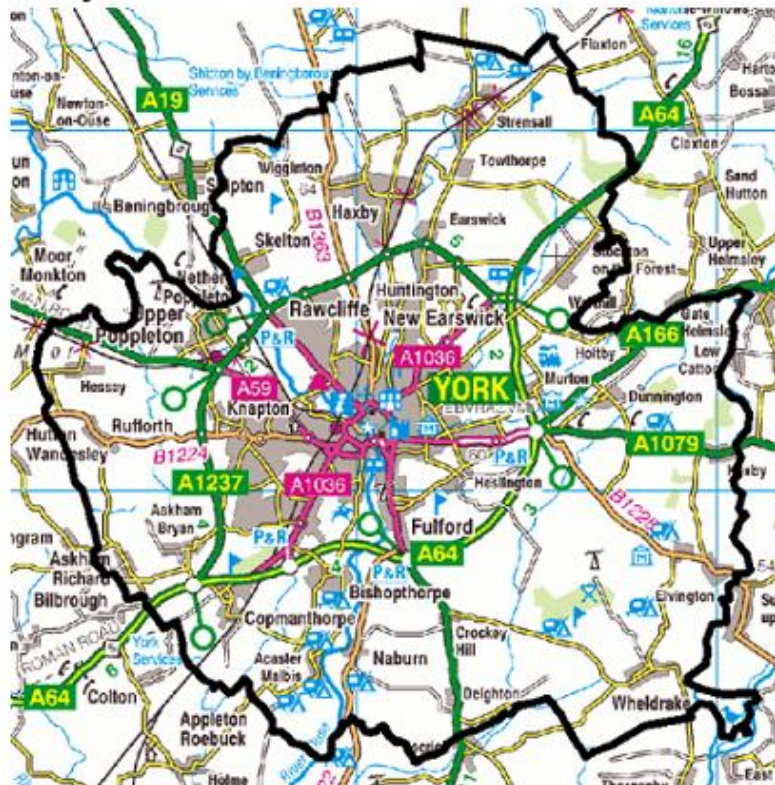
This study examines people's attitudes towards the police of York and is carried out jointly by the University of York, North Yorkshire Police, Safer York Partnership and the City of York Council with the eventual aim of improving the services provided to the residents of York by these partnership organisations. All of the information collected is confidential and **will not** be used to personally identify you.

The anonymised data collected from this research will be held securely by the University of York and may be shared with the partnership organisations and other research institutions for future analysis.

If you choose to enter your email address or telephone number in order to win one of two £50 Amazon vouchers, this information will be processed separately to the survey results and will be destroyed once the prize draw has taken place. This research is in compliance with the University of York's Data Protection policy. If you would like any further information on this study, the researcher can answer any of your questions you may have.

By completing this survey, you are agreeing to the data you provide being used as shown in the Privacy Statement above.

In this survey, "York" is the area ringed in black on the map below. If you live within these boundaries now, or have done in the last 12 months, you can complete the survey.



Appendices

1. Are you?...

A current York resident

A recent York resident

2. If you do not live in York at the moment but live in the UK, please write the first half of your postcode (eg. YO10) below. If you live in a country other than the UK, please write the town/city and the country in the boxes below.

First half of postcode (UK only)

Town/City (International only)

Country (International only)

2. Your local area

Throughout the survey we ask you to think of "your local area". When answering, please consider your local area to be the area within 5-10 minutes walking distance of your home.

If you are a recent resident of York, please complete the survey by thinking back to when you lived in York, and answer the questions as if you were still living in your local area in York.

1. On a scale of 1 to 5, where 1 is "Not a problem at all", and 5 is a "Very big problem", how much of a problem do you think each of the following are in your local area?

	1. Not a problem at all	2.	3.	4.	5. Very big problem
Rubbish or litter lying around	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hate crime (Crimes against people because of their religion, sexual orientation etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Noisy Neighbours or loud parties	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People using or dealing drugs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anti-Social Behaviour	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People being drunk or rowdy in public places	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People hanging around on the streets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Abandoned or burnt out cars	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vandalism, Graffiti and other deliberate damage to property or vehicles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendices

2. How strongly do you agree with the following statements?

	Strongly Agree	Tend to Agree	Neither Agree nor Disagree	Tend to Disagree	Strongly Disagree
My local area is a close, tight-knit community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I could rely on other people in my local area to help me if I was in danger	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People in my local area share the same values	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People in my local area treat each other with respect and consideration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People in my local area are willing to help their neighbours	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. Overall, how satisfied or dissatisfied are you with your local area as a place to live?

Very Satisfied
 Fairly Satisfied
 Neither Satisfied nor Dissatisfied
 Fairly Dissatisfied
 Very Dissatisfied

4. How safe would you feel in the following situations?

	Very Safe	Fairly Safe	Neither Safe, nor Unsafe	Fairly Unsafe	Very Unsafe
Walking alone in your local area during the day	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Walking alone in your local area after dark	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being at home alone during the day	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being at home alone after dark	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. On a scale of 1 to 5 where 1 is "Not at all worried", and 5 is "Very worried", how worried are you about the following crimes happening to you in your local area?

	1. Not at all worried	2.	3.	4.	5. Very worried
Having things stolen from your car	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being abused because of your skin colour, ethnic origin or religion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being physically attacked by strangers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having your property vandalised	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having your car stolen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being abused because of your gender/sexuality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being mugged and robbed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having your home broken into and something stolen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. How strongly do you agree with the following statements?

	Strongly Agree	Tend to Agree	Neither Agree nor Disagree	Tend to Disagree	Strongly Disagree
I don't think my local area has a problem with crime/ Anti-Social Behaviour	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In general I am not worried about crime/ Anti-Social Behaviour in my local area	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My local area is a safe place to live in, relatively free from crime and violence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
York as a whole is a safe place to live in, relatively free from crime and violence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. On a scale of 1 to 5 where 1 is "Not at all worried", and 5 is "Very worried, overall, how worried are you about being a victim of crime..."

	1. Not at all worried	2.	3.	4.	5. Very worried
In your local area?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In York?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. Your experiences with the police

These questions look at your experiences of the police in York. Police contact could be face to face, by telephone or by any other means.

If you have never seen a police officer or PCSO in York then please skip to Section 5. If you have seen a police officer or PCSO but haven't had contact with them, please answer questions 1 and 2 and then skip to Section 5.

1. When was the last time you saw a police officer or Police Community Support Officer (PCSO) in York?

- Within the last week
- More than 6 months ago but within the last year
- More than a week ago but within the last month
- More than a year ago
- More than a month ago but within the last 3 months
- Never seen police in York
- More than 3 months ago but within the last 6 months
- Can't remember

2. Where did you see them?

- In my local area
- Somewhere else in York
- Don't know

3. When was the last time you had contact with a police officer, PCSO, or member of police staff in York?

- Within the last week
- More than a week ago but within the last month
- More than a month ago but within the last 3 months
- More than 3 months ago but within the last 6 months
- More than 6 months ago but within the last year
- More than a year ago
- Never had contact with the police
- Can't remember

4. The Police initiated contact with me: Why did this contact take place?

- They were returning missing property or an animal to me
- They were dealing with a ringing burglar alarm
- They were investigating other noise or disturbance
- They were asking for information in connection with a crime that had been committed
- They were investigating an accident or traffic offence in which I was involved
- They searched me, my vehicle or my home
- They were making an arrest
- They asked me to move on
- They were giving me information
- It was a social chat/they asked me for directions

Other (please specify)

5. I initiated contact with the Police: Why did this contact take place?

- I reported a crime where myself or a member of my household was a victim
- I reported a crime where someone other than myself or a member of my household was a victim
- Because I was asked to do so (eg to show documents, give a statement)
- I reported a traffic accident or medical emergency
- I reported an alarm going off
- I reported any other suspicious circumstances or persons
- I reported any type of disturbance, noise or nuisance (apart from alarms going off)
- I reported that I had lost something (including animals)
- I reported that I had found something (including animals)
- I reported that my home was going to be empty
- I reported any other type of problem or difficulty
- I asked for directions or the time
- I asked for any other sort of advice or information
- I gave them any other sort of information
- It was just for a social chat

Other (please specify)

6. Please select the most appropriate choice from the list below

- I am not employed by North Yorkshire Police, nor is anyone in my household
- I am a police officer serving in York
- I am employed in some other capacity by North Yorkshire Police
- I am not employed by North Yorkshire Police but someone in my household is
- I am a police officer serving somewhere else in North Yorkshire
- Other (please specify)

4. Your experiences with the police

1. Thinking about the attitude and manner of the person you had contact with, how much do you agree with the following statements? (If more than one contact, please give an overall impression)

	Strongly Agree	Tend to Agree	Neither Agree nor Disagree	Tend to Disagree	Strongly Disagree
They were polite	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They communicated clearly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They were sympathetic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They treated you with respect	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They took the matter seriously	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They were fair	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They took account of your personal circumstances	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They listened carefully	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Have you been a victim of crime in the last 12 months?

- Yes, and I reported it to the police
- No
- Yes, but I didn't report it to the police
- Prefer not to say

3. Overall, would you rate your contact with the police as:

- Very Positive
- Neither negative nor positive
- Very negative
- Fairly positive
- Fairly negative

5. Your views about the police

These sets of questions ask you about your views of the police in York. You do not need to have had contact with the police to answer these questions.

We are interested in your opinions based on what you do know. There are no right or wrong answers to these questions.

1. Thinking about the police in York how much do you agree or disagree with the following statements?

	Strongly Agree	Tend to Agree	Neither Agree nor Disagree	Tend to Disagree	Strongly Disagree
They are reliable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can rely on them to sort out a problem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can rely on them to be there when I need them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can rely on them to respond quickly to emergencies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can rely on them to treat everyone fairly regardless of who they are	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can rely on them to work effectively to reduce crime	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can rely on them to treat me with respect if I had contact with them for any reason	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. Community engagement

This question asks about how the police in York interact with your local community. You do not need to have had contact with the police to answer these questions.

We are interested in your opinions based on what you do know. There are no right or wrong answers to these questions.

1. Thinking about the police in York, how much do you agree or disagree with the following statements?

	Strongly Agree	Tend to Agree	Neither Agree nor Disagree	Tend to Disagree	Strongly Disagree
They are dealing with the issues that matter to people in my community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They get involved in the activities within my community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They keep people informed about what they are doing to tackle crime and Anti-Social Behavior in my community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They understand the issues that affect my community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The police in York engage with my community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. Policing priorities

Appendices

This question asks how well you feel the police are dealing with some important policing priorities in York.

We are interested in your opinions based on what you do know. There are no right or wrong answers to these questions.

1. How much do you agree or disagree that the police are dealing with the following issues in York?

	Strongly Agree	Tend to Agree	Neither Agree nor Disagree	Tend to Disagree	Strongly Disagree
Car/Motorbike crime	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Violence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Traffic/road related issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Criminal Damage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cycle theft	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alcohol use and Alcohol related crime	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anti-Social Behaviour	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Burglary	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. Overall views of the police

This set of questions asks you about your overall views of the police in York. You do not need to have had contact with the police to answer these questions.

We are interested in your opinions based on what you do know. There are no right or wrong answers to these questions.

When answering these questions, please take into account your previous answers.

Appendices

1. How strongly do you agree with the following statements?

	Strongly Agree	Tend to Agree	Neither Agree nor Disagree	Tend to Disagree	Strongly Disagree
The police in York are visible to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My views of the police service as a whole affect my view of the police in York	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The police in York have enough resources to meet the demands asked of them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The police in this area can be relied upon to deal with minor crime	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taking everything into account, I think the police in York are doing a good job	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The police in York are reliable, efficient and fair	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The police in York are accessible to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taking everything into account, I have confidence in the police in York	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. What, if anything, could the police in York do to improve your confidence in them?

9. Where you live

This research looks at to what extent someone's current and past location affects their views about the police. This means that we need to collect information including how long you have lived in your local area/York, where you lived before coming to York and your full postcode.

The collection of your full and accurate postcode is essential for this research, and without this information, the benefits to your local area and York as a whole are reduced.

Your postcode and any other information you provide will not be used to identify you or to contact you in any way, and will not be passed on or sold to any third-party.

1. Please write your York postcode in the box below

2. How long have you lived in your local area?

- Less than 12 months
- 12 months or more but less than 2 years
- 2 years or more but less than 3 years
- 3 years or more but less than 5 years
- 5 years or more but less than 10 years
- 10 years or more but less than 20 years
- 20 years or more

3. How long have you lived in York?

- Less than 12 months
- 12 months or more but less than 2 years
- 2 years or more but less than 3 years
- 3 years or more but less than 5 years
- 5 years or more but less than 10 years
- 10 years or more but less than 20 years
- 20 years or more

4. If you have lived in York for less than 5 years then please use the boxes below to let us know where you previously lived. If your previous location was UK based then please write the first half of your postcode (eg. YO10) below. If your previous location was in a country other than the UK, please write the town/city and the country in the boxes below.

First half of postcode (UK only)	<input type="text"/>
Town/City (International only)	<input type="text"/>
Country (International only)	<input type="text"/>

5. How strongly do you agree with the following statements?

	Strongly Agree	Tend to Agree	Neither Agree nor Disagree	Tend to Disagree	Strongly Disagree
Living in York has changed my views about the police	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am more confident in the police as a whole after living in York	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am less confident in the police as a whole after living in York	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel more confident about the police in York than I did about the police in my previous location	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My experiences with the police somewhere else have affected my views of the police in York	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because of my experiences with the police somewhere else, I am more confident in the police of York than I would be otherwise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because of my experiences with the police somewhere else, I am less confident in the police of York than I would be otherwise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In the place I lived before coming to York, I felt more confident about the police than I do now	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. About you

We need to collect some personal information about you to help us see whether there are differences between the views of different groups of York residents.

Your responses are completely anonymous and are NOT personally identifiable.

1. In what year were you born?

2. What is your gender?

- Male
- Female

If you identify as a different gender, please write this in the box

3. What is your ethnic group?

- | | | |
|---|---|---|
| <input type="radio"/> White- British | <input type="radio"/> Asian / Asian British- Indian | <input type="radio"/> Any other Black background, please describe |
| <input type="radio"/> White- Irish | <input type="radio"/> Asian / Asian British- Pakistani | <input type="radio"/> Other ethnic group- Arab |
| <input type="radio"/> White- Any other White background, please describe | <input type="radio"/> Asian / Asian British- Bangladeshi | <input type="radio"/> Other ethnic group- Gypsy |
| <input type="radio"/> Mixed/Multiple groups- White and Black Caribbean | <input type="radio"/> Asian / Asian British- Chinese | <input type="radio"/> Other ethnic group- Traveller |
| <input type="radio"/> Mixed/Multiple groups- White and Black African | <input type="radio"/> Any other Asian background, please describe | <input type="radio"/> Any other ethnic group, please describe |
| <input type="radio"/> Mixed/Multiple groups- White and Asian | <input type="radio"/> Black / Black British- African | <input type="radio"/> Prefer not to say |
| <input type="radio"/> Any other Mixed / Multiple ethnic background, please describe | <input type="radio"/> Black / Black British- Caribbean | |

If you have answered "other", please state your ethnic background here

4. Which of the following options best describe how you think of yourself?

- Heterosexual/ Straight
- Gay/ Lesbian
- Bisexual
- Prefer not to say
- Other (please specify)

5. Which one of these activities best describes what you are doing at present?

- | | |
|---|--|
| <input type="radio"/> Employee in full time job (30 hours plus) | <input type="radio"/> Unemployed and available for work |
| <input type="radio"/> Employee in part time job (16-30 hours) | <input type="radio"/> Permanently sick / disabled |
| <input type="radio"/> Self employed full or part time | <input type="radio"/> Wholly retired from work |
| <input type="radio"/> On a government supported training programme (eg Modern Apprenticeship / National Traineeship / Training for Work / Adult Training) | <input type="radio"/> Looking after the home / looking after someone at home |
| <input type="radio"/> Full time education at school, college or university | <input type="radio"/> Prefer not to say |
| <input type="radio"/> Doing something else (please specify) | |

6. Are your day-to day activities limited because of a health problem or disability which has lasted, or is expected to last at least 12 months (including problems related to old age)

- Yes, limited a lot
- Yes, limited a little
- No
- Prefer not to say

11. Win one of two £50 Amazon vouchers

If you would like to be entered in the draw to win one of two £50 Amazon.co.uk vouchers, please enter your first name, and your email address or telephone number below so we can contact you if you are a winner.

This information will be processed separately from the results of the survey and will not be used to identify you in any way. Any information you provide will not be sold, loaned or given away to any other organisation and will be destroyed once the prize draw has been completed and the winners notified, no longer than 21 days after the close of the survey.

1. What is your first name?

2. Please enter your email address or telephone number

3. If you would like to receive one further email with the results of the study then please tick the box below. Your email address will be held securely by the University of York and will be destroyed once the results are sent out.

- I would like to receive the results of the survey

APPENDIX C: ORIGINAL FACTOR/VARIABLE KEY

Factor Name	Items	Variable Name	Question Source
Perception of Local Area Problems (LAP)	Noisy Neighbours or loud parties	LAP1	CYC Place Survey 2008/2009 & BCS/CSEW
<i>"How much of a problem do you think each of the following are in your local area?"</i>	Anti-Social Behaviour	LAP2	CYC Place Survey 2008/2009 & BCS/CSEW
	Rubbish or litter lying around	LAP3	CYC Place Survey 2008/2009 & BCS/CSEW
	Vandalism, Graffiti and other deliberate damage to property or vehicles	LAP4	CYC Place Survey 2008/2009 & BCS/CSEW
	People using or dealing drugs	LAP5	CYC Place Survey 2008/2009 & BCS/CSEW
	People being drunk or rowdy in public places	LAP6	CYC Place Survey 2008/2009 & BCS/CSEW
	Abandoned or burnt out cars	LAP7	CYC Place Survey 2008/2009 & BCS/CSEW
	Hate crime (Crimes against people because of their religion, sexual orientation etc.)	LAP8	CYC Place Survey 2008/2009 & BCS/CSEW
	People hanging around on the streets	LAP9	CYC Place Survey 2008/2009 & BCS/CSEW
Local Area Cohesion (LAC)	People in my local area treat each other with respect and consideration	LAC1	British Crime Survey/Crime Survey for England and Wales
<i>"How strongly do you agree with the following statements?"</i>	I could rely on other people in my local area to help me if I was in danger	LAC2	British Crime Survey/Crime Survey for England and Wales
	My local area is a close, tight-knit community	LAC3	British Crime Survey/Crime Survey for England and Wales
	People in my local area share the same values	LAC4	British Crime Survey/Crime Survey for England and Wales
	People in my local area	LAC5	British Crime

Appendices

	are willing to help their neighbours		Survey/Crime Survey for England and Wales
Fear of crime (FOC)	Being mugged and robbed	FOC1	British Crime Survey/Crime Survey for England and Wales
<i>"How worried are you about the following crimes happening in your local area?"</i>	Having your car stolen	FOC2	British Crime Survey/Crime Survey for England and Wales
	Having things stolen from your car	FOC3	British Crime Survey/Crime Survey for England and Wales
	Being physically attacked by strangers	FOC4	British Crime Survey/Crime Survey for England and Wales
	Having your home broken into and something stolen	FOC5	British Crime Survey/Crime Survey for England and Wales
	Having your property vandalised	FOC6	British Crime Survey/Crime Survey for England and Wales
	Being abused because of your skin colour, ethnic origin or religion	FOC7	British Crime Survey/Crime Survey for England and Wales
	Being abused because of your gender/sexuality	FOC8	British Crime Survey/Crime Survey for England and Wales
Perceptions of Local Area Safety (LASAFE)	Walking alone in your local area during the day	SAFE1	CYC Place Survey/ 2008/2009NYP Public Attitude Survey 2010
<i>"How safe would you feel in the following situations?"</i>	Walking alone in your local area after dark	SAFE2	CYC Place Survey/ 2008/2009NYP Public Attitude Survey 2010
	Being at home alone during the day	SAFE3	CYC Place Survey/ 2008/2009NYP Public Attitude Survey 2010
	Being at home alone after dark	SAFE4	CYC Place Survey/ 2008/2009NYP Public Attitude Survey 2010
	I don't think my local area has a problem with crime/ Anti-Social Behaviour	SAFE5	Newly Developed
	In general I am not worried about crime/ Anti-Social Behaviour in my	SAFE6	Newly Developed

Appendices

	local area		
	My local area is a safe place to live in, relatively free from crime and violence	SAFE7	Newly Developed
Police Interactions (PINT)	They were sympathetic	PI1	British Crime Survey/Crime Survey for England and Wales (adapted)
<i>"Thinking about the attitude and manner of the person you had contact with, how much do you agree with the following statements?"</i>	They listened carefully	PI2	British Crime Survey/Crime Survey for England and Wales (adapted)
	They communicated clearly	PI3	British Crime Survey/Crime Survey for England and Wales (adapted)
	They were polite	PI4	British Crime Survey/Crime Survey for England and Wales (adapted)
	They were fair	PI5	British Crime Survey/Crime Survey for England and Wales (adapted)
	They treated you with respect	PI6	British Crime Survey/Crime Survey for England and Wales (adapted)
	They took account of your personal circumstances	PI7	British Crime Survey/Crime Survey for England and Wales (adapted)
	They took the matter seriously	PI8	British Crime Survey/Crime Survey for England and Wales (adapted)
Public Confidence (PCON)	I can rely on them to be there when I need them	PCON1	Newly Developed
<i>"Thinking about the police in York, how much do you agree or disagree with the following statements?"</i>	They are reliable	PCON2	North Yorkshire Police Public Attitude Survey
	I can rely on them to respond quickly to emergencies	PCON3	North Yorkshire Police Public Attitude Survey

Appendices

	I can rely on them to sort out a problem	PCON4	North Yorkshire Police Public Attitude Survey
	I can rely on them to treat everyone fairly regardless of who they are	PCON5	North Yorkshire Police Public Attitude Survey
	I can rely on them to work effectively to reduce crime	PCON6	North Yorkshire Police Public Attitude Survey (adapted)
	I can rely on them to treat me with respect if I had contact with them for any reason	PCON7	North Yorkshire Police Public Attitude Survey
	Taking everything into account, I have confidence in the police in York	PCON8	British Crime Survey/Crime Survey for England and Wales
	The police in York are reliable, efficient and fair	PCON9	Newly Developed
	Taking everything into account, I think the police in York are doing a good job	PCON10	British Crime Survey/Crime Survey for England and Wales
Police & Community (PCOM)	They understand the issues that affect my community	PCOM1	BCS/CSEW & North Yorkshire Police Public Attitude Survey (adapted)
<i>"Thinking about the police in York, how much do you agree or disagree with the following statements?"</i>	They are dealing with the issues that matter to people in my community	PCOM2	BCS/CSEW & North Yorkshire Police Public Attitude Survey (adapted)
	They get involved in the activities within my community	PCOM3	BCS/CSEW & North Yorkshire Police Public Attitude Survey (adapted)
	They keep people informed about what they are doing to tackle crime and Anti-Social Behaviour in my community	PCOM4	BCS/CSEW & North Yorkshire Police Public Attitude Survey (adapted)
	The police in York engage with my community	PCOM5	Newly Developed

Appendices

Police dealing with Local Concerns (PDEAL)	Burglary	PDEAL1	Newly Developed based on SYP Priorities
<i>"How much do you agree or disagree that the police are dealing with the following issues in York?"</i>	Car/Motorbike crime	PDEAL2	Newly Developed based on SYP Priorities
	Cycle theft	PDEAL3	Newly Developed based on SYP Priorities
	Criminal Damage	PDEAL4	Newly Developed based on SYP Priorities
	Violence	PDEAL5	Newly Developed based on SYP Priorities
	Anti-Social Behaviour	PDEAL6	Newly Developed based on SYP Priorities
	Traffic/road related issues	PDEAL7	Newly Developed based on SYP Priorities
	Alcohol use and Alcohol related crime	PDEAL8	Newly Developed based on SYP Priorities

APPENDIX D: COMPLETE FACTOR/VARIABLE KEY FOR SEM

Factor Name	Item	Description
<p>Perception of Local Area Problems (LAP) <i>"How much of a problem do you think each of the following are in your local area?"</i></p>	LAP2	Anti-Social Behaviour
	LAP3	Rubbish or litter lying around
	LAP4	Vandalism, Graffiti and other deliberate damage to property or vehicles
	LAP5	People using or dealing drugs
	LAP6	People being drunk or rowdy in public places
	LAP9	People hanging around on the streets
	SAFE5	I don't think my local area has a problem with crime/ Anti-Social Behaviour
<p>Local Area Cohesion (LAC) <i>"How strongly do you agree with the following statements?"</i></p>	LAC2	I could rely on other people in my local area to help me if I was in danger
	LAC3	My local area is a close, tight-knit community
	LAC5	People in my local area are willing to help their neighbours
<p>Fear of crime (FOC) <i>"How worried are you about the following crimes happening in your local area?"</i></p>	FOC1	Being mugged and robbed
	FOC2	Having your car stolen
	FOC3	Having things stolen from your car
	FOC4	Being physically attacked by strangers
<p>Perceptions of Local Area Safety (LASAFE) <i>"How safe would you feel in the following situations?"</i></p>	SAFE1	Walking alone in your local area during the day
	SAFE3	Being at home alone during the day
	SAFE4	Being at home alone after dark
<p>Police Interactions (PINT) <i>"Thinking about the attitude and manner of the person you had contact with, how much do you agree with the following statements?"</i></p>	PI1	They were sympathetic
	PI2	They listened carefully
	PI3	They communicated clearly
	PI4	They were polite
	PI5	They were fair
	PI6	They treated you with respect
	PI8	They took the matter seriously

Appendices

<p>Public Confidence (PCON) "Thinking about the police in York, how much do you agree or disagree with the following statements?"</p>	PCON1	I can rely on them to be there when I need them
	PCON2	They are reliable
	PCON3	I can rely on them to respond quickly to emergencies
	PCON4	I can rely on them to sort out a problem
	PCON6	I can rely on them to work effectively to reduce crime
	PCON8	Taking everything into account, I have confidence in the police in York
<p>Police & Community (PCOM) "Thinking about the police in York, how much do you agree or disagree with the following statements?"</p>	PCOM1	They understand the issues that affect my community
	PCOM3	They get involved in the activities within my community
	PCOM5	The police in York engage with my community
<p>Police dealing with Local Concerns (PDEAL) "How much do you agree or disagree that the police are dealing with the following issues in York?"</p>	PDEAL1	Burglary
	PDEAL2	Car/Motorbike crime
	PDEAL4	Criminal Damage
	PDEAL5	Violence
	PDEAL8	Alcohol use and Alcohol related crime

APPENDIX E: OPERATION SPOKE INVITATION

If you're having trouble viewing this email, you may [see it online](#).

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Click [here](#) to complete the survey

Safer York Partnership in conjunction with the University of York and City of York Council are looking for your help with an exciting new research project that could shape how North Yorkshire Police and City of York Council allocate their resources around York.

We are asking as many current and recent York residents as possible to complete the [following survey](#) which should take less than 10 minutes to complete. As a thank you for your time, you can choose to be entered into a draw to win one of two £50 [Amazon.co.uk](#) vouchers.

The survey is a great opportunity to let local bodies know how you feel about the issues that matter to you and is a chance for you to make a real difference to in making the city of York an even safer area than it already is.

For more information about the survey, please see the [Safer York Partnership website](#)

THE UNIVERSITY *of York*

Safer York Partnership, York Centre for Safer Communities
Lower Friargate, York, YO1 9SL
Tel: (01904) 669069 - Fax: (01904) 669054
Email: safercommunities@northyorkshire.pnn.police.uk

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APPENDIX F: PRESS RELEASE 1

Survey probes York residents' attitudes towards the police

Posted on 23 April 2012

A major new survey will give residents of York the opportunity to express their views on crime, the fear of crime, confidence and their views on policing.

Academics at the York Management School at the University of York, led by Professor Kiran Fernandes, have devised the survey with the support of North Yorkshire Police, Safer York Partnership and City of York Council.

The survey will gather the views of thousands of residents and former residents of York. A key feature of the research will be investigating the impact of where people live now and in the past on their attitudes towards the police.

It will give North Yorkshire Police a robust evidence-based analysis of public perceptions of the police that may be used by senior officers to allocate resources in a way that maximises public confidence in the services the force provides.

People can complete the survey online at www.saferyork.org.uk/public-attitudes-survey.html or at the Community Safety Market in York city centre this week. Touch screen terminals in the city centre and at the University will also collect survey responses.

Researcher Mike Perkins, of the York Management School, said: "Potential benefits from this research are wide-ranging, and could have a significant impact on residents of York, the academic community, the North Yorkshire Police and police forces across the UK."

Councillor Sandy Fraser, City of York Council's Cabinet Member for Crime and Community, said: "This project is an excellent opportunity for us to canvas public opinion on crime and community safety which will help agencies to ensure that their services are meeting the community's needs. It is important that the police and the other enforcement agencies understand people's perceptions and priorities in respect of the important work that is done in tackling crime in the city.

“
Potential benefits from this research are wide-ranging, and could have a significant impact on residents of York
”
Mike Perkins

Appendices

"I would urge as many of York's citizens as possible, both young and older, to make their views known through this survey. We want to ensure that we can build the best possible picture of the needs and wishes of York people, to make what is already a relatively safe and low-crime area even less attractive to the criminal elements within our community."

North Yorkshire's Deputy Chief Constable Tim Madgwick added: "North Yorkshire Police are committed to improving the service that we provide to the people of York, and we can only achieve this by seeking the views of the communities we serve. Working in partnership with the University and the Council is an excellent opportunity to gain valuable information from our communities and we would strongly encourage all residents to complete this survey."

"It will provide us with additional information about our communities which will assist us in shaping our resources to ensure we deliver the best possible policing service to the City of York."

The survey will be officially launched at the York Crime Summit in York city centre on 25 April and will be available to complete on the day. People who complete the survey will have the chance of winning one of two £50 Amazon vouchers. The survey will run until the 30 June, with the results likely to be known in autumn 2012.



Notes to editors:

- The survey is available at www.saferyork.org.uk/public-attitudes-survey.html
- More about the researchers at www.york.ac.uk/management/doctoral-studies/phd/mperkins/ and www.york.ac.uk/management/staff/kfernandes/
- More information about the York Management School at the University of York at www.york.ac.uk/management/

APPENDIX G: PRESS RELEASE 2

York residents give their verdict on public safety and policing

Posted on 4 October 2012

Residents in York are broadly positive about the city in terms of public safety and their attitudes towards the police, according to a new survey.

The survey gave residents the opportunity to express their views on York and their local areas in terms of crime, anti-social behaviour and policing.

Academics at the York Management School at the University of York, led by Professor Kiran Fernandes, devised and delivered the survey alongside City of York Council with the support of North Yorkshire Police and Safer York Partnership.

The survey gathered the views of over 2,400 residents and former residents of York between April and June this year. It revealed that three-quarters of respondents felt that York is a safe place overall and more than 90 per cent of respondents indicated they were satisfied with their local area as a place in which to live.

Approximately 70 per cent of respondents had confidence in the police in York and over 80 per cent felt that they could rely on them to treat them with respect. Most also had positive views about the levels of crime and anti-social behaviour in their areas with the issue of rubbish or litter generally being the biggest cause for concern.

Asked what would increase confidence in the police in York, most responses focused on a greater desire for increased police presence and visibility, though a substantial proportion suggested greater communication and community engagement by the force would also be helpful.

These results form part of a larger study carried out by the University of York team investigating the issues that affect public attitudes towards policing with further results expected later in the year.

“

It is critical that the public are confident about the police and local policing initiatives, as this will enable a more efficient, citizen-focused policing system in the UK

”

Professor Kiran Fernandes

Appendices

Researcher Mike Perkins, of the York Management School, said: "I would like to thank all of the York residents who took their time to complete this survey and provide us with their views. I hope to work with the partner organisations involved to ensure that residents benefit from the results of this study."

Professor Fernandes added: "It is critical that the public are confident about the police and local policing initiatives, as this will enable a more efficient, citizen-focused policing system in the UK."

Councillor Dafydd Williams, City of York Council's cabinet member for Crime and Stronger Communities said: "It is very pleasing to know that this survey confirms what figures already show, which is that York is a safe place in which to live and work. But we are not complacent and we know there are still problems with anti-social behaviour especially, which the council is committed to tackling."

North Yorkshire's Temporary Chief Constable Tim Madgwick added: "The results are positive and support our position as one of the safest places in the country. Our partners play a vital role in our drive to keep crime and anti-social behaviour down and I must acknowledge the important work they do alongside the police to help keep our communities safe.

"We have some of the lowest levels of anti-social behaviour in the country and have recorded a significant reduction in this type of offence across the force area, including a 28 per cent reduction in the York area.

"However, we are not complacent and one of my main priorities is to improve the service we give to members of the public, including neighbourhoods where anti-social behaviour is a problem."



Notes to editors:

- Download the [Crime Survey Results \(PDF !\[\]\(2a133ebb0337313d16cc068f19494aa2_img.jpg\), 1,325kb\)](#)
- More about the researchers at www.york.ac.uk/management/doctoral-studies/phd/mperkins/ and www.york.ac.uk/management/staff/kfernandes/
- More information about the York Management School at the University of York at www.york.ac.uk/management/

Appendices

APPENDIX H: WEIGHTING CALCULATIONS

Age	Respondent Numbers	%	2011 Census Data	%	Difference	Weighting factor
Base						
18-24 (Ages 20-24 on census, so added 6,810 to 19,800: 48.3% based on 2001 census)	395	29.88 %	26,610	16.53 %	0.134	0.5531
25-34	226	17.10 %	26,700	16.58 %	0.005	0.9700
35-44	193	14.60 %	26,300	16.33 %	-0.017	1.1189
45-54	196	14.83 %	25,700	15.96 %	-0.011	1.0766
55-64	162	12.25 %	22,300	13.85 %	-0.016	1.1302
65-74	88	6.66%	16,900	10.50 %	-0.038	1.5768
75+	29	2.19%	16,500	10.25 %	-0.081	4.6716
17 or under	6	0.45%				
Prefer not to say	27	2.04%				
	1322		161,010			
Ethnicity	Respondent Numbers	%	2011 Census Data	%	Difference	Weighting factor
Base		1322				
White British	1083	81.9%	148,700	88.56 %	-0.066	1.0811
BME	206	15.6%	19,200	11.44 %	0.041	0.7339
Prefer not to say	33	2.5%				
	1322		167,900	100.0 0%		
Gender	Respondent Numbers	%	2011 Census Data	%	Difference	Weighting factor
Base		1317				
Male	611	46.4%	96,300	48.64 %	-0.022	1.0483
Female	693	52.6%	101,800	51.41 %	0.012	0.9771
Other	1	0.1%				0.0000
Prefer not to say	12	0.9%				0.0000
Total	1317					

Appendices

Ward population	Respondent Numbers	%	Census estimate 2010	%	Difference	Weighting Factor
Base (1322-53 postcode errors)	1269					
Acomb	45	3.55%	8900	4.40%	-0.008	1.2397
Bishopthorpe	24	1.89%	4050	2.00%	-0.001	1.0577
Clifton	52	4.10%	13890	6.86%	-0.028	1.6743
Derwent	14	1.10%	3610	1.78%	-0.007	1.6162
Dringhouses and Woodthorpe	68	5.36%	11280	5.57%	-0.002	1.0397
Fishergate	120	9.46%	9760	4.82%	0.046	0.5098
Fulford	23	1.81%	2770	1.37%	0.004	0.7549
Guildhall	60	4.73%	8110	4.01%	0.007	0.8472
Haxby and Wigginton	32	2.52%	12630	6.24%	-0.037	2.4739
Heslington	189	14.89%	5210	2.57%	0.123	0.1728
Heworth	86	6.78%	13390	6.61%	0.002	0.9759
Heworth Without	18	1.42%	3760	1.86%	-0.004	1.3093
Holgate	78	6.15%	13090	6.47%	-0.003	1.0519
Hull Road	135	10.64%	10390	5.13%	0.055	0.4824
Huntington and New Earswick	35	2.76%	12460	6.15%	-0.034	2.2314
Micklegate	93	7.33%	13030	6.44%	0.009	0.8782
Osballdwick	18	1.42%	3680	1.82%	-0.004	1.2814
Rural West York	54	4.26%	10870	5.37%	-0.011	1.2617
Skelton, Rawcliffe and Clifton Without	57	4.49%	13910	6.87%	-0.024	1.5296
Strensall	17	1.34%	8900	4.40%	-0.031	3.2814
Westfield	40	3.15%	14400	7.11%	-0.040	2.2564
Wheldrake	11	0.87%	4370	2.16%	-0.013	2.4901
Postcode error/prefer not to say	53	4.18%		0.00%	0.042	0.0000
Total	1269		202460			

APPENDIX I: WARD PERCEPTION CALCULATIONS

1.	Ward (Highest Ranked-Lowest Ranked)	Average Score per respondent	Number of respondents per ward	Grouping
1.	Wheldrake	32.36	11	Highly Ranked
2.	Derwent	33.50	14	Highly Ranked
3.	Rural West York	33.85	54	Highly Ranked
4.	Strensall	35.88	17	Highly Ranked
5.	Bishopthorpe	35.92	24	Highly Ranked
6.				
7.	Haxby and Wigginton	36.25	32	Not analysed
8.	Heworth Without	36.67	18	Not analysed
9.	Fulford	38.17	23	Not analysed
10.	Heslington	38.90	189	Not analysed
11.	Huntington and New Earswick	41.20	35	Not analysed
12.	Dringhouses and Woodthorpe	41.35	68	Not analysed
13.	Osaldwick	42.33	18	Not analysed
14.	Micklegate	42.53	93	Not analysed

Appendices

15.	Holgate	42.76	78	Not analysed
16.	Fishergate	43.14	120	Not analysed
17.	Acomb	44.41	44	Not analysed
18.	Skelton, Rawcliffe and Clifton Without	44.98	57	Not analysed
19.				
20.	Hull Road	47.17	135	Poorly Ranked
21.	Clifton	48.58	52	Poorly Ranked
22.	Heworth	48.64	86	Poorly Ranked
23.	Westfield	49.08	40	Poorly Ranked
24.	Guildhall	51.50	60	Poorly Ranked

DEFINITIONS

ACPO : Association of Chief Police Officers	FOA : Fear of Abuse
AMOS : Analysis of Moments Of Structure	FOC : Fear of Crime
APA : Association of Police Authorities	GOF : Goodness of Fit
APACS : Analysis of Policing and Community Safety	HMIC : Her Majesty's Inspectorate of Constabulary
AsPACS : Assessments of Policing and Community Safety	HPWs : Highly Perceived Wards
ASV : Average Squared Shared Variance	IF : Intermediary Factor
AVE : Average Variance Extracted	KMO : Kaiser-Meyer-Olkin
BCS : British Crime Survey	KPI : Key Performance Indicator
BCU : Basic Command Unit	LAC : Local Area Cohesion
BVPI : Best Value Performance Indicator	LAP : Perception of Local Area Problems
C.R. : Critical Ratio	LASAFE : Perceptions of Local Area Safety
CDRPs : Crime and Disorder Reduction Partnerships	LPF : Local Perspective Factor
CFA : Confirmatory Factor Analysis	MCAR : Missing Completely At Random
CFI : Comparative Fit Index	MCMC : Markov Chain Monte Carlo
CJS : Criminal Justice System	MI : Multiple Imputation
CR : Construct Reliability	MI : Multiple Imputation
CSEW : Crime Survey of England and Wales	MLE : Maximum Likelihood Estimation
CYC : City of York Council	NFI : Normed Fit Index
DAATs : Drug and Alcohol Action Teams	NPM : New Public Management
DF : Degrees of Freedom	NRPP : National Reassurance Policing Programme
EFA : Exploratory Factor Analysis	NYP : North Yorkshire Police
FA : Factor Analysis	PCA : Principal Components Analysis
	PCC : Police and Crime Commissioner
	PCOM : Police & Community
	PCON : Public Confidence

Definitions

PDEAL	: Police Dealing with Local Concerns	PPWs	: Poorly Perceived Wards
PFA	: Police Force Area	PSA	: Public Service Agreement
PI	: Performance Indicator	PSU	: Policing Standards Unit
PIF	: Police Influenced Factor	Q-Q	: Quantile-Quartile
PINT	: Police Interactions	RMSEA	: Root mean Square Error of Approximation
PMM	: Performance Measurement and Management	SEM	: Structural Equation Modelling
PMS	: Performance Measurement and Management System	SIC	: Squared Inter-construct Correlations
PNFI	: Parsimony Normed Fit Index	SPI	: Statutory Performance Indicator
PPAF	: Police Performance Assessment Framework	SYP	: Safer York Partnership
		TLAP	: Total Local Area Perceptions

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