

# **Critical Success Factors for Knowledge Management**

**Yusra Mouzughi**

A thesis submitted in partial fulfilment of the  
requirements of Liverpool John Moores University  
for the degree of Doctor of Philosophy

January 2009

## **ABSTRACT**

The aim of this study is to establish whether knowledge management makes a positive contribution to perceptions of organisational success in financial service institutions. In addressing this aim, the study develops the twin objectives of identifying the critical success factors for knowledge management and then establishing which of these factors has an impact on perceptions of organisational success.

The research adopts a mixed methods approach. The design of the study is in three distinct stages. The first is a thorough review of current literature regarding the critical success factors for knowledge management. Stage two is refinement and confirmation of these factors through interviews with key players in financial services leading to the development of nine research hypotheses, and the final stage is a large scale survey (n=191) testing these hypotheses in order to establish the relationships between the critical success factors and perceptions of organisational success.

Key findings of this research are that there is a significant difference in perceptions of organisational success for organisations operating in a knowledge management environment compared with organisations operating in a non-knowledge management environment. Furthermore, this research has also established that the portfolio of factors associated with perceptions of organisational success are different for the two groups of organisations. Additionally, the predictors of success for organisations operating in a knowledge management environment are routine knowledge sharing and knowledge sharing based reward, whilst for organisations operating in a non-knowledge management environment; they are high trust climate and effective information technology.

Thus, this research makes an important contribution to knowledge management theory by developing a unifying framework of critical success factors for knowledge management in financial service institutions. The practical implications of this study mean that managers can focus on the factors that make most impact on perceptions of organisational success. The study highlights avenues for future research including more in-depth exploration of the critical success factors as well as the impact of the interrelationships of the factors on perceptions of organisational success.

## Acknowledgements

There are many people to whom I owe a debt of gratitude for helping me along the PhD road. First and foremost, my Director of Studies, Prof. Gill Wright for her perseverance with me, her support, her honest feedback and her patience through my obsession with word count!

I also wish to thank the rest of my supervisory team, Dr Dave Bryde and Dr Ann Thorne, for their support; Dave for always making the time to listen, discuss and read drafts and Ann for her moral support, her encouraging words and valuable advice.

My thanks also go to Liverpool John Moores University for supporting me through the PhD and to all my colleagues who have taken a real interest in my progress. Specifically, I would like to mention Dr Jo Meehan with whom I have shared an office and therefore shared every one of the many ups and downs in completing this thesis. A special mention also for Dr Ian Lovegrove for his practical and moral support, Barry Barnes for his understanding and willingness to accommodate my many requests and to Lindsey Muir for the many coffees where I have bored her with intricate details of progress on my PhD!

A very special thank you goes to my family for their support throughout the long PhD journey; my father for instilling in me a respect for education, my mother for always being there to listen to my many moans, to my sister Huda for being the role model and proving to me that it can be done (even with 6 children) and my sister Hiba who has patiently listened to every single detail as well as proof reading the final draft – I promise, we'll talk about something different now!

I must also mention my daughter Noor, the joy of my life, who has made doing all of this worthwhile. However, this thesis would never have been completed without the help and support of my loving husband, Abdel Moneim, who has always been there patiently encouraging me, supporting me and giving me confidence in myself – thank you.

## **Dedication**

I would like to dedicate this piece of work to Fadwa, my best friend. Even through her long fight against cancer, she has always been there to motivate me, encourage me and make me see the end game. Her sheer selflessness amazes me.

Fadwa - I wish you all the health in the world.

# Table of Contents

## **Chapter 1: Introduction**

|   |           |
|---|-----------|
| <b>1.1 Introduction and Background</b>  | <b>2</b>  |
| <b>1.2 Justification for the Study</b>  | <b>3</b>  |
| <b>1.3 Aims and Objectives</b>  | <b>4</b>  |
| <b>1.4 Methodology</b>  | <b>5</b>  |
| <b>1.5 Contribution to Knowledge</b>  | <b>6</b>  |
| <b>1.5.1 Contributions to Theory</b>  | <b>6</b>  |
| <b>1.5.2 Contributions to Management Practise</b>   | <b>7</b>  |
| <b>1.6 Thesis Outline</b>   | <b>8</b>  |
| <b>1.6.1 Chapter Two: Literature Review</b>   | <b>8</b>  |
| <b>1.6.2 Chapter Three: Methodology and Methods</b>   | <b>8</b>  |
| <b>1.6.3 Chapter Four: Qualitative Results</b>  | <b>9</b>  |
| <b>1.6.4 Chapter Five: Quantitative Results</b>   | <b>9</b>  |
| <b>1.6.5 Chapter Six: Discussion of Results</b>   | <b>9</b>  |
| <b>1.6.6 Contribution to Knowledge, Limitations and Areas for<br/>        Future Research</b> | <b>10</b> |
| <b>1.7 Summary</b>  | <b>10</b> |

## **Chapter 2: Literature Review**

|   |           |
|---|-----------|
| <b>2.1 Introduction</b>                                       | <b>12</b> |
| <b>2.2 Definitions of KM and KM Programmes</b>                | <b>12</b> |
| <b>2.2.1 Awareness of KM vs Non-Awareness of KM Dichotomy</b> | <b>14</b> |
| <b>2.3 General Critical Success Factors</b>                   | <b>15</b> |
| <b>2.4 Success and KM</b>                                     | <b>17</b> |
| <b>2.5 KM Critical Success Factors</b>                        | <b>19</b> |

## **Part One: Environmental Influences**

|   |           |
|---|-----------|
| <b>2.5.1 Culture</b>  | <b>24</b> |
| <b>2.5.1.1 Culture and KM</b>                                   | <b>27</b> |
| <b>2.5.2 Climate</b>  | <b>32</b> |
| <b>2.5.2.1 Organisational Climate vs Organisational Culture</b> | <b>34</b> |

|   |    |
|---|----|
| 2.5.2.2 Climate and KM  | 35 |
| 2.5.3 Knowledge Sharing   | 36 |
| 2.5.3.1 Theoretical Frameworks for Knowledge Sharing                            | 37 |
| 2.5.3.2 Knowledge Sharing and KM  | 39 |
| 2.5.4 Job Satisfaction  | 44 |
| 2.5.4.1 Theoretical frameworks for job satisfaction                             | 45 |
| 2.5.4.2 Job Satisfaction and KM   | 47 |
| <br>  |    |
| <b>Part Two: Organisational Influences</b>                                      |    |
| 2.5.5 Organisational Structure  | 48 |
| 2.5.5.1 Frameworks for Organisational Structure in KM Environments              | 49 |
| 2.5.5.2 Organisational Structure and KM   | 52 |
| 2.5.6 Innovation  | 55 |
| 2.5.6.1 Frameworks for Innovation   | 55 |
| 2.5.6.2 Innovation and KM   | 59 |
| 2.5.7 Reward  | 64 |
| 2.5.7.1 Frameworks for Reward   | 65 |
| 2.5.7.2 Reward and KM   | 67 |
| <br>  |    |
| <b>Part Three: Resource Influences</b>  |    |
| 2.5.8 Information Technology  | 70 |
| 2.5.8.1 IT: Organisational Performance, Tacit Knowledge &<br>Knowledge Creation | 71 |
| 2.5.8.2 IT Systems and KM   | 74 |
| 2.5.9 Time  | 79 |
| 2.5.9.1 Time and KM   | 80 |
| 2.6 Measurement Issues  | 82 |
| 2.6.1 The Argument Against  | 83 |
| 2.6.2 The Argument For  | 84 |
| 2.7 Conclusion  | 86 |
| <br>  |    |
| <b>Chapter 3: Methodology and Methods</b>                                       |    |
| 3.1 Introduction  | 89 |
| 3.2 Philosophical Approaches  | 89 |
| 3.2.1 Positivism  | 90 |

|  |            |
|--|------------|
| <b>3.2.2 Interpretivism</b>  | <b>91</b>  |
| <b>3.2.3 Realism</b>   | <b>93</b>  |
| <b>3.3 Approaches of Existing Research</b>   | <b>95</b>  |
| <b>3.4 Approach Taken by this Study</b>  | <b>96</b>  |
| <b>3.4.1 Positioning of this Study</b>   | <b>98</b>  |
| <b>3.5 Triangulation</b>   | <b>101</b> |
| <b>3.6 Development of Theoretical Framework</b>                                    | <b>102</b> |
| <b>3.7 Stage 1: Literature Review</b>  | <b>107</b> |
| <b>3.8 Stage 2: Exploratory Research</b>   | <b>109</b> |
| <b>3.9 Stage 3: Survey</b>   | <b>114</b> |
| <b>3.9.1 Design of the Questionnaire</b>   | <b>115</b> |
| <b>3.9.2 Instrument Development</b>  | <b>118</b> |
| <b>3.9.2.1 Attitudinal Data</b>  | <b>119</b> |
| <b>3.9.2.2 Categorisation Data</b>   | <b>122</b> |
| <b>3.9.3 Layout Considerations</b>   | <b>124</b> |
| <b>3.9.4 Pilot Testing</b>   | <b>126</b> |
| <b>3.9.5 Sampling</b>  | <b>127</b> |
| <b>3.9.6 Features to Promote Response</b>  | <b>128</b> |
| <b>3.10 Ethical Considerations</b>   | <b>121</b> |
| <b>3.11 Data Management</b>  | <b>129</b> |
| <b>3.11.1 Data Capture</b>   | <b>131</b> |
| <b>3.11.2 Data Input &amp; Coding</b>  | <b>131</b> |
| <b>3.11.3 Data Editing</b>   | <b>132</b> |
| <b>3.12 Data Analysis Procedures</b>   | <b>132</b> |
| <b>3.12.1 Reliability</b>  | <b>133</b> |
| <b>3.12.2 Representative Bias</b>  | <b>134</b> |
| <b>3.12.2.1 Impact of Gender on Perceptions of Success</b>                         | <b>134</b> |
| <b>3.12.2.2 Impact of Position in Organisation on Perceptions of Success</b>       | <b>135</b> |
| <b>3.12.2.3 Impact of Level of Understanding of KM on Perceptions of Success</b>   | <b>136</b> |
| <b>3.12.2.4 Impact of Organisational Strategic Focus on Perceptions of Success</b> | <b>136</b> |
| <b>3.12.3 Validity</b>   | <b>138</b> |
| <b>3.12.4 Correlation Analysis</b>   | <b>139</b> |
| <b>3.12.5 Regression Analysis</b>  | <b>140</b> |
| <b>3.12.5.1 Assumptions for Regression Analysis</b>                                | <b>141</b> |

|                     |            |
|---------------------|------------|
| <b>3.13 Summary</b> | <b>146</b> |
|---------------------|------------|

## **Chapter 4: Qualitative Results: Refining the Theoretical Framework**

|   |            |
|---|------------|
| <b>4.1 Introduction</b>                                 | <b>149</b> |
| <b>4.2 Objective 1: Critical Success Factors for KM</b> | <b>149</b> |
| <b>4.2.1 Overview of Interview Responses</b>            | <b>150</b> |
| <b>4.2.2 Outcomes of Qualitative Analysis</b>           | <b>161</b> |
| <b>4.3 Key Findings: Objective 1</b>                    | <b>165</b> |
| <b>4.3.1 Culture</b>                                    | <b>165</b> |
| <b>4.3.2 Knowledge Sharing</b>                          | <b>165</b> |
| <b>4.3.3 Information Technology</b>                     | <b>166</b> |
| <b>4.3.4 Time</b>                                       | <b>166</b> |
| <b>4.4 Development of Research Hypotheses</b>           | <b>166</b> |
| <b>4.5 Summary</b>                                      | <b>168</b> |

## **Chapter 5: Quantitative Results**

|   |            |
|---|------------|
| <b>5.1 Introduction</b>   | <b>170</b> |
| <b>5.2 Overview of Sample</b>                                       | <b>171</b> |
| <b>5.2.1 Respondents' Profile</b>                                   | <b>171</b> |
| <b>5.2.2 Role Profile</b>   | <b>172</b> |
| <b>5.2.3 Organisational Profile</b>                                 | <b>174</b> |
| <b>5.2.4 Organisational KM Environment Profile</b>                  | <b>175</b> |
| <b>5.3 Overview of Survey Responses</b>                             | <b>176</b> |
| <b>5.3.1 Knowledge-Friendly Culture</b>                             | <b>176</b> |
| <b>5.3.2 High-Trust Climate</b>                                     | <b>180</b> |
| <b>5.3.3 Routine Knowledge Sharing</b>                              | <b>183</b> |
| <b>5.3.4 High Levels of Job Satisfaction</b>                        | <b>185</b> |
| <b>5.3.5 Flexible Organisational Structure</b>                      | <b>187</b> |
| <b>5.3.6 Routine Innovation</b>                                     | <b>188</b> |
| <b>5.3.7 Knowledge-Sharing Based Reward</b>                         | <b>189</b> |
| <b>5.3.8 Effective Information Technology</b>                       | <b>191</b> |
| <b>5.3.9 Availability of Time</b>                                   | <b>191</b> |
| <b>5.3.10 Overall Frequency of Responses to Items in Constructs</b> | <b>192</b> |



|   |            |
|---|------------|
| <b>5.4 Objective 2: Relationship between Critical Success Factors and Perceptions of Organisational Success</b> | <b>193</b> |
| <b>5.4.1 Relationship Between Awareness of KM Programme and Organisational Success</b>                          | <b>195</b> |
| <b>5.4.2 Relationship between Individual Constructs and Perceptions of Organisational Success</b>               | <b>195</b> |
| <b>5.4.2.1 Knowledge-Friendly Culture</b>   | <b>196</b> |
| <b>5.4.2.2 High-Trust Climate</b>   | <b>196</b> |
| <b>5.4.2.3 Routine Knowledge Sharing</b>  | <b>197</b> |
| <b>5.4.2.4 High Levels of Job Satisfaction</b>  | <b>197</b> |
| <b>5.4.2.4 Flexible Organisational Structure</b>  | <b>198</b> |
| <b>5.4.2.6 Routine Innovation</b>   | <b>198</b> |
| <b>5.4.2.7 Knowledge-Sharing Based Reward</b>   | <b>199</b> |
| <b>5.4.2.8 Effective Information Technology</b>   | <b>199</b> |
| <b>5.4.2.9 Availability of Time</b>   | <b>200</b> |
| <b>5.4.3 Summary of Relationships</b>   | <b>200</b> |
| <b>5.4.3.1 Factors Influencing Success for Organisations Operating a KM Programme</b>                           | <b>201</b> |
| <b>5.4.3.2 Factors Influencing Success for Organisations Not Operating a KM Programme</b>                       | <b>202</b> |
| <b>5.5 Predictors of Success</b>  | <b>202</b> |
| <b>5.5.1 Predictors of Success for Organisations Operating in a KM Environment</b>                              | <b>203</b> |
| <b>5.5.2 Predictors of Success for Organisations Operating in a Non-KM Environment</b>                          | <b>204</b> |
| <b>5.6 Key Findings: Objective 2</b>  | <b>205</b> |
| <b>5.6.1 Critical Success Factors</b>   | <b>205</b> |
| <b>5.6.2 Predictors of Success</b>  | <b>207</b> |
| <b>5.7 Summary</b>  | <b>208</b> |
| <br>  |            |
| <b>Chapter 6: Discussion of Results</b>   |            |
| <b>6.1 Introduction</b>   | <b>210</b> |
| <b>6.2 Critical Success Factors for KM</b>  | <b>210</b> |
| <b>6.2.1 Factors Critical to the Success of KM Programmes</b>   | <b>210</b> |

|  |     |
|--|-----|
| 6.2.1.1 Knowledge-Friendly Culture   | 210 |
| 6.2.1.2 Routine Knowledge Sharing  | 213 |
| 6.2.1.3 Effective Information Technology (IT)  | 215 |
| 6.2.1.4 Availability of Time   | 218 |
| 6.2.2 Factors not Critical to the Success of KM Programmes   | 219 |
| 6.2.2.1 High-Trust Climate   | 219 |
| 6.2.2.2 High Levels of Job Satisfaction  | 220 |
| 6.2.2.3 Flexible Organisational Structure  | 221 |
| 6.2.2.4 Routine Innovation   | 222 |
| 6.2.2.5 Knowledge-Sharing Based Reward   | 223 |
| 6.3 Impact of Critical Success Factors on Perceptions of Organisational Success  | 225 |
| 6.3.1 Factors which Impacted on Perceived Organisational Success for Organisations Operating in a KM Environment and in a Non-KM Environment       | 226 |
| 6.3.1.1 Knowledge-Friendly Culture   | 226 |
| 6.3.1.2 High-Trust Climate   | 227 |
| 6.3.1.3 Flexible Organisational Structure  | 227 |
| 6.3.1.4 Effective IT   | 229 |
| 6.3.2 Factors which Impacted on Perceived Organisational Success in Organisations Operating in a KM Environment                                    | 230 |
| 6.3.2.1 Routine Knowledge Sharing  | 230 |
| 6.3.2.2 High Levels of Job Satisfaction  | 231 |
| 6.3.2.3 Knowledge-Sharing Based Reward   | 232 |
| 6.3.3 Factors which Impacted on Perceived Organisational Success in Organisations Operating in a Non-KM Environment                                | 233 |
| 6.3.3.1 Routine Innovation   | 233 |
| 6.3.4 Factors which did not Impact on Perceived Organisational Success for Organisations Operating in a KM Environment and in a Non-KM Environment | 235 |
| 6.3.4.1 Availability of Time   | 235 |
| 6.3.5 Predictors of Success for Organisations Operating in a KM Environment  | 236 |
| 6.3.6 Predictors of Success for Organisations Operating in a non-KM Environment  | 239 |

|   |            |
|---|------------|
| <b>6.3.7 Difference between Organisations in KM Environments<br/>        and Organisations in Non-KM Environments</b> | <b>240</b> |
| <b>6.4 Summary</b>  | <b>241</b> |
| <br>  |            |
| <b>Chapter 7: Contribution to Knowledge, Limitations and Areas for<br/>Further Research</b>                           |            |
| <b>7.1 Introduction</b>   | <b>243</b> |
| <b>7.2 Contribution to Knowledge</b>  | <b>243</b> |
| <b>7.3 Implications for Management Practise</b>   | <b>246</b> |
| <b>7.3.1 Knowledge-Friendly Culture</b>   | <b>246</b> |
| <b>7.3.2 High-Trust Climate</b>   | <b>247</b> |
| <b>7.3.3 Routine Knowledge Sharing</b>  | <b>247</b> |
| <b>7.3.4 High Levels of Job Satisfaction</b>  | <b>248</b> |
| <b>7.3.5 Flexible Organisational Structure</b>  | <b>248</b> |
| <b>7.3.6 Routine Innovation</b>   | <b>249</b> |
| <b>7.3.7 Knowledge-Sharing Based Reward</b>   | <b>249</b> |
| <b>7.3.8 Effective Information Technology (IT)</b>  | <b>250</b> |
| <b>7.3.9 Availability of Time</b>   | <b>251</b> |
| <b>7.4 Limitations of Study</b>   | <b>251</b> |
| <b>7.4.1 Research Context</b>   | <b>252</b> |
| <b>7.4.2 KM vs Non-KM Dichotomy</b>   | <b>252</b> |
| <b>7.4.3 Construct Development</b>  | <b>253</b> |
| <b>7.4.3 Data Collection</b>  | <b>253</b> |
| <b>7.4.4 Instrument Development</b>   | <b>254</b> |
| <b>7.4.5 Contextualising Findings</b>   | <b>255</b> |
| <b>7.4.6 Geographical Scope</b>   | <b>255</b> |
| <b>7.5 Suggested Areas for Further Research</b>   | <b>255</b> |
| <b>7.6 Conclusion</b>   | <b>259</b> |
| <br>  |            |
| <b>References</b>   |            |

## **Appendices**

**Appendix 1: Copy of Questionnaire**

**Appendix 2: Items in Each Construct**

**Appendix 3: Copy of Covering Letter**

**Appendix 4: Published Paper**

**Appendix 5: Published Book Chapter**

## List of Tables

|  |     |
|--|-----|
| Table 2.1: Studies on Factors Affecting KM Success                                       | 20  |
| Table 3.1: Key Features of Positivist and Interpretivist Paradigms                       | 93  |
| Table 3.2: Examples of Major Studies in KM   | 96  |
| Table 3.3: Research Stages, Justification and Outcomes                                   | 105 |
| Table 3.4: Interviewee Profiles  | 111 |
| Table 3.5: Interview Questions and Relevant Studies                                      | 112 |
| Table 3.6: Question Wording Principles   | 117 |
| Table 3.7: Results of Pilot Testing Exercise   | 126 |
| Table 3.8: Questionnaires Distributed and Resulting Responses                            | 128 |
| Table 3.9: Ethical Principles and Application in Research                                | 130 |
| Table 3.10: Reliability of Constructs  | 134 |
| Table 3.11: T-test – Gender vs Perceptions of Success                                    | 135 |
| Table 3.12: T-test – Position in Organisation vs Perceptions of Success                  | 135 |
| Table 3.13: T-Test – Understanding of KM vs Perceptions of Success                       | 136 |
| Table 3.14: ANOVA – Organisational Strategic Focus vs Perceptions<br>of Success          | 137 |
| Table 3.15: Results for Independent Errors   | 141 |
| Table 3.16: Results for Multicollinearity  | 142 |
| Table 3.17: Results for Standardised Residuals   | 146 |
| Table 4.1: Summary of Interview Responses  | 159 |
| Table 5.1: Respondents' Personal Profile   | 172 |
| Table 5.2: Respondents' Role Profile   | 173 |
| Table 5.3: Respondents' Employment Profile   | 174 |
| Table 5.4: Organisational Profile  | 175 |
| Table 5.5: KM Profile  | 176 |
| Table 5.6: Knowledge-Friendly Culture Construct: Mean, Standard Deviation &<br>Frequency | 177 |
| Table 5.7: High-Trust Climate Construct: Mean, Standard Deviation &<br>Frequency         | 180 |
| Table 5.8: Routine Knowledge Sharing: Mean, Standard Deviation & Frequency               | 183 |
| Table 5.9: Job Satisfaction Construct: Mean, Standard Deviation &<br>Frequency           | 185 |

|   |     |
|---|-----|
| Table 5.10: Flexible Organisational Structure Construct: Mean, Standard Deviation & Frequency                     | 187 |
| Table 5.11: Routine Innovation Construct: Mean, Standard Deviation & Frequency                                    | 189 |
| Table 5.12: Knowledge-Sharing Based Reward Construct: Mean, Standard Deviation & Frequency                        | 190 |
| Table 5.13: Effective IT Construct: Mean, Standard Deviation & Frequency  | 191 |
| Table 5.14: Availability of Time Construct: Mean, Standard Deviation & Frequency                                  | 192 |
| Table 5.15: Average Frequency of Responses to Items in Constructs   | 193 |
| Table 5.16: T-test – Awareness of KM vs Perceptions of Organisational Success                                     | 195 |
| Table 5.17: Correlation Coefficients – Knowledge-Friendly Culture vs Perceptions of Organisational Success        | 196 |
| Table 5.18: Correlation Coefficients – High-Trust Climate vs Perceptions of Organisational Success                | 196 |
| Table 5.19: Correlation Coefficients – Routine Knowledge Sharing vs Perceptions of Organisational Success         | 197 |
| Table 5.20: Correlation Coefficients – High Levels of Job Satisfaction vs Perceptions of Organisational Success   | 197 |
| Table 5.21: Correlation Coefficients – Flexible Organisational Structure vs Perceptions of Organisational Success | 198 |
| Table 5.22: Correlation Coefficients – Routine Innovation vs Perceptions of Organisational Success                | 198 |
| Table 5.23: Correlation Coefficients – Knowledge-Sharing based Reward vs Perceptions of Organisational Success    | 199 |
| Table 5.24: Correlation Coefficients – Effective IT vs Perceptions of Organisational Success                      | 199 |
| Table 5.25: Correlation Coefficients – Availability of Time vs Perceptions of organisational Success              | 200 |
| Table 5.26: Result of Research Hypothesis Testing in Sub-samples  | 201 |
| Table 5.27: Stepwise Regression Model for Organisations Operating a KM Programme                                  | 204 |

**Table 5.28: Stepwise Regression Model for Organisations Operating in a  
Non-KM Environment**

## **List of Figures**

|  |     |
|--|-----|
| Fig. 2.1: Corporate Culture Framework  | 29  |
| Fig. 2.2 Maslow's Hierarchy of Needs (1970)  | 46  |
| Fig 2.3: Typical components in stage model of innovation                               | 57  |
| Fig 2.4: Key characteristics in contemporary conceptualisation of innovation processes | 58  |
| Fig 2.5 IT for Managing Knowledge  | 77  |
| Fig. 3.1: Objective – Subjective Continuum   | 95  |
| Fig 3.2: The Framework of Social Theory  | 99  |
| Fig 3.3: Research Protocol   | 107 |
| Fig 3.4: Scatterplot - Organisations operating in a KM environment                     | 143 |
| Fig 3.5: Scatterplot - Organisations operating in a non-KM environment                 | 143 |
| Fig. 3.6: Histogram - Organisations operating in a KM environment                      | 144 |
| Fig. 3.7: Organisations operating in a KM environment                                  | 144 |
| Fig. 3.8: Histogram - Organisation operating in a non-KM environment                   | 145 |
| Fig. 3.9: Organisations operating in a non- KM   | 145 |
| Fig. 5.1: Factors Associated with Perceptions of Organisational Success                | 207 |



# **Chapter 1**

## **Introduction**

## **1.1 Introduction and Background**

Knowledge is a broad and abstract concept which has dominated philosophical debates for many decades. Recently though, due to the current economic climate which is characterised by high levels of competition, increased globalisation, new technology and changing client demands, organisations are having to turn to new ways of managing their assets in order to improve efficiency and effectiveness (Martensson, 2000). This, coupled with the rise in service sector work which is heavily reliant on knowledge and expertise instead of traditional 'products' (Hislop, 2005), has brought the importance of managing organisational knowledge to the fore.

Organisations have therefore taken an interest in knowledge as a prime asset and as a tool to maintain competitive advantage (Sveiby, 1997). This has led to the growth of the knowledge management (KM) field, first popularised by Nonaka in the early 1990s.

However, KM is a very young discipline (Rubenstein-Montano et al., 2001) where little has been agreed. The lack of agreement, in both academic and practitioner circles, stretches from actual definitions of knowledge, definitions of KM itself, approaches to KM as well as the components of KM activities (Wilson, 2002a). The diffuse and relatively scattered perspectives and concepts of KM mean that the label 'KM' encompasses many different approaches (Scholl et al., 2004).

Early KM literature and initiatives tended to focus on the information technology side of KM where the aim of KM programmes was to collect and store organisational knowledge onto centralised databases (Malhotra, 2000). Second generation KM however, came to the realisation that development of IT systems does not guarantee KM success due to the complexities involved in sharing tacit knowledge (Huber, 2001, McDermott, 1999) and the multi-dimensionality of KM processes. Thus, KM initiatives became more focused on softer elements of KM such as the promotion of knowledge transfer, the

effects of organisational culture on KM, employee perceptions and attitudes towards KM programmes and innovation as a desired outcome of KM.

On a personal level, my experience in the financial services industry, which spanned over seven years, fuelled my interest in the KM discipline. In this period, I was able to experience first hand, the implications of poor management of knowledge where information, knowledge and expertise are either consciously withheld or are unavailable to the right people at the right time. This meant that tasks and processes either took longer to complete or were completed to a sub-optimal standard. The implications of this are multiplied given the complex nature of the financial services industry where constantly changing regulations require efficient information and knowledge transfer from senior management to operational level employees, as well as fast adaptation to new ways of working.

The financial services industry is regulated by the FSA (Financial Services Authority) which is an independent body responsible for all financial institutions in the UK. The FSA regularly issues many guidelines by which financial institutions must abide. Furthermore, there are many EU directives which need to be taken into consideration by organisations operating in the financial services sector (Jones, 2003). Thus, financial service institutions are guided by highly dense and complex rules which are constantly updated and changed. This forms a rich area for KM research enabling the implications of lack of management of knowledge on how organisations operate to be recognized.

## **1.2 Justification for the Study**

Other than a personal motivation to understand the implications of KM in the financial services industry, two main reasons justify the pursuit of this research.

Firstly, owing to the relative newness of the KM field, there are many areas that need to be explored in greater depth. Although critical success factors for KM have been researched, the majority of studies in this area tend to look at the

relationship between singular phenomena and KM (e.g. Bock and Kim, 2002, Carter and Scarborough, 2001, Chou et al., 2005, Gold et al., 2001, Hall and Goody, 2007, Johannessen et al., 1999). This research however intends to develop a unifying framework of critical success factors that impact on KM programmes, thereby giving a more comprehensive picture of the pertinent issues in managing KM initiatives.

Furthermore, research in the KM field has been characterised by an abundance of theoretical or practitioner based case-studies and there has been a call for more rigorous empirical research in the area (Chauvel and Despres, 2002, Scholl et al., 2004). Thus, this study will use rigorous and robust research methods and will utilise previously validated questionnaires in order to increase the validity and reliability of findings. This will therefore make an important contribution to the understanding of the requirements of KM in the financial services sector.

### **1.3 Aims and Objectives**

Given the breadth of the KM field, it was important to focus this research on a specific area in order to be able to reach useful conclusions. Thus, the aim of this research is:

- **To establish whether KM makes a positive contribution to perceptions of organisational success.**

To meet this aim, two specific research objectives have been developed.

- **To identify the critical success factors for KM programmes**

This objective will establish the factors that have an impact on KM programme success. Previous studies in the KM field have tended to be purely theoretical or practitioner based case-studies which lack rigorous empirical research (Chauvel and Despres, 2002). This objective will therefore seek to develop a

unifying framework of critical success factors based on previous literature, views of key informants in the industry as well as responses from a large scale survey to employees in financial service institutions.

- **To establish which of these critical success factors has an impact on perceptions of organisational success.**

Once a comprehensive view of factors critical to KM success is developed, this objective will establish which of these factors has an impact on perceptions of organisational success. This is pertinent as it informs the KM literature on which factors actually make more of an impact on perceptions of organisational success and should therefore be awarded more management attention.

#### **1.4 Methodology**

The choice of research methodology adopted for this study was informed by the objectives of the research. A mixed methods approach was deemed most suitable as it allowed the exploration and refinement of factors impacting on KM success through one-to-one interviews which led to the development of research hypotheses. This method reduced researcher bias and allowed key players in the field to validate the factors developed from the literature. Confirmation of these factors was then established through the testing of these hypotheses utilising a large scale survey.

Furthermore, previous studies in this field have tended to use this approach (Chauvel and Despres, 2002), and although this did not affect the choice of methodology, it was viewed as beneficial to conform to the norms of the discipline.

Following a review of key literature, the first phase of primary data collection was exploratory and inductive, aligned to the interpretivist paradigm. Semi-structured interviews were used with key players in financial services organisations who had KM programmes. Using latent content analysis,

responses from interviews were developed into themes enabling the identification of the main factors that were viewed as critical to KM success. This informed the development of the next stage of the research.

In the second phase of data collection, a questionnaire was developed incorporating the variables identified from the extant literature and confirmed from the interviews. In order to increase validity and reliability of the findings arising out of this survey tool, previously validated questionnaires were used. This also minimised researcher interpretation and ensured broad coverage of the factors, allowing the complex nature of the constructs to be empirically captured and the research objectives to be answered.

## **1.5 Contribution to Knowledge**

Through this research, several contributions are made to the existing body of knowledge in the KM field. These are split into contributions to KM theory and contributions to management practise, which are more applied in nature.

### **1.5.1 Contributions to Theory**

A number of specific contributions to KM theory have emerged as a result of this research. Firstly, this study has established that there is a distinct difference in perceptions of organisational success for organisations operating in a KM environment compared to organisations operating in a non-KM environment. This was previously an unexplored area in KM research and therefore this finding is an important addition to KM theory.

This research has also confirmed some of the factors identified by previous literature as critical to KM success whilst disconfirming others (e.g. Bock and Kim, 2002, Chourides et al., 2003, Gray, 2001, Hall, 2001, Holsapple and Joshi, 2000). This therefore adds another dimension to the study of critical success factors for KM which is directly applicable to the financial services industry.

Moreover, this research has identified the portfolio of factors that are associated with perceptions of organisational success in organisations operating in KM environment and those operating in a non-KM environment. The combination of factors for the two groups of organisations is different indicating that the introduction of KM into an organisation changes employees' views of organisational success thereby enforcing a new and more complex management agenda.

At a more general level, this research has adopted a rigorous and robust research design, which allows for the research to be replicated in other industries enabling for cross-sector comparisons to be made (Scholl et al., 2004). This is a unique contribution to knowledge in this field.

### **1.5.2 Contributions to Management Practise**

On a more applied level, this research has made contributions to management practise by identifying the factors that are most likely to affect the success of KM initiatives as well as the overall perceptions of success in an organisation.

By establishing the factors, viewed by key players in the field, as critical to KM success, management are more aware of the implications of these factors on KM success and can therefore focus attention on these factors in order to facilitate the survival and development of the KM programme.

Another significant contribution of this research to management practise is the identification of predictors of success for organisations operating in a KM environment compared to organisations operating in a non-KM environment. This study has established that routine knowledge sharing and knowledge-sharing based reward are the largest predictors of organisational success for organisations operating in a KM environment. The predictors of success for organisations operating in a non-KM environment are effective information technology and high-trust climate. This therefore points to a completely

different focus for the respective organisations (Nonaka, 1991) which will have far reaching implications and will impact on many management decisions.

## **1.6 Thesis Outline**

This thesis comprises of seven chapters in total. This chapter introduces the topic and provides a background to the research. Details of each of the other six chapters are provided below.

### **1.6.1 Chapter Two: Literature Review**

This chapter provides the context and rationale for studying KM in organisations. The chapter begins by establishing the definitions of KM and KM programme to be used in this thesis as well as justifying the distinction between organisations aware of KM and organisations unaware of KM that is drawn as a part of this research. Next, the concept of critical success factors and the complexities surrounding the definition of success are considered. The chapter then moves on to explore the literature regarding the critical success factors for KM as well as a brief discussion of measurement issues in the KM field.

### **1.6.2 Chapter Three: Methodology and Methods**

This chapter has the twin aims of discussing the methodological approach used in this research as well as detailing the methods employed in order to achieve the results.

The chapter begins by providing the rationale for the methodological approaches used and positioning the research within established methodological frameworks. The robustness of the chosen methodology and research design is also defended. This therefore provides a critical review of the methodological choices available, and their potential impact on the results.



The chapter then moves on to discuss the actual research methods employed clarifying the development of the theoretical framework through successive stages underpinning this research. The procedures followed are outlined to clarify and justify the methodological rigour of the research. The processes that underpin the research design, including triangulation, ethical considerations, piloting and sampling are discussed, and details of the design of the research stages are provided. The analysis procedures undertaken to ensure the validity and reliability of the results are also presented.

### **1.6.3 Chapter Four: Qualitative Results**

This chapter presents the results and analyses of the qualitative primary data collected in the study structured around the objectives of the research. The output and analyses of the interviews are presented and results from this exploratory stage led to the development of research hypotheses to be tested in the confirmatory stage of the research.

### **1.6.4 Chapter Five: Quantitative Results**

This chapter presents the quantitative results and analysis of the questionnaire data using correlation and regression analysis. This chapter presents the results only; discussion of the findings in relation to the research questions, the extant literature and implications of the results are addressed in depth in Chapter 6.

### **1.6.5 Chapter Six: Discussion of Results**

This chapter evaluates the results of this study in line with both the research objectives and the extant literature in the field. The specific research objectives are addressed in turn and the results analysed in line with these.

### **1.6.6 Contribution to Knowledge, Limitations and Areas for Future Research**

This chapter presents the contributions to knowledge emerging out of this study are presented as well as the implications for management practise. To conclude, the limitations of the study are discussed and justified and the areas for future research identified.

### **1.7 Summary**

This chapter has laid the foundations for the development of the thesis. The chapter began by a brief outline of the topic and background for the study and justification for the research was also presented. Once the aims and objectives of the research were established, a brief description of the methodology was provided and the contribution to knowledge was outlined. The chapter ended with a description of the structure of the thesis. The thesis now proceeds with an in-depth analysis of the literature.

## **Chapter 2**

### **Literature Review**

## **2.1 Introduction**

The aim of this chapter is to present a critical review of the existing body of knowledge on critical success factors for KM. This is conducted bearing in mind the objectives of this research which are:

- **To identify the critical success factors for KM programmes.**
- **To establish which of these critical success factors has an impact on perceptions of organisational success.**

The chapter will begin with a definition of the terms KM and KM programme, leading onto a discussion of the literature regarding debates around general critical success factors. This will be followed by an introduction to the factors affecting KM success as portrayed in the literature, highlighting the broadness and complexity of these factors. This will then lead to a detailed review of the identified constructs.

The chapter concludes with a discussion of measurement issues and their impact on the identified constructs.

## **2.2 Definitions of KM and KM Programmes**

Any review of the KM literature will lead to an extensive list of varying and at times, conflicting definitions of the terms KM and KM programme (Blumentritt and Johnston, 1999, Housel and Bell, 2001). For example, Rubenstein-Montano and Liebowitz et al (2001) define KM as the “creation of value from an organisation’s intangible assets” (p5), whereas O’Dell and Jackson (1998) view KM as a “conscious strategy of getting the right knowledge to the right people at the right time and helping people share and put information into action in ways that strive to improve organisational performance” (p4). This highlights the different perspectives that have been taken to KM.

The terms “knowledge” and “knowledge management” encompass a variety of concepts and have been described as “one of the most ramified topics in the business lexicon (Despres & Chauvel, 2000, p55) and which for many firms are

ambiguous, lacking a clear definition, and therefore pose a real challenge in operationalising the concept in the day-to-day workings of the organisation (OECD, 2004).

KM research is still grappling with definitions of tacit and explicit knowledge, differences between information and knowledge, classifications of knowledge and sources of knowledge (Blumentritt and Johnston, 1999). This is problematic in that there is limited unified understanding of the concept as a whole, and the absence of a systematic, clear and agreed terminology ultimately leads to varying expectations of outcomes (Mouzughi et al., 2005).

Furthermore, the details of what is entailed in a KM programme vary significantly depending on the organisation in which the programme is being introduced as well as the required outcomes of the programme. For instance, some organisations pursue KM programmes in order to capture existing explicit knowledge and therefore are highly focused on introducing suitable IT facilities that allow efficient knowledge storage and dissemination. Other organisations are more interested in encouraging employees to share tacit knowledge and therefore focus on developing an organisational culture which fosters knowledge sharing and transfer. Increased organisational innovation may be another desired outcome of KM programmes and this would require organisations to encourage interaction and co-operation amongst employees in order to develop new creative ideas thereby leading to the generation of new knowledge (Davenport et al., 1998, Nonaka, 1991).

Arguably, all financial service organisations manage knowledge; however, making a formal effort to manage knowledge indicates that there is an appreciation of the importance of knowledge management for the success of the organisation and therefore provides a distinctive approach differentiating between organisations that formally manage knowledge and those that do not (see 2.2.1 below). Hence, given the debate around what constitutes KM and a KM programme, it is very difficult to arrive at a precise and universally agreed definition of KM or KM programme (Kakabadse et al., 2003, McKenzie and Van Winkelen, 2004). For the purposes of this thesis though, and bearing in mind the objectives of the research; any attempt to formally manage knowledge,

either in its tacit or explicit form will be considered a KM programme. This is considered appropriate given the lack of agreement in the KM literature regarding what constitutes a KM programme.

### **2.2.1 Awareness of KM vs Non-Awareness of KM Dichotomy**

One of the central tenets of this research is the distinction between organisations that are aware of formal efforts to manage knowledge and those that are unaware of formal attempts to manage knowledge.

Although it is accepted that all organisations have knowledge which they manage by some means, the comparison between organisations that show an awareness of formal concerted efforts to manage knowledge and those that do not, allows for the development of a comparative base between the two groups of organisations in order to assess whether or not the critical success factors for organisations that are aware of formal KM efforts are different to organisations that are unaware of formal efforts to manage knowledge. This is a common approach in business research and has been used widely in KM research (McAdam and Reid, 2000b). This also addresses the second objectives of this research.

Furthermore, much of the KM literature discusses the emergence of the 'knowledge economy' (Davenport and Prusak, 1998, Grant, 1996, Hislop, 2005) and its impact on the strategic approach taken by organisations. Fundamental to dealing with the knowledge economy is the concept of KM. Yet, not all organisations have grasped the idea of KM at the same rate or in the same manner (Hislop, 2005). This difference in uptake of KM is best exemplified by the comparison between public and private sector approaches to KM where public sector organisations have lagged behind and are just beginning to adopt KM as a method of increasing competitive advantage within their departments (McAdam and Reid, 2000b, McAdam and Reid, 2000a). Thus, this gives further credence to the study of the factors which impact on success in organisations given their awareness of KM. It is important to note at this stage that for the purposes of this thesis, the nomenclature that will be used

for the two groups of organisations is “organisations operating in a KM environment” and “organisations operating in a non-KM environment”.

### **2.3 General Critical Success Factors**

The concept of critical success factors was first introduced in the 1960's by Daniel (1961) and was later popularised in the 1970's by Rockart (1979). Since then, many definitions of critical success factors have been proposed but one of the most universal definitions is provided by Boynton and Zmud (1984) who define critical success factors as “those few things that must go well to ensure success” (p17). This definition applies to organisations operating in both public and private sectors and encompasses the many elements that may impact on organisational performance.

A number of techniques have been used in the identification of critical success factors. These tend to focus on three levels. The first or macro level deals with the economic socio-political environment, whilst the second deals with the industry environment and the last deals with the firm specific environment (Leidecker and Bruno, 1984). All three levels have the potential of identifying factors that can impact on the effectiveness of the organisation. For example, firm specific analysis allows the firm to focus on the internal aspects that influence success whilst industry level analysis allows firms to assess how the overall industry is operating in order to evaluate organisational strategy. Finally, economic socio-political analysis goes beyond the confines of the firm and industry to assess how the internal workings of the organisation and the industry as a whole may be impacted by the larger environment in which they operate.

More recently though, the utility of the concept of CSFs has been debated based on the unit of analysis used as well as the necessity and sufficiency of the concepts identified (Markus and Robey, 1988). Markus and Robey (1988) argue that the level of analysis (either micro or macro) will impact on the phenomena identified as some phenomena considered at the micro level would have a

different impact when considered with a macro focus. Thus assuming that CSFs can be generalised across levels of analysis may lead to incorrect conclusions. Furthermore, establishing whether any given CSF is both necessary *and* sufficient is critical in establishing a causal relationship between antecedents and outcomes (Markus and Robey, 1988). Hence, any factors identified need to be necessary and sufficient in order to ensure accurate analysis of the relationship being studied. For the purposes of this research, the three staged research design coupled with the continuous development of the theoretical framework ensured that the factors identified were indeed both necessary and sufficient to ensure accurate analysis.

The underlying premise of critical success factors is that decisions made using the concept are more effective because they are based on information that is specifically linked to the organisation's strategic goals (Cooke-Davies, 2002). Critical success factors are an explicit representation of key performance areas in an organisation and therefore assist in the identification of priorities for allocation of resources and organisational decision making.

Even given the criticisms of the concept of CSFs as discussed above, critical success factors proved their usefulness in aiding decision making in the field of information technology. Once the benefits of critical success factors were realised, other industries borrowed the concept and applied it to their own fields. A prime example of an industry where critical success factors have become important is that of project management where the concept has gained huge popularity and is used widely (Field and Keller, 1998).

Thus, given the importance of critical success factors and their usefulness for organisations in achieving their organisational plans and objectives, it is understandable and logical that they are applied to a large number of industries and projects. One such field that may benefit from the application of the concept of critical success factors is KM. This is because knowledge has no confines and therefore, KM operates at the firm specific level, the industry level as well as the economic socio-political level. Thus, the application of the concept of critical success factors is very relevant to the KM field.



## **2.4 Success and KM**

Given the importance of critical success factors as discussed above, this lends credence to the application of this concept to the field of KM. However, in order to be able to examine the critical success factors identified in the literature independently, an analysis of 'success' of KM must be undertaken first.

The importance of understanding the necessary conditions for a successful KM programme is an issue that has been recognised by many researchers in the KM literature (Davenport et al., 1998, Malhotra, 2002, Shan and Scarborough, 1999). Yet, despite the saliency of this topic, the literature fails to arrive at a consensus for defining success (Davenport et al., 1998, Shan and Scarborough, 1999).

Primarily, this is because success is an ambiguous term especially when applied to a broad concept such as KM. It is argued that knowledge spans many levels of analysis. A domain perspective of knowledge analyses content; a decision-making perspective analyses use and impact on individuals; an organisational perspective investigates creation, memory and use of knowledge within a firm; and a market perspective explores the exchange and sharing of knowledge between individuals and organisations (Gold et al., 2001, Malhotra, 2002). Thus to try to establish a unified model of a successful KM programme is a challenging task as organisations will view success depending on their respective desired outcomes of the programme. Hence, what is deemed a success for one organisation maybe viewed as a failure for another (O'Dell et al., 1999).

Despite the difficulties and challenges in developing a framework for successful KM, an identification and evaluation of the key pre-conditions for a KM initiative to flourish is viewed as critical (Gold et al., 2001). Perez & Hynes (1999) contest that analysing whether a KM programme has a predisposition to succeed can be achieved through focusing on the initiative itself. They argue that continuous analysis of a programme allows for early identification of

weaknesses and therefore an opportunity for remedial action (Perez and Hynes, 1999).

In a survey of 31 KM projects, Davenport & De Long et al. (1998) identify two levels at which KM projects contribute to success. At the more achievable level are those projects that impact on a particular process or function within an organisation. Examples of these include new product development, software development and patent management. The link between the success of KM projects in these limited areas and overall organisational success however, has yet to be established. The more ambitious KM projects aim to influence the whole of the organisation through changing the way the firm operates or even facilitating firm survival. These types of projects are very rare (Davenport et al., 1998).

Other projects attempt to distinguish between the objectives for KM initiatives. Some organisations view KM as merely a route to operational success, where there is no need to establish a link with overall organisational performance, while other organisations view KM as being at the core of strategy and a visionary approach is critical (Armistead and Meakins, 2002).

Further, due to the variable nature of KM programmes it is difficult to assess performance purely on economic returns (Davenport and Volpel, 2001) especially in the initial set-up years, and it is more useful to monitor a number of proxy variables to reflect the development of the programme (Arora, 2002, Davenport et al., 1998). Growth in the resources attached to the project, including people and money; growth in the volume of knowledge content and usage; survival of the project without the support of one or two individuals; and some indication of financial return are the factors identified by Davenport & De Long (1998) as proxy variables indicating success of the projects. Although these variables are used for assessing the effectiveness of business change projects, an obvious flaw is evident in that an increase in resources (money, people or time) is not necessarily an indicator of success but may well be an indicator of the reverse. Others go further, arguing that the success of KM projects should be judged on the recognition of invisible assets that add value to

the organisation through innovation and the fostering of a knowledge sharing culture (Holsapple and Joshi, 2000, Martensson, 2000).

Given the complexities associated with the definition of success as highlighted above, for the purposes of this thesis, self-reported success will be used in order to assess whether or not KM projects are perceived to impact on overall organisational success. There is support in the management literature for the use of objective self-reported measures (Creswell and Plano Clark, 2007, Dess and Robinson, 1984, Perez and Hynes, 1999) and this is common practise in the discipline. Thus the use of these self-reported measures in this research is considered a fair representation of an organisation's perceptions of its levels of success.

## **2.5 KM Critical Success Factors**

Although KM is a young discipline (Moffett et al., 2003), there has been a lot of research into the various aspects of facilitating a successful KM programme. Researchers have investigated the need for KM (Davenport and Prusak, 1998, Nonaka and Takeuchi, 1995), the uses of KM (Despres and Daniele, 1999), the tools necessary for KM (Martensson, 2000) as well as the actual management of KM programmes (Holsapple and Joshi, 2000).

Given the breadth of literature on the antecedents to successful KM, it is important for this research to identify the factors that are both necessary and sufficient to establish the relationship between perceptions of success and KM. The table below highlights, in chronological order, the studies carried out on factors affecting KM success. Although this is not a comprehensive list of all studies carried, it gives an indication of the breadth of literature in this area.

Table 2.1: Studies on Factors Affecting KM Success

| Date | Title  | Author(s)                   | Factor(s)   |
|------|--|-----------------------------|---|
| 1986 | What you Need to Know About Organizational Culture.  | Schein                      | Culture   |
| 1991 | The Knowledge Creating Company   | Nonaka                      | Knowledge sharing, Culture, Reward                                  |
|      | Corporate Climate  | Furnham                     | Climate   |
| 1993 | Post Capitalist Society  | Drucker                     | Innovation, Knowledge sharing                                       |
| 1994 | What's Mine Is Ours, Or Is It? A Study Of Attitudes About Information Sharing                              | Constant, Kiesler & Sproull | Knowledge sharing, Reward   |
| 1995 | The knowledge Creating Company: How Japanese Companies Create the Dynamics of Innovation                   | Nonaka & Takeuchi           | Knowledge sharing, Reward, Innovation, Organisational structure, IT |
|      | Wellsprings of Knowledge: Building and Sustaining Sources of Innovation                                    | Leonard-Barton              | Innovation  |
| 1996 | Understanding and Managing Organizational Behavior   | George & Jones              | Culture   |
|      | Knowledge Management and Organizational Design   | Myers                       | Organisational structure  |
|      | Creating a Climate and Culture for Sustainable Organisational Change                                       | Schneider, Brief & Guzzo    | Climate   |
|      | The Knowledge Advantage  | Prusak                      | IT  |
| 1997 | The Knowledge-based Organisation: An International Survey  | Chase                       | Culture   |
| 1998 | Twenty Questions on Knowledge in the Organisation  | Young                       | Culture   |
|      | Successful Knowledge Management Projects   | Davenport & DeLong          | Culture, Reward, IT   |
|      | The Role of Tacit Knowledge in Group Innovation  | Leonard & Sensiper          | Innovation  |
|      | The State of Notion; Knowledge Management in Practise  | Ruggles                     | Knowledge sharing   |
| 1999 | Aspects of Innovation Theory Based on Knowledge Management   | Johannesen, Olsen & Olaisen | Innovation  |
|      | Possession is Nine Tenths of the Law: Managing a Firm's Knowledge Base in a Regime of Weak Appropriability | Boist & Griffiths           | Reward  |
|      | Knowledge Management(s)  | Despres & Daniele           | IT  |
| 2001 | Knowledge Management: An Organizational Capabilities Perspective   | Gold, Malhotra & Segars     | Culture, Organisational structure                                   |
|      | Stimulating Lifelong Professional Growth by Guiding Job Characteristics                                    | Heijden & Brinkman          | Job satisfaction  |
|      | A Confirmatory Factor  | Mak & Sockel                | Job Satisfaction,   |

| Date | Title   | Author(s)                          | Factor(s)   |
|------|---|------------------------------------|---|
|      | Analysis Of IS Employee Motivation and Retention  |                                    | Motivation, Retention                                       |
|      | Organisational Climate and Corporate Performance: An Empirical Investigation                              | Kangis & Williams                  | Climate   |
|      | Assessing Knowledge Management Initiative Successes as a Function of Organizational Culture               | Riberie                            | Culture, Knowledge sharing                                  |
|      | Overcoming Cultural Barriers to Sharing Knowledge   | McDermott & O'Dell                 | Culture, Knowledge sharing                                  |
|      | Towards a Second Generation of KM? The People Management Challenge  | Carter & Scarborough               | Knowledge sharing, HRM                                      |
|      | Social Exchange for Knowledge Exchange  | Hall                               | Knowledge Sharing, Reward                                   |
|      | Transfer of Knowledge in Knowledge Management Systems: Unexplored Issues and Suggested Studies            | Huber                              | Knowledge sharing, IT, HRM, Reward                          |
|      | Review: Knowledge Management and Knowledge Management Systems: Conceptual Foundations and Research Issues | Alavi & Leidner                    | IT  |
| 2002 | Managing Effective Knowledge Transfer: An Integrative Framework and Some Practise Implications            | Goh                                | Knowledge sharing, IT                                       |
|      | Breaking the Myths of Rewards: An Exploratory Study of Attitudes about Knowledge Sharing                  | Bock & Kim                         | Knowledge sharing, Reward                                   |
| 2003 | Foundations and Applications of a Knowledge Management Scan   | Van Den Hooff, Vijvers & De Ridder | Culture, Organisational Structure                           |
|      | Knowledge as a Contingency Variable: Do the Characteristics of Knowledge Predict Organisational Structure | Birkenshaw, Nobel & Ridderstale    | Organisational Structure                                    |
| 2005 | Knowledge Management in Organisations   | Hislop                             | Knowledge sharing, Organisational Structure, Innovation, IT |
| 2006 | Storing and Sharing Knowledge   | Coakes                             | Knowledge sharing, IT                                       |

Analysis of findings from these studies formed the first stage in development of the theoretical framework for this research. The studies pointed clearly to eight distinct factors that had an impact on KM success, either directly or indirectly. Other factors were also identified, such as HRM or market trends but there were limited studies as to the relevance of these factors as well as limited empirical support for a relationship between these factors and KM success. Thus these

factors were not included in the research. The eight identified factors, coupled with the researchers' own observations of the importance of time for KM success provided the nine factors that were used as the basis for interviews with key players in the industry.

Hence, the variables identified in the literature as well as from researcher observation as impacting on the success of KM programmes fall under nine themes that can be grouped into three generic influences, namely: environmental, managerial and resource influences. Although this classification has been borrowed from Holsapple and Joshi (2002, p268), the factors within each category are different. The original research by Holsapple and Joshi (2002) was based on a Delphi method with academics and practitioners (n=31) between 1997 and 1998, and referred to factors such as control, measurement, markets and technology. Given that the Delphi method utilised previous literature which was deemed quite dated for the purposes of this research, the three-fold framework suggested by Holsapple and Joshi (2002) was used as a starting point and only the labels were borrowed.

Thus, environmental influences, covered in part one of this research, include culture, climate, knowledge sharing and job satisfaction. Environmental influences refer to factors that are in the surrounding environment of the organisation and that cannot be quickly changed. Things such as culture, climate, the knowledge sharing attitude of oneself as well as that of colleagues, and the levels of satisfaction with the job will all have an effect on people's attitudes to KM initiatives.

Part two; managerial influences, include organisational structure, innovation and reward. As the name suggests, managerial influences refer to those resources that are directly under the influence of management. Primarily, issues such as how the organisation is structured as well as how the resources within the organisation are deployed will be considered.

Finally, resource influences discussed in part three covers information technology and time. The section deals with the actual resources that can either

help or hinder KM efforts. Although time was not identified in the literature as a factor affecting KM success, it was added based on the researchers' own observations on the importance of time for KM success. This will be confirmed in the interviews with key players in the industry.

It is important to note at this stage that the constructs are highly complex involving varying issues and dimensions. Culture for example, is a multi-faceted construct that can be viewed from many different angles. This is also true for climate where some writers argue that culture and climate are one and the same thing while others view them as completely distinct concepts. Organisational structure is another example of a construct that can be analysed from many different perspectives depending on the objectives of the analysis. This bringing together of such broad constructs forms one of the original contributions to knowledge emanating from this study.

Thus, for the purposes of this thesis, the constructs will initially be reviewed from a general perspective and then be reviewed from a KM specific perspective with the aim of identifying how each individual construct can impact on the success of a KM initiative. Relative weightings have been assigned to the construct as some of the constructs are more complex than others and have therefore required more analysis and review. This however, does not reflect on their importance in this particular research as all nine constructs are initially viewed as having equal importance to the success of KM initiatives.

## **Part One: Environmental Influences**

Environmental influences refer to factors in the internal organisational environment that will ultimately have an effect on the way knowledge is captured, stored, shared and disseminated which are the four main processes in any KM programme (Gold et al., 2001, Davenport and Prusak, 1998).

### **2.5.1 Culture**

One of the main environmental influences is the prevalent culture in the organisation as it affects almost all aspects of work. In a survey of 431 organisations in Europe and the US (Young, 1998) culture was found to be the biggest impediment to the success of KM initiatives. The literature on KM is agreed that culture poses one of the biggest problems in the introduction of KM programmes (Chase, 1997). More recently though, there has been a call from researchers in the KM area not to view culture as the main barrier to KM success (Hall and Goody, 2007) but to address the component issues within culture that impact on KM programmes.

Furthermore, it is important to note at this stage that there is a body of literature which argues that culture is an emergent property from the structure and systems of the organisation (Gloet and Berrel, 2003), however, for the purposes of this research, culture will be dealt with as an independent construct which has been the precedent set by many authors in the KM field (for example Davenport et al., 1998, Gold et al., 2001, McDermott and O'Dell, 2001, Van Den Hooff et al., 2003).

Organisational culture, as a concept, emerged through the early works of Hofstede (1980), Pettigrew (1979), Peters (1978), and Deal and Kennedy (1982) amongst others. "Culture is to a human collectivity what personality is to an individual" (Hofstede, 1981, p2). All organisations consist of both formal and informal dimensions and it is not possible to understand an organisation without



developing an understanding of its informal character (Blau and Scott, 1962). Pettigrew (1979) argues that organisational cultures inform people's thinking, reasoning and decision making processes and also notes that at its deepest level, organisational culture defines the way in which an organisation conducts its business (Pettigrew, 1990). The existence of subcultures; where groups of people within an organisation who interact regularly, identify themselves as a different group within the organisation and share values, beliefs and a common set of problems (Van Maanen and Barley, 1984), adds a further dimension to the already complex issue of corporate culture.

Hofstede (1980), based on an extensive research of IBM employees in 66 countries, put forward four specific dimensions of culture:

- Individualism – people's orientation towards self-interest as opposed to an orientation to the interests of the group to which they belong
- Uncertainty avoidance – minimisation of uncertainty as opposed to tolerance of ambiguity
- Power distance – formal and distant relationships between subordinate and superior, as opposed to close and informal relationships
- Masculinity – assertiveness and ambition define success as opposed to caring and nurturing (Wallace et al., 1999).

Although the dimensions identified refer to national cultures, they can all have a direct impact on the management of knowledge. Individualism does not facilitate knowledge sharing which is critical to effective knowledge management. Unwillingness to share knowledge can manifest itself in two ways; information about failures or mistakes, although valuable to the company, may be withheld for fear of lay-offs, and positive knowledge may be withheld in protection of job security and personal value within the organisation (Davenport et al., 1998).

Formal and distant relationships also do not facilitate an open and honest working environment which is necessary for efficient knowledge sharing.

Further, knowledge sharing is dependant on the existence of a caring and nurturing environment in order to facilitate the free and easy exchange of knowledge.

Criticism has however been directed at organisational scientists who adopted a reductionist approach and studied singular phenomena such as leadership or structure as being indicative of organisational culture (Louis, 1983). Loius (1983) contended that these phenomena are only meaningful when considered as part of a complete organisational social system. The work of Louis developed the concept of organisational culture into a more holistic approach to organisational inquiry (Wallace et al., 1999).

Although the concept of organisational culture has been with us for decades and has become a common term in business research, there are a number of issues that have yet to be resolved.

The first issue is the confusion over the definition of organisational culture and its components. It is argued that one may take two routes in an attempt to define organisational culture (Deal, 1986). The first “hard” approach would be to attempt to define, operationalise, measure and test culture in order to link culture to certain outcomes. This is a route supported by many researchers who offer typologies of culture that aid in the definition of the concept. The organisational culture matrix developed by Goffee and Jones (1998) is a prime example of this.

The other route, or the “soft” approach, proposes observing, apprehending and exploring culture (Deal, 1986) in order to be able to predict certain behaviours and outcomes. Schein (1986) argues that for any group or organisation, a substantial group history of accepted values, norms and attitudes needs to develop before a culture is apparent.

Schein (1986) further argues that not all groups or organisations have a culture at all. For a culture to evolve, a relatively stable group of people need to have shared emotionally involving problems in order to formulate the norms and

values necessary for a culture. The term “culture” is often used when it is trusting relationships amongst individuals that is being referred to (Schein, 1986).

A further complication presents itself in that the terms culture and climate are often used interchangeably when in fact they mean different things. This issue will be discussed in section 2.4.2.1.

Finally, culture will have a different impact on organisations depending on their stage in the organisational life cycle (Schein, 1986). New organisations have completely different strategic, operational as well as human resource requirements to those of mature organisations and the dynamic nature of corporate culture will undeniably play an important role in the decisions made in these organisations (Schein, 1986, Rashid, 2004).

#### **2.5.1.1 Culture and KM**

Many researchers have identified a knowledge friendly culture as one of the key factors influencing KM programmes (Van Den Hooff et al., 2003, McDermott and O'Dell, 2001, Gold et al., 2001, Davenport et al., 1998).

The literature on culture in respect of KM is divided into two opposing schools of thought: those who argue that the culture of the organisation needs to be changed and adapted to support the KM programme (Gold et al., 2001, Smith, 2001, Richert, 1999) and those who assert that the KM programme needs to be adapted and modified to suit the existing organisational culture (McDermott and O'Dell, 2001, Davenport et al., 1998).

In the first school of thought, knowledge is seen as integral to the survival of the firm. Culture is not viewed as a barrier to the management of knowledge but rather, the main drivers in the management of knowledge are questions such as what knowledge matters; who needs it and how will it be used (O'Dell et al., 1999). A prime example of an organisation which views knowledge as its central service is PriceWaterhouse Coopers where knowledge is a critical

component of every single one of the services offered and the culture of the organisation revolves around this premise (O'Dell et al., 1999).

An alternative view is that the culture of the organisation dictates the outcome of a KM initiative. This view argues that a knowledge-friendly culture has such a strong influence on all aspects of organisational life, such as levels of knowledge sharing, acceptance of new knowledge and levels of knowledge creation, that it is vital for new programmes to fit into the well-established prevalent culture (McDermott and O'Dell, 2001, Davenport et al., 1998).

It can be argued that there is no one correct way to introduce a KM programme into an organisation, and that the situation the organisation finds itself in will dictate the nature of the KM programme introduced as well as the expectations of outcomes from this programme.

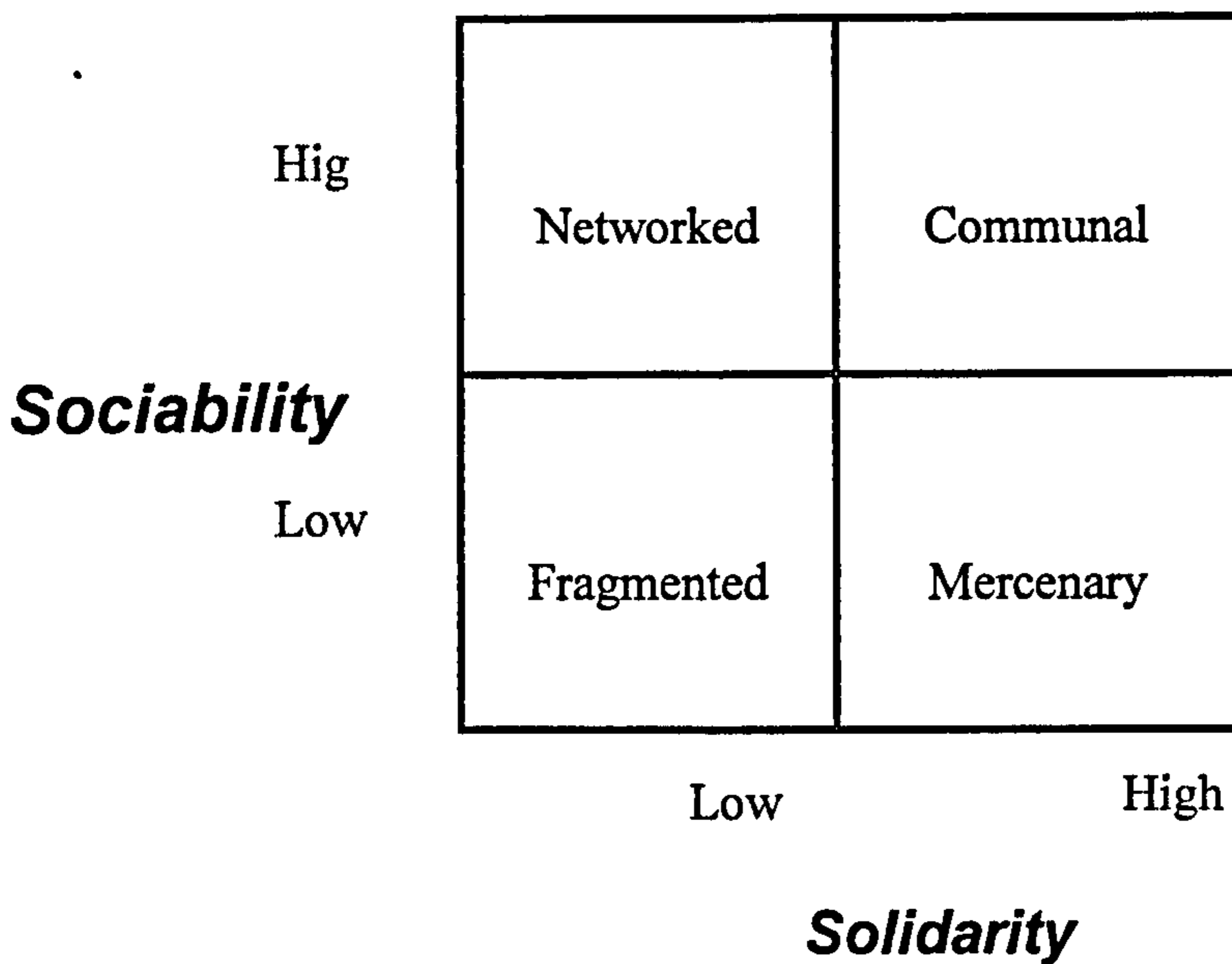
Given that the introduction of a KM programme is in essence a change programme, i.e., the movement away from a present state to a future state (George and Jones, 1996), an understanding of the prevalent organisational culture is a critical success factor for the KM programme. The classification of different types of cultures is important when considering KM success in that research has indicated that organisational culture has an influence on attitude toward organisational change (Rashid, 2004). Also, certain types of cultures are more accepting of change processes while others may not readily facilitate these same change processes (Rashid, 2004).

In an attempt to better understand the concept of corporate culture, Goffee and Jones (1998) developed a framework categorising organisational culture into four main types based on two well-established sociological dimensions – sociability and solidarity. Sociability is a measure of “friendliness” amongst members of a group. Through the naturally occurring friendships, which are a hallmark of sociability, values, beliefs and attitudes are shared among a group. Also, in the sociability dimension, friendships carry no expectation of immediate feedback and actions are taken that benefit others and not necessarily the organisation as a whole. Solidarity on the other hand, is much more

concerned with people’s ability to pursue shared organisational goals and objectives regardless of their impact on particular individuals. The solidarity dimension is not concerned with people’s relationships with each other, but more so that they can work together effectively and efficiently to achieve dedicated organisational tasks.

When the two dimensions of sociability and solidarity are placed on an axes, four different cultures are identified as in figure 2.1 below.

Fig. 2.1: Corporate Culture Framework



**Source:** (Goffee and Jones, 1998. *The Character of a Corporation: How your Company's Culture Can Make or Break your Business*. London, Harper Business)

*Communal* cultures (high sociability, high solidarity): typically, these show strong friendship ties between employees as well as a strong commitment to the achievement of organisational goals. There is a clear awareness of organisational identity and the mission and vision of the company are apparent to everyone. Also, social events are common. This type of corporate culture is typical in new, fast growing or start-up organisations.

*Fragmented* cultures (low sociability, low solidarity): employees in these types of cultures show very limited belongingness to organisational membership, and feel that they work on their own but identify with other professional groups as opposed to the organisation itself. There is limited sharing of information amongst members in this community together with limited social interaction. Professions such as academics and lawyers tend to fit into this category.

*Networked* cultures (high sociability, low solidarity): these types of cultures display strong social connections between members evident in long conversations and frequent lunches. However, there is little commitment to achieve organisational objectives and goals. This type of culture poses obvious problems to managers in that although tacit knowledge is being shared and transferred quite regularly, it is not being utilised to benefit the organisation.

*Mercenary* cultures (low sociability, high solidarity): tend to be focused on winning the marketplace and achieving organisational objectives in an efficient and effective manner. Personal relationships are limited and most communications are business focused. Due to this fact, poor performers are not tolerated and are encouraged to leave or improve their performance to fit in with the norms of this particular cultural type.

It is important to note that the classification of organisational culture into four different types gives the impression of mutual exclusivity, but considering the concept of subcultures discussed previously above, all four culture types can co-exist within the same organisation (Jones et al., 2005).

However, the Corporate Culture Framework model has gained popularity and has been applied to a number of research studies. For example, in a study of 258 Malaysian manufacturing firms, using the Goffee and Jones (1998) organisational culture matrix, Rashid and Abdul Rahman (2004) concluded that not only does organisational culture have an effect on change processes but that the two most receptive cultures to organisational change were the mercenary culture and the networked culture. The mercenary culture adapted well to organisational change because it is driven by achieving goals and objectives and

survival in this type of culture is dependant on meeting goals and objectives set by management. With regard to the networked culture, although employees in this type of culture have a positive attitude towards change, the proposed changes must not affect their fellow workers. Managers need to be skilful in presenting any changes so that they are viewed as being primarily beneficial to the group.

Although this research provides some insight into the importance for managers of identifying the characteristics of the culture prevalent in the organisation, it is limited in a number of aspects. Firstly, it only deals with manufacturing firms which are inherently different from service organisations. Secondly, it is based on Malaysian organisations which have different cultural values and norms to Western organisations. Both these limitations restrict the generalisability of the findings.

In another study of 58 large corporations in the US and Europe, again using Goffee and Jones organisational culture matrix (1998) assessing KM success as a function of organisational culture (Ribiere, 2001), it was found that a KM programme introduced in a communal culture would have the most likelihood of success. In a mercenary culture, a KM initiative focusing on a codification strategy – i.e. people-to-document, was also likely to be successful.

This research supports some of the findings from Rashid and Abdul Rahman (2004) in that a mercenary culture is most accepting of change yet it contests the findings with regard to the networked culture. This is an indication of the influence of the culture in which the research is carried out.

The extant literature on culture discusses knowledge sharing as the main hurdle to be overcome in developing a knowledge-friendly culture. Arguably, knowledge-friendly cultures characterised by higher levels of trust and co-operation amongst employees are more likely to display higher levels of knowledge sharing (Ribiere, 2001). The literature falls short of analysing issues such as people's acceptance of knowledge and new ways of working together with people's motivation, will and endeavour to use the knowledge that is

shared (this is discussed further in section 2.4.3.2). In order to be able to reach a conclusion on whether organisations need to change their culture to fit their KM approach, or design a KM programme that fits their existing culture, research needs to address this obvious gap and focus on people's motivations towards knowledge. Ultimately, if the "cultural soil" is not fertile for a KM programme, cultural change or adaptation of the programme will not achieve the desired results (McDermott and O'Dell, 2001, Davenport et al., 1998).

Although there are differing descriptions of the type of culture that is most receptive to KM programmes such as a mercenary culture or a networked culture (Goffee and Jones, 1998); generally, there is a consensus in the KM field that a knowledge-friendly culture is a pre-requisite for the success of a KM programme (Ribiere, 2001, Davenport et al., 1998). Much of the literature on KM refers to a knowledge-friendly culture as being highly significant in the initiation of a KM programme, (Ribiere, 2001, Davenport et al., 1998).

From the discussion above, it is evident that there is a need to further explore the association between a knowledge-friendly culture and perceptions of organisational success and KM success. As part of the development of the theoretical framework for this research, this association will be tested in the interviews with key players in the industry.

### **2.5.2 Climate**

The concept of organisational climate is generally attributed to the work of Lewin (1951) and was popularised in the 1960s and 1970s through the publications of Litwin and Stringer (1968) and Forehand and Von Gilmer (1964). However, although this concept has been under discussion by researchers from different disciplines such as psychology and management for over five decades, the concept remains ambiguous and controversial (Gray, 2001, Kangis and Williams, 2000, Stetzer et al., 1997, Schneider et al., 1996, Schnake, 1983, Furnham and Gunter, 1993).



In an attempt to operationalise the concept of organisational climate, many researchers revert to the definition provided by Forehand and Von Gilmer (1964, p362) who describe organisational climate as “the set of characteristics that describe an organisation and that (a) distinguish one organisation from another (b) are relatively enduring over a period of time and (c) influence the behaviour of people in the organisation.” This definition will be discussed in more detail below.

Addressing each one of these characteristics separately, it is evident that organisational climate, similar to organisational culture, differentiates between organisations since it is the shared perceptions employees have of basic components of the organisation in which they work, and this separates them from any other group of employees in any other organisation (West et al., 1998, Moran, 1992, Moran and Volkwein, 1992). However, the idea that similar perceptions of working in an organisation are shared by the majority of employees may not be acceptable since it is argued that different departments within an organisation, especially large organisations, will have completely different views of the organisation. Climate is peoples’ perceptions of policies, procedures and day-to-day activities within the work unit (Burke and Litwin, 1992). Hence, the term organisational climate may be invalid but it may be more appropriate to refer to a departmental climate where employees are more likely to share common perspectives of daily activities encountered in the department (Payne, 1990).

The second characteristic noted by Forehand and Von Gilmer (1964), is that organisational climate not only develops over a long period of time, it is difficult to change unless this change happens naturally. Schneider, Brief et al. (1996) agree, noting that organisational climate encompasses many elements of an organisation’s routine activities and add that this makes it difficult to change the climate.

Finally, and most importantly from a KM perspective, organisational climate has an impact on people’s attitudes and behaviours in the organisation. This is

critical in that the success of KM initiatives is highly dependant on employee acceptance of such initiatives and if the organisational climate does not support new programmes or initiatives, KM's chances of success are significantly reduced. The impact of organisational climate on KM success will be discussed in more detail in section 2.5.2.2.

### **2.5.2.1 Organisational Climate vs Organisational Culture**

One of the main obstacles to understanding organisational climate is that it is often associated with organisational culture (Kangis and Williams, 2000) or the terms are used interchangeably (Burke and Litwin, 1992). This is because both of the concepts deal with some element of employee perceptions and beliefs.

...  
An important distinction between climate and culture though is that climate is very much at the forefront of employees' perceptions because it deals with habitual activities whereas culture is much more in the background; dealing with beliefs and values (Kangis and Williams, 2000, Schneider et al., 1996). Moreover, the level of analysis for climate is the group or work unit, while for culture it is the organisation (Kangis and Williams, 2000).

Although both organisational culture and organisational climate deal with employees' shared perspectives of the organisation in which they work, organisational culture deals with a deeper level of perceptions regarding things such as beliefs, values, norms, attitudes and assumptions (Gray, 2001). Organisational climate on the other hand can be viewed as "the sum of the effects of culture" (Gray, 2001 p105).

Organisational climate is concerned with the day-to-day workings and environment in which employees operate. Hence, the level of analysis is the work unit as it is the work unit that the employee is interacting with on a daily basis. The use of the organisation as a whole as the unit of analysis for culture reflects the interaction of the individual with the holistic organisational structure.

One way of avoiding, as opposed to overcoming, the culture vs. climate differentiation is to talk of employee perceptions in general. These will obviously differ depending on department, length of service, seniority, job satisfaction etc. and these perceptions will both influence and be influenced by organisational behaviour (Furnham and Gunter, 1993).

#### **2.5.2.2 Climate and KM**

Having discussed the definition of organisational climate in general as well as the differentiation between organisational climate and organisational culture, it is now possible to discuss the effects of organisational climate on KM success.

...

It is important to note at this stage that there is limited research in the KM literature that has drawn a direct link between organisational climate and KM success. However, considering the impact organisational climate has on individuals' behaviour within organisations, which will in turn have an effect on individual's attitudes towards KM initiatives, it is surprising that KM research has not really focused on the effect of this concept on the success of KM initiatives. This gap presents an avenue for further research.

Hence, of particular relevance to the current study is the apparent failure of KM research to adequately address the link between organisational climate and KM programmes as well as perceptions of organisational success. Considering the importance that the KM literature places on culture, and if it is accepted that climate is "the sum of the effects of culture" (Gray, 2001) and that climate exerts an influence on culture (Burke and Litwin, 1992), then further theoretical developments in the KM field need to be concerned with this topic.

This need is supported by recent research, which has proved that a high-trust climate (where threat, uncertainty and unfairness are minimised and where security, stability and individual contribution are maximised) offers the most favourable environment for project success (Gray, 2001) and overall organisational performance (Kangis and Williams, 2000). Thus, it may be

argued that organisations which display characteristics of high-trust climates will be more receptive to the introduction of KM programmes as there are greater levels of trust and stability with regard to new developments within the organisation as well as reduced levels of perceived threat from changes to work requirements necessary in the introduction of KM programmes. This apparent relationship will be tested further in interviews with key players in the industry.

### **2.5.3 Knowledge Sharing**

Knowledge sharing is the third environmental influence to be discussed for the purposes of this thesis. Many would argue that the sharing of knowledge or lack thereof is a direct result of the knowledge-friendliness of the culture as well as the levels of trust in the climate of the organisation (Carter and Scarborough, 2001, Hall, 2001, Huber, 2001). This is based on the assumption that the management of knowledge is only successful if knowledge is being shared yet knowledge will only be shared under certain environmental conditions and with certain people.

The KM literature theorises over the importance of developing knowledge sharing activities and typically, this literature has tended to concentrate on barriers to knowledge sharing as opposed to enabling factors (Homburg and Meijer, 2001). Yet organisations need to translate these theories into methods for motivating employees to share what they know (Hall, 2001). This can prove problematic because employees have complete discretion over the knowledge that they hold, whether they choose to share it (wholly or partially) or hoard it, is a decision which only they can make.

Further, knowledge sharing as pointed out by Huber (2001) is not a natural human tendency but humans are more likely to hoard knowledge and look suspiciously upon knowledge from other sources. Organisations can try to encourage knowledge sharing behaviours and discourage knowledge hoarding behaviours by offering rewards that may be either tangible or intangible. The issue of reward will be discussed in more detail in section 2.5.7.

### **2.5.3.1 Theoretical Frameworks for Knowledge Sharing**

Research into knowledge sharing draws upon two main theoretical frameworks; namely, social exchange theory and the theory of reasoned action. Each of these will be dealt with separately.

- **Social Exchange Theory**

Social exchange theory derives its roots from economics' rational choice theory which argues that individuals assess alternative courses of action in order to achieve the best value at the lowest cost from any transaction they engage in (Hall, 2001). Social exchange theory differs from classical economic theories in that social exchange theory is based on long-term relationships where individuals are familiar with each other, whereas classical economic theories assume that parties do not and will not know one another (Molm, 2001, p260).

The three common structures to social exchange theory are; 1) direct exchange where two people (actors) are dependant on one another, 2) generalised exchange where there are more than two actors and the dependence is indirect and 3) productive exchange where both actors must co-operate in order to gain any benefit (Molm, 2001, p261).

The concept of exchange is further developed by Nahapiet and Ghoshal (1998) who argue that exchange can only take place if certain conditions are satisfied. These conditions are firstly, that the opportunity exists to make the exchange. Secondly, those involved in the exchange must expect to create value from the exchange and finally, those involved must believe that it is worth their while to be party to the exchange (Nahapiet and Ghoshal, 1998). Building on this theory, managers need to create an environment where exchange is not only possible, but is also effortless and routine. Further, the exchange needs to be seen to help the organisation or the group as well as rewarding the individual in some way.

This leads onto the concept of the “knowledge market” (Nahapiet and Ghoshal, 1998) where knowledge sellers evaluate the benefit of sharing with a potential knowledge buyer. The knowledge buyer on the other hand assesses whether they are capable of offering something in return either now or in the future. The concept of the knowledge market sheds some light on the motivators that must precede any knowledge sharing activity.

- Theory of Reasoned Action

The second theoretical framework upon which knowledge sharing is built is the Theory of Reasoned Action (TRA), which is a generally accepted model in social psychology to explain practically any human behaviour (Fishbein and Ajzen, 1975). This theory is based on the assumption that humans are rational beings and make logical use of information available to them. The theory argues that a person’s behaviour is determined by their intention to perform this behaviour. This intention is determined by both their attitude and their subjective norms. Their attitude, in turn, is determined by their salient beliefs whereas their subjective norms are based on their normative beliefs. Weightings are assigned to each in order to provide a useable formula.

TRA can be useful in explaining the knowledge sharing behaviours of individuals in organisations as it argues that behaviour is only influenced indirectly through the influence of attitudes, beliefs and norms (Bock and Kim, 2002) and hence the link with the impact that a knowledge-friendly culture and a high trust climate may have on knowledge sharing tendencies as both of these affect attitudes, beliefs and norms of individuals in an organisation.

This theory was deployed by Bock and Kim (2002) in order to develop an understanding of knowledge sharing behaviours in an organisational context of 467 employees in four large public organisations in Korea. This study focused on three factors, namely, expected rewards, expected associations and expected contribution. Surprisingly, the results indicated that attitudes towards knowledge sharing were negatively related to expected rewards which many

researchers have identified as a major motivator for knowledge sharing behaviours (Bock and Kim, 2002).

However, although this research provides interesting new results, it is important to note that the unit of analysis used is the individual and no consideration was given to social factors and pressures surrounding the individual. Other limitations of the research include the fact that it was conducted in public sector organisations in only one country. In order to increase the generalisability of the findings, similar research needs to be carried out in private sector organisations as well as differing countries to take into account organisational and cultural characteristics (Bock and Kim, 2002).

### **2.5.3.2 Knowledge Sharing and KM**

Since the very first publication on KM (Nonaka, 1991) knowledge sharing has been at the heart of many of the debates that have taken place, so much so that the terms KM and knowledge sharing have sometimes been used synonymously. Although referred to generally as one element, knowledge sharing can be divided into two parts; the sharing of tacit knowledge and the sharing of explicit knowledge. This differentiation is important as the two types of knowledge are so different and therefore pose completely different challenges.

The regular and routine sharing of tacit knowledge is the foundation for any knowledge creation activity in an organisation (Nonaka and Takeuchi, 1995). In Nonaka and Takeuchi's (1995) five-phase model of the organisational knowledge creation process, it is argued that knowledge creation cannot occur without the interaction of individuals in what is termed a "knowledge field" in order to facilitate the exchange of experiences, emotions, feelings as well as mental models. However, as the nature of tacit knowledge does not lend itself easily to transfer, regular interaction with others is crucial for effective knowledge creation. This is paramount in order to build trusting relationships where knowledge can be effortlessly shared.

Nonaka and Takeuchi's model (1995) focuses on the sharing of tacit knowledge not only as the starting point for knowledge creation, it is also imperative that this is ongoing as the model is cyclical and the process does not end at the cross-levelling of knowledge but returns to the sharing of tacit knowledge once again.

The need for the existence of a social setting where tacit knowledge is routinely shared is also realised by Lave and Wenger (Lave and Wenger, 1991) who introduced the concept of Communities of Practise. Although the concept of Communities of Practise is placed very much within the organisational learning literature, it echoes the same theme as that of knowledge sharing within the KM literature.

Communities of Practise are a group of people with shared relations where newcomers interact with those who have been in the community for longer in order to learn the requirements for whatever task is in hand. The existence of these Communities of Practise is a prerequisite for the existence of knowledge (Lave and Wenger, 1991). Communities of Practise facilitate both tacit and explicit knowledge but are originally aimed at the tacit knowledge due to the difficulties involved in sharing "soft" knowledge.

The sharing of explicit knowledge, on the other hand, has received a considerable amount of coverage in both KM literature and practise. This stems from the early days where KM was closely linked to IT. First generation KM literature was based on 3 key assumptions:

- people are willing to share knowledge freely
- tacit knowledge can be easily converted into explicit knowledge i.e. it is codifiable
- all knowledge can be shared through IT systems (Hislop, 2005)



Thus, much of the early literature was concerned with identifying the correct intranet or devising a corporate yellow pages and so on in order to facilitate the alleged transfer of knowledge. Although these are necessary to enable the smooth flow of information and knowledge in an organisation, this is only a small part of the knowledge sharing concept.

The importance of sharing explicit knowledge rests not on the fact that this knowledge needs to be shared (since this has been agreed), but on the practicalities of providing the right person with the right knowledge at the right time. This is a much more cumbersome task. The real need to share knowledge has been highlighted by many authors (Hislop, 2005, Homburg and Meijer, 2001, Huber, 2001, Maltz et al., 2003) but the challenge lies in equipping people with the resources to identify what knowledge is needed, where it can be found and how it can be used effectively.

Debate in KM field has however developed significantly from first generation KM literature where there was an assumption that people are willing to share knowledge and that knowledge is codifiable and can therefore be transferred via IT systems (Hislop, 2005).

Many surveys have indicated that the main barriers to successful KM initiatives are human related. As KM research has matured, there has been a realisation that a focus on human factors is a necessary antecedent to successful knowledge sharing. This is demonstrated by a number of surveys, for example, Ruggles (1998) in a survey of 431 US organisations found that a culture that inhibited knowledge sharing (i.e. a non knowledge-friendly culture) was one of the main reasons for the failure of KM initiatives. This finding is further confirmed by research by KPMG (2000) and Management Review (1999). All this suggests that knowledge sharing continues to pose a problem for organisations and further research needs to be concerned with this area.

One of the most basic problems involved in the sharing of knowledge is the tacit nature of knowledge. Primarily, organisational knowledge is built up over years through the experience and routine interaction of employees. This knowledge is embodied in people and is personal to their own world-views. Attempting to codify this knowledge is not an easy task since the knowledge is based on values and assumptions which the knowledge holder may not even be aware of and therefore may not be able to articulate (Hislop, 2005). Thus, this cognitive problem reduces the willingness and motivation to share (Huber, 2001).

The tacit-explicit dichotomy is further complicated by the fact that sharing knowledge is not a natural human tendency (Huber, 2001, Davenport and Prusak, 1998). Possession of knowledge provides a power base which employees may not wish to give up, whilst retention of the knowledge allows for competitive advantage within the organisation (Goh, 2002, Huber, 2001).

However, research by Constant et al (1994) suggests that employees respond differently to requests for sharing different types of knowledge as they entail varying social costs and benefits. In a study involving 485 undergraduate and postgraduate students, it was found that subjects were more willing to share tangible information such as a computer programme, because there is a perception that this belongs to the organisation and therefore it has a right to it, whereas they would share personal expertise because there is a perceived personal benefit (either now or in the future). This is an interesting finding because it indicates that the systems supporting the sharing of knowledge need to reflect the type of knowledge being shared. Therefore, an effective, user-friendly IT system is critical in supporting the sharing of explicit knowledge whereas the sharing of tacit knowledge is more complex and is dependant on a co-operative, collaborative knowledge-friendly culture (Goh, 2002). This is in agreement with previous research which indicated that collaborations amongst people is heavily influenced by their friendships and personal contacts (Constant et al., 1994).

In the multi-faceted issue of knowledge sharing, lack of absorptive capacity has been identified as yet another barrier to the successful sharing of knowledge (Hislop, 2005, O'Dell et al., 1999, Zahra and George, 2000). The most widely cited definition of absorptive capacity has been the one offered by Cohen and Levinthal (1990, Moran and Volkwein, 1992) who view it as the firm's ability to value, collate and apply new knowledge from external sources. The argument is that although the possessor of the knowledge may wish to share, the recipient may lack the ability to take in this proffered knowledge. As discussed earlier, knowledge is personal, context dependant and develops over time through the values, norms and experiences of the individual. Therefore, a difference in the backgrounds of the knowledge holder and recipient may lead to a lack of absorptive capacity (Huber, 2001).

Similarly, although the knowledge may be offered by the knowledge holder, the recipient may lack the resources (either time or money) to identify, absorb and apply the knowledge (O'Dell et al., 1999).

It is obvious that there is no easy solution to the knowledge sharing problems faced by organisations. The tacit-explicit dichotomy doubled with issues over ownership of knowledge, social cost and benefit considerations as well as absorptive capacity make this a very complex area in KM research. Although a lot of research has been concerned with identifying the barriers to effective knowledge sharing, there has been limited research into the social-psychological forces that underpin the behaviours related to knowledge sharing (Huber, 2001). However, one common strand in the knowledge sharing literature is the importance of regular and routine knowledge sharing activities in order to facilitate effective knowledge sharing (Bock et al., 2005, Coakes, 2006, Garvey and Williamson, 2002). Even given the issues concerning the tacit / explicit dichotomy, absorptive capacity and knowledge sharing not being a natural human tendency as discussed above, it is argued that routine knowledge sharing efforts through regular interaction leads to more effective knowledge sharing as individuals become more acquainted with others' norms and attitudes (Nonaka and Takeuchi, 1995, Schneider et al., 1996) making it easier to absorb, share and internalise knowledge as well as developing more

trusting relationships thereby increasing the utilisation of the knowledge market concept (Nahapiet and Ghoshal, 1998).

Even given the problematic nature of sharing knowledge discussed previously, it is not something that can be ignored as it is argued that the more routine and stronger the knowledge sharing environment in an organisation, the higher the degree of organisational effectiveness (Yang, 2004). This is ultimately the reason behind the majority of KM initiatives. Yet, although there is a realisation in the KM field that systems have to be put in place to allow for the sharing of tacit knowledge, the focus for organisations has tended to be on the sharing of explicit knowledge. This could be due to the fact that dealing with explicit knowledge which is more tangible is easier and therefore a good starting point for an organisation embarking on a KM project. However, the two types of knowledge complement each other and therefore it is imperative that organisations ensure that enough effort is directed at facilitating an environment where the routine sharing of tacit knowledge can lead to knowledge creation, increased knowledge transfer and ultimately, improved organisational performance.

Based on this, the association between knowledge sharing and KM success as well as perceptions of organisational success will be tested with key informants from industry in the interview stage.

#### **2.5.4 Job Satisfaction**

The fourth and final environmental influence is that of job satisfaction. Job satisfaction is one of a number of other factors that are covered by the overall concept of motivation. Motivating factors can be both intrinsic or extrinsic and differ from one individual to another but may well also differ from one industry to another (Feratt and Short, 1988).

Job satisfaction is typically defined as “a positive emotional state reflecting affective (fondness) attitude or response towards the job situation” (Mak and

Socket, 2001 p.268). Job satisfaction centres around feelings towards a job as opposed to being a personal trait although different individuals will be satisfied to differing degrees by the same job. Thus, the notion of job satisfaction is very important for organisations as it may have an effect on employee performance, absenteeism and turnover (Mowday et al., 1982) which will in turn impact on overall organisational performance.

#### **2.5.4.1 Theoretical frameworks for job satisfaction**

The concept of motivation (with job satisfaction being one of its prime factors) is underpinned by three main theories. These theories are Maslow's Hierarchy of Needs Theory (1970), Herzberg's Dual Factor Theory (1959) and Hackman-Oldham's Job Characteristic Theory (1975). All these theories are based on the premise that the fulfilment of employee needs is an integral part of motivating employees and the motivators need to be a part of the job in order to achieve this.

Although it is not the intention of this thesis to review or add to the debate on motivation, it is important to understand the basic concept in order to make a connection with, and assess its impact on KM. The following is a very brief description of each of the above theories which will then lead to a discussion of the relationship between job satisfaction and KM.

- **Maslow's Hierarchy of Needs**

Abraham Maslow (1970) deals with motivation from a psychological perspective identifying five different levels of needs that must be met in order to achieve motivation. The lowest unmet need must be addressed in order to motivate an individual before moving on to the next level of needs.

The five levels of needs are physiological, safety and security, social, esteem and self-actualisation as depicted in the diagram overleaf.

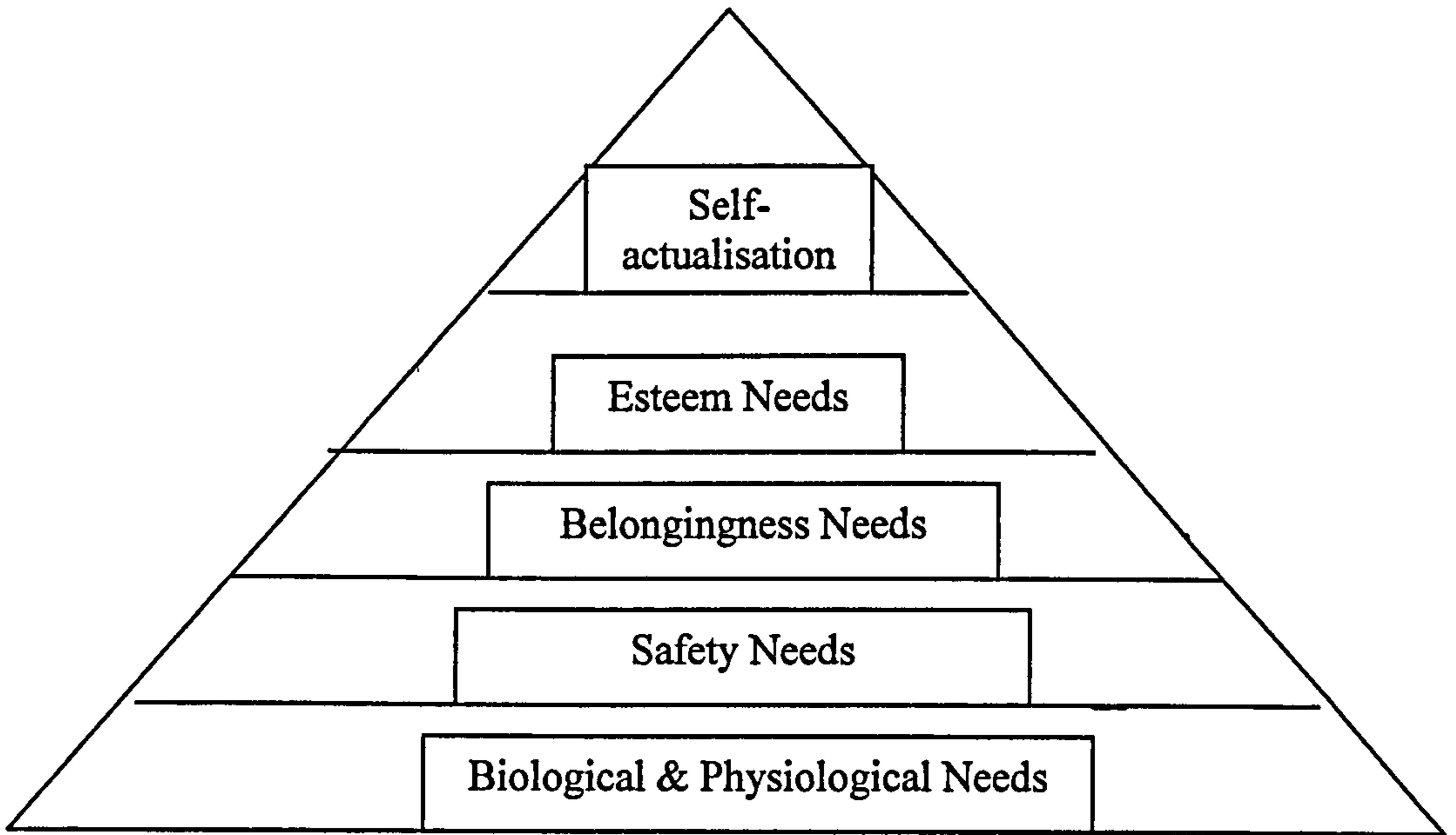


Fig. 2.2 Maslow's Hierarchy of Needs (1970)

- Herzberg's Dual Factor Theory

Herzberg et al (1959) on the other hand believe that job satisfaction is affected by two different sets of factors. The first, hygiene or maintenance factors are necessary but not sufficient in order to motivate individuals. Hygiene factors may include things such as company policy, supervision and working conditions. Thus, according to Herzberg's theory (1959) the absence of these factors can lead to job dissatisfaction, yet their presence does not create satisfaction.

Motivating factors on the other hand are aspects that enrich a person's job. Five motivating factors in particular were identified. These are: achievement, recognition, the work itself, responsibility, and advancement (Herzberg et al., 1959).

Therefore this two-dimensional paradigm relates the motivating factors to the person's relationship with the job, whereas the hygiene factors relate to the situation in which the person does their job.

- **Hackman-Oldham Model**

Hackman and Oldham (1975) began by identifying the “critical psychological states” necessary for high levels of internal motivation. These states are meaningfulness of the job, responsibility for outcome and knowledge of results. It is argued that the presence of these key psychological states leads to better performance, lower absenteeism and turnover as well as higher levels of motivation. In order to achieve these states, five core job characteristics are identified, which are skill variety, task identity, task significance, autonomy and feedback.

Thus the model purports that these five job characteristics lead to desired psychological states which in turn lead to improved performance (Steers and Mowday, 1977). However, not all employees will react in a similar fashion to an enriched job environment. The model suggests that because employees have differing levels of “growth need strengths” (GNS) which is the need for a challenge and accomplishment in a job, those with higher levels of GNS will respond favourably to an enriched environment and those with a lower GNS will react less favourably.

#### **2.5.4.2 Job Satisfaction and KM**

In respect of KM, there has been some research into the effects of job satisfaction on the success of KM initiatives per se. Ultimately, a key to understanding the reasons for the success or failure of KM initiatives is the identification of the preconditions that enable KM to develop and succeed within an organisation (Chou et al., 2005).

Therefore, given that routine knowledge sharing is viewed as one of the main tenets of a successful KM programme (Davenport and Prusak, 1998, Huber, 2001, Nonaka, 1991), knowledge sharing will only occur if people are happy and secure in their jobs (Mak and Sockel, 2001, Mowday et al., 1982) or if there is an expected reward (either intrinsic or extrinsic) to be gained after the sharing process has been conducted. Further, van der Heijden and Brinkman (2001)

argue that higher levels of job satisfaction results in employees who are more capable of building fruitful relationships, and who are more comfortable communicating with others due to their positive outlook on their jobs and the organisation to which they belong.

Although high levels of job satisfaction on their own may not guarantee the success of KM programme, they may be considered one of the preconditions that contribute to the success of such initiatives. Based on this, this research will explore the effects of the levels of job satisfaction on KM success and perceptions or overall organisational success through interviews with key players in the industry.

This section has discussed some of the literature regarding how environmental influences can have an effect on KM. The next section is concerned with how *organisational* factors can have an influence on the success of KM initiatives.

## **Part Two: Organisational Influences**

Organisational influences, as the name suggests, are factors that are within the control of the organisation and therefore can have an impact on the progress of organisational initiatives. The literature indicates that organisational structure, innovation and rewards are key organisational factors that have an effect on KM.

### **2.5.5 Organisational Structure**

The way in which organisations have been structured has changed considerably over the years. In the industrial age, organisations were structured predominantly on a functional basis so that specialised knowledge was grouped together. The aim of this structure was to maximise efficiency, but there was a trade-off as this structure is less flexible and does not optimise cross-functional learning (McKenzie and Van Winkelen, 2004).



This limitation was overcome by the introduction of divisional structures that were grouped around products or services. However, these also presented some limitations as these divisions had very specific mandates and scope of operation which did not allow flexibility for new products or services.

The limitations presented by these hierarchical structures were overcome by the introduction of more flattened structures that allowed for flexibility and increased collaboration (McKenzie and Van Winkelen, 2004) and these structures tend to be more prominent in today's organisations.

However, it is important to note that the definition of 'structure' is vague as structure can mean how employees are grouped together to perform certain tasks, but can also refer to how technology is used to enhance the functions of the organisation. Others also believe that culture (Gold et al., 2001) can be manifested through organisational structure as hierarchical structures tend to reflect rigid organisations and flatter structures indicate more flexible organisations. Reward may also be seen as an element of structure as some organisations use reward to achieve conformance to the desired organisational structure.

For the purposes of this thesis, the term "organisational structure" will be used to mean how employees are grouped together to achieve the firm's objectives. Factors such as technology, culture and reward are considered separately in other parts of the thesis.

#### **2.5.5.1 Frameworks for Organisational Structure in KM Environments**

Since it is argued that knowledge is the key asset for today's organisation (Davenport and Prusak, 1998, Scarborough and Carter, 2000), the structure of the organisation needs to reflect the main task in hand – i.e. to be innovative and flexible (Handy, 1995). In theory, flatter organisational structures allow better access to each individual's core competencies, thereby increasing valued knowledge as well as potential for cross-functional learning. However, there are obvious reservations to this theory in that tapping knowledge competencies

is dependant on individuals' willingness to share (as discussed in section 2.5.3.2) and is not a mere function of organisational structure.

Whilst it seems logical that the way an organisation is structured would (or should) have an effect on how KM operates within the organisation, there are limited empirically grounded studies that explore this area.

One distinct organisational structure that has received coverage in the KM literature is the Hypertext organisation (Nonaka and Takeuchi, 1995). The following is a discussion of this structure.

- Hypertext Organisation

Nonaka and Takeuchi (1995) argue that current organisation structures do not facilitate the creation, capture and transfer of knowledge that is required in today's organisations. Historically, organisations swayed between two types of structures. On the one hand, bureaucratic structures, which are highly formalised, emphasise control and work best in stable conditions and on the other hand, task force structures which are dynamic, decentralised and flexible. Task force structures bring together representatives from different parts of the organisation in order to complete a particular job or task. The strength of this structure lies in the flexibility and adaptability that the structure offers (Nonaka and Takeuchi, 1995).

However, each of these structures suffers from some disadvantages. Namely, bureaucratic structures can create tension and red tape as well as reduced levels of motivation in an organisation. Whilst encouraging innovativeness and the creation of new knowledge, task force structures, due to their temporary nature, do not optimise the capture and transfer of the knowledge that is created.

Although an array of organisational structures has surfaced (including "adhocracy", "inverted pyramid" and "spiderweb" structures) all with the aim of striking a balance between bureaucracy and task force, they are all useful in

specific situations and not others, and are dependant on specific supporting structure in order for them to be effective.

The model presented by Nonaka and Takeuchi (1995) claims to achieve the correct balance between the two extremes of the centralised bureaucratic structures and decentralised task force structures allowing an organisation to capture, utilise and disseminate knowledge in a cyclical process.

The “Hypertext Organisation” is made up of three layers or contexts: the business system, the project team and the knowledge base. The “business system” refers to the day-to-day routine activities of the organisation. This layer is predominately bureaucratic as this is claimed to be the most effective method of managing the organisation in a stable environment. The top layer is the project team where, as the name suggests, people are brought in from different parts of the organisation in order to achieve a certain task. The orientation of this layer is task force in order to allow for creativity and problem solving. “Knowledge base” forms the bottom layer where knowledge from the two other layers is captured and re-contextualised. Although this bottom layer does not exist as a real entity within the organisation, it resides within the corporate vision and culture of the firm.

Nonaka and Takeuchi (1995) argue that the co-existence of these layers allows organisations to draw on the different strengths of each layer as the need arises. Therefore, in times of stability and routine operations, the core business system layer is most active whilst in more dynamic situations, the project team layer can be utilised. The key strength of this model lies not only in the flexibility that the structure offers but in the ability to capture and contextualise knowledge that is created at the different layers of the organisation.

However, a number of limitations seem evident. One of the fundamental assumptions made in the model is that members of the project team, once a task is completed and new knowledge has been created, will move to the knowledge base in order to make an inventory of their new knowledge. This assumption is flawed on two counts; primarily, employees are not necessarily always willing

and/or able to share knowledge. Hence, assuming all knowledge created will be captured is not valid. Secondly, since the knowledge base does not exist as a real entity, the capture and sharing of knowledge is highly dependant on the structures and forces within the organisation such as culture and reward which can either motivate or hinder the process of knowledge capture. Although the two top layers may operate effectively in terms of utilising the strengths of the different structures depending on the situation, the final layer is more difficult to manage. Further, as there is little empirical research into the implementation of the hypertext structure, it is unclear how an organisation can migrate to this new structure and overcome the problems that they may encounter.

#### **2.5.5.2 Organisational Structure and KM**

The way an organisation is structured can have important implications for KM efforts. Although organisational structures are used to maximise efficiency and productivity amongst employees, they can sometimes unintentionally result in inhibiting collaboration and knowledge sharing within the organisation (Gold et al., 2001).

In order to maximise an organization's capability to leverage knowledge, the organisation must adopt a flexible structure that supports the different types of knowledge and communication processes that are necessary to optimise this key asset (Davenport and Volpel, 2001).

One of the prime factors that may have a direct impact on the choice of organisational structure, and the level of flexibility of the organisational structure, is the size of the organisation; although this factor has been largely neglected in the KM literature (Hislop, 2005). In today's society, the typically dispersed and fragmented nature of knowledge within organisations has meant that one of the main challenges is for firms to collate and manage this knowledge. However, as the size of the organisation increases, it becomes more and more difficult to locate, coordinate and manage the knowledge base, making the need for rigid and formalised structures more pressing (Myers, 1996).

This is further complicated by a number of issues. Firstly, the rise in the number of global and multinational companies means that although a lot of knowledge may be created, it becomes increasingly difficult to capture and disseminate. In addition, the fact that people are geographically dispersed does not allow for social interaction on a regular basis or the development of strong social ties which, Hansen (1999) argues, is a major factor in the routine transfer of knowledge. The sharing of knowledge only takes place given a degree of trust and expected reciprocity for the knowledge. This is difficult to achieve if people are not able to have regular social interactions. Further, maintaining these regular social relations is a time consuming and expensive effort and requires flexibility to be built into the operation of the organisation which is not always possible given the geographical dispersion of organisational locations.

Secondly, the geographical dispersion of departments or units within an organisation also brings socio-cultural issues to the fore. Even employees working for the same organisation will have a different interpretation of the organisational ethos and mission based on their own system of beliefs and values. The lack of a shared common language may mean that knowledge is interpreted differently by different people and in different contexts. Therefore, knowledge sharing across socio-cultural boundaries can prove very difficult (Hislop, 2005). This is of particular relevance for organisations that outsource certain functions to cheaper regions of the world in an effort to cut costs. Although the immediate financial gains may seem appealing, the longer term impact on the creation and management of knowledge may be quite serious.

Finally, the organisational structure will impact on the type of knowledge that is captured, shared and ultimately utilised. System embeddedness and observability of knowledge are two dimensions which have an influence on how and which knowledge is shared (Birkenshaw et al., 2002). System embeddedness refers to the extent to which knowledge is embedded in the systems of the organisation or is a function of the context in which this knowledge is developed. Observability on the other hand, refers to knowledge which can be gained by observing the processes of the organisation. The more

the knowledge is embedded in the organisational system, the more difficult it is to share whereas the more observable knowledge is the easier it is to transfer. Birkenshaw, Nobel et al (2002) argue that hierarchical structures are only appropriate when the knowledge base of the organisation is highly observable and knowledge can be easily codified and shared. Flexible structures on the other hand are more appropriate when organisational knowledge is highly embedded in the organisational structure to allow for more effective knowledge sharing (Birkenshaw et al., 2002). Therefore, the design of the organisation needs to take into account the type of knowledge base which the organisation has in order to ensure the capture of the tacit as well as the explicit knowledge.

Another factor which has had wide coverage in the management literature in general and has strong links to KM is that of 'communities of practise' (CoP). Lave and Wenger (1991, p98) define a community of practice as: 'a set of relations among persons, activity, and world, overtime and in relation with other tangential and overlapping communities of practice.' They argue that a community of practice is an intrinsic condition for the existence of knowledge primarily because the community provides the interpretative support necessary for making sense of its heritage. By definition, these CoP are characterised by high levels of flexibility in order to allow the support mechanisms to operate effectively. However, if the existence of a CoP is a necessary antecedent to the sharing of knowledge, then, drawing on Brown & Duguid's (1991) analogy that an organisation is a community of communities, one may conclude that the more subunits (sub communities) there are, the more difficult it is to co-ordinate and manage knowledge and its processes.

This section has explored the impact that flexible organisational structures may have on KM success and overall organisational performance. Primarily, the size of the organisation will have an impact on how knowledge is transferred as well as the nature of knowledge that is transferred. Further, socio-cultural barriers can impact on the interpretations of knowledge. The system embeddedness and observability of knowledge add another dimension in the consideration of organisational structure and finally, CoP further complicates the issues by giving rise to small sub-units within a department. Hence, these

issues will be explored further in the interview stage of this research to confirm if a flexible organisational structure does have an impact on KM success and perceptions of organisational success..

### **2.5.6 Innovation**

It may be argued that increased innovation is the main objective of most KM initiatives (Ernst and Young, 1997). In today's 'knowledge society' (Drucker, 1993, p7) the need not only to manage existing knowledge but to regularly create new knowledge is a key requirement for firms to survive. Although a particular innovation may be of great economic value to an organisation, it is the ability to generate such innovations that is of real importance to the sustainability of the organisation's knowledge base (Garvey and Williamson, 2002).

To achieve a single or generally accepted definition of the term innovation is notoriously difficult (Adams et al., 2006), however, some common definitions abound. At a specific level, innovation has been defined as the ability of an individual or other unit of adoption to adopt an idea earlier than any other member of the system (Rogers, 1983) whereas Drucker defines innovation as "the application of knowledge to produce new knowledge" (1993, p173). A broader definition which will be used as a guide for this thesis is provided by the UK Department of Trade and industry as "the successful exploitation of new ideas" (1998).

#### **2.5.6.1 Frameworks for Innovation**

Innovation incorporates many aspects whether it is the pure creation of new knowledge or whether it is the utilisation of exiting knowledge in new scenarios. However, a number of characteristics are common to all innovation processes (Kanter, 1996). These are:

- **Uncertainty:** on one side, the source of innovation and the intervals at which an innovation occurs are unpredictable. It is not possible to

schedule for innovations which obviously makes the management of the innovation process difficult. On the other side, the outcome of an innovation is also uncertain. There is no guarantee that the innovation process will initially be fruitful and even if it is fruitful, that it will yield the desired returns for the organisation.

- **Knowledge intensiveness:** in order for innovation to occur, there is a big reliance on human creativity. The innovation process can only progress if there is interactive learning amongst individuals facilitated by regular and close communication between participants to ensure knowledge transfer. As the knowledge is uncodifiable at this stage, turnover of participants in the innovation process breaks the chain and erodes the accumulated knowledge.
- **Political:** unavoidably, the allocation of resources to the innovation process means the diversion of these resources from other organisational processes. This can obviously lead to competition for resources which can either stifle or help the innovation effort to flourish.
- **Cross-boundary:** generally, innovations will have roots in many functions or will draw from different areas of the organisation as it is rare for a product or process to be contained exclusively within one unit. Furthermore, the development of the innovation will have knock-on effects in other units of the organisation either due to a change of an existing product or procedure, or the need to develop a new product or procedure to support the innovation.

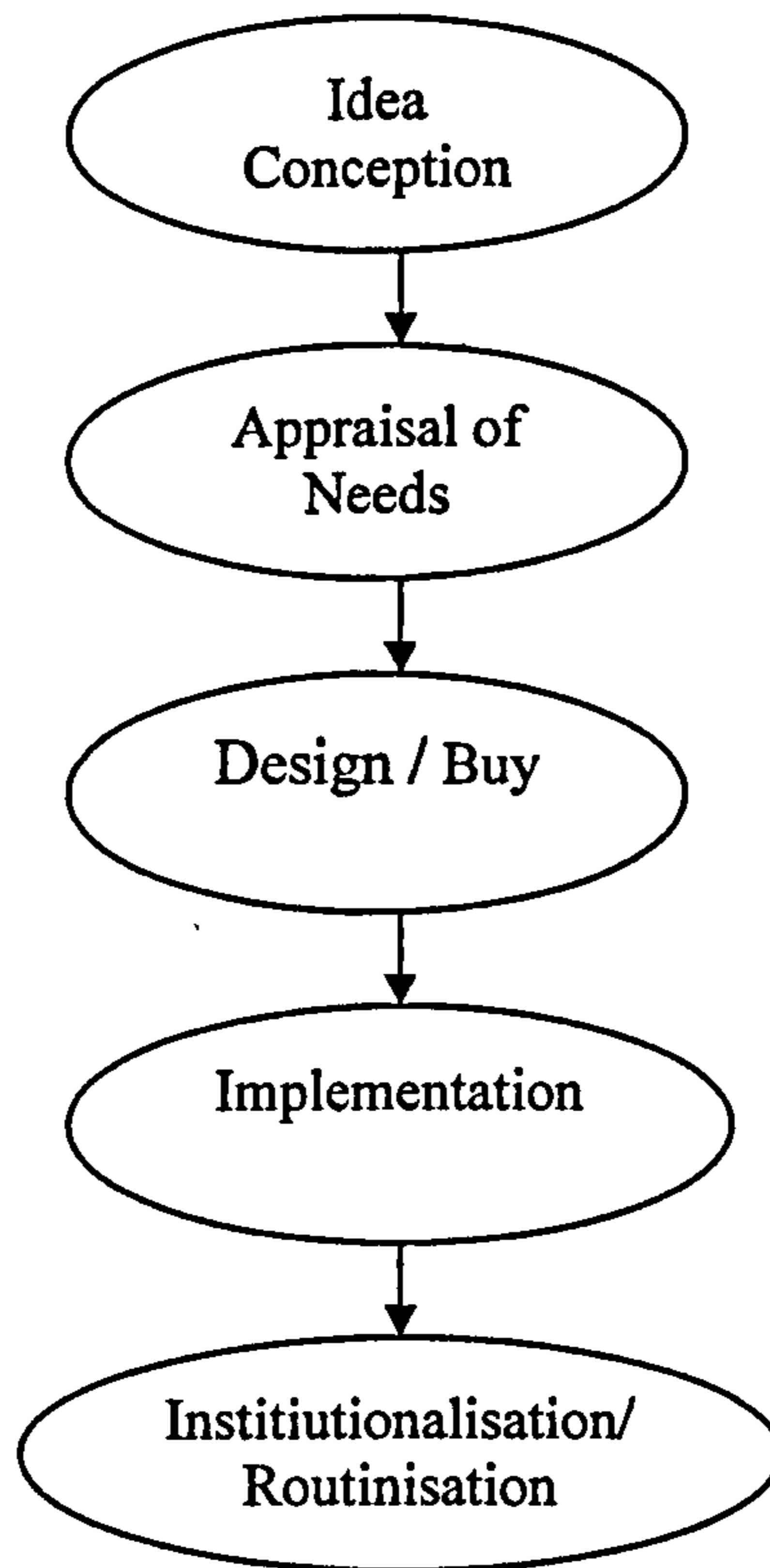
Obviously, the nature of these characteristics will have implications for the management of innovation processes as well as the effects of innovation on KM. These will be discussed in greater detail in the next section.

Whilst the literature on innovation proposes different theoretical perspectives, initially there was general agreement on the stage model of innovation theory



(Hislop, 2005). This theory suggests a number of discrete stages of innovation from initial idea generation to the institutionalisation of the idea into the organisation. The stages are depicted in the diagram below.

Fig 2.3: Typical components in stage model of innovation



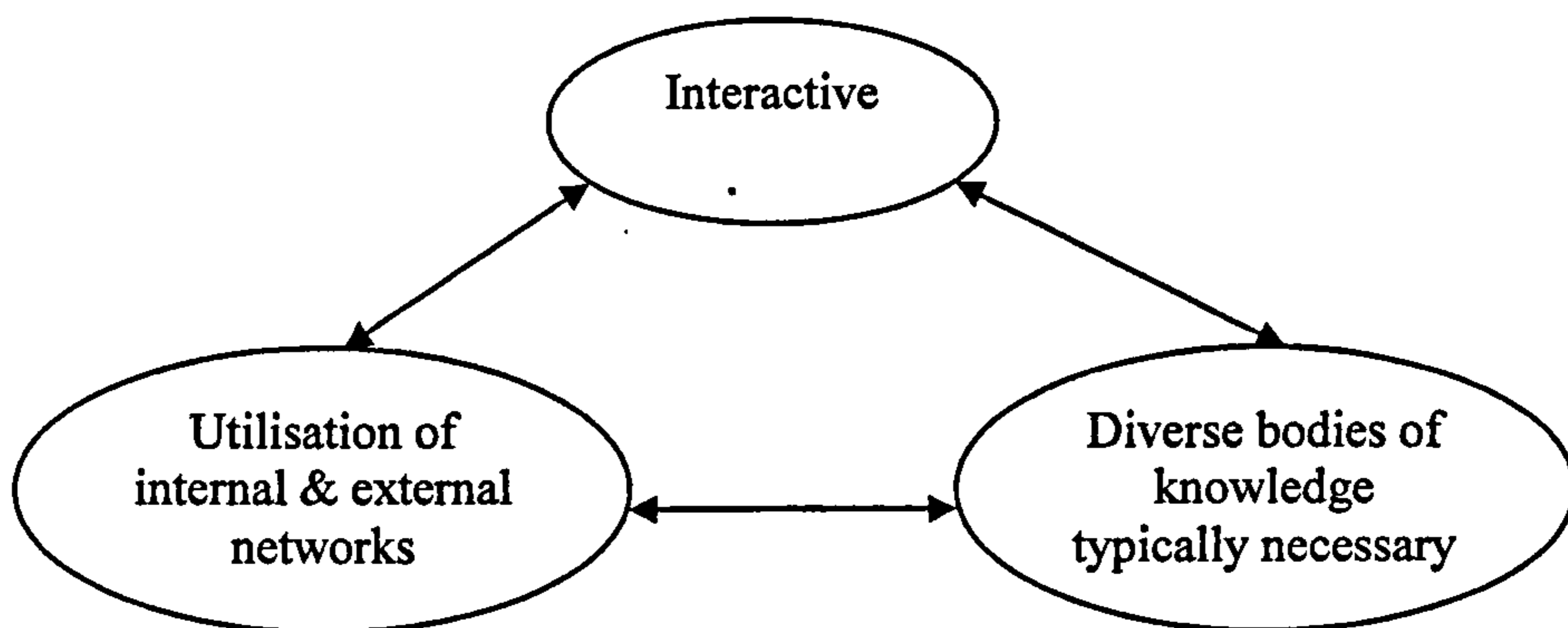
**Source:** (Hislop, 2005. Knowledge Management in Organisations. Oxford, Oxford University Press, p159)

In the 1990s, the linearity of this model was challenged in that the model does not reflect the extent to which the stages are inter-related. The stages are not mutually exclusive but rather interdependent and at times iterative in order to develop the innovation (Leonard-Barton, 1995). Further, innovation processes are perceived as being increasingly interactive as the knowledge necessary for innovation is no longer all contained internally within the organisation but needs to be sought externally. This requires interaction with external participants such as customers, suppliers and stakeholders. The development of

both internal and external networks is necessary to the achievement of this interaction so as to support the innovation process.

Thus the newer model of innovation theory is more cyclical involving the interactive use of networks and differing bodies of knowledge. This is depicted in fig. 2.4 below:

Fig 2.4 Key characteristics in contemporary conceptualisation of innovation processes



**Source:** (Hislop, 2005. Knowledge Management in Organisations. Oxford, Oxford University Press. p160)

The uncertain, fragile, political and cross functional nature of innovation discussed above, as well as the complex relationships involved in the innovation process point to the difficulties entailed in the whole concept. Yet, organisations realise the importance of this phenomenon. Not only are organisations aware of the significance of knowledge as a key organisational asset but they are also aware of the need to constantly update existing knowledge and create new knowledge. This is seen as the basis for maintaining competitive advantage in today's knowledge economy (Sveiby, 1997).

The current state of rapid change in today's market creates continuous change in knowledge requirements leading to new states of disequilibrium and potential profit opportunities (Johannessen et al., 1999). A firm's ability to routinely innovate, either by generating new ideas or using existing ideas in different

ways, faster than the competition allows them to tap these opportunities and achieve competitive advantage. Whilst interviewing 50 of Europe's top managers with regard to requirements for survival in the 21<sup>st</sup> century, Johannessen and Olaisen (1999 p119) found that regular innovation was considered key for firm survival. Actions geared towards supporting innovation included working collaboratively with educational institutions and developing partnerships with local smaller firms to utilise their flexibility and innovativeness.

Unfortunately, the generation of new ideas or the use of existing ideas in novel ways does not maintain a firm's competitive advantage for long as levels of imitation within the market are very high (Johannessen et al., 1999). The constant strive for new ideas and better application of ideas into different contexts spirals competition creating a continuous state of disequilibrium and new opportunities. This highlights the need for organisations to develop systems where regular and routine innovations can take place in order to stay ahead of competition.

Hence, the need for organisations to support innovation is apparent. The sole possession of knowledge is no longer sufficient to ensure competitive advantage but it is the process of acting on knowledge that differentiates organisations.

#### **2.5.6.2 Innovation and KM**

Although the concept of innovation is a multi-faceted issue (as discussed below), the KM literature is in agreement about the necessity of regular and routine innovation in order to remain competitive in the 'knowledge economy' (Johannessen et al., 1999, Leonard-Barton, 1995, Nonaka and Takeuchi, 1995). Although there is a realisation that not all innovations will lead to successful application or adoption in the organisation, the higher the number of innovations, the more likely that some will lead to fruitful ideas and thereby competitive advantage for organisations.

The majority of KM literature regards knowledge creation processes as the key drivers behind innovation (e.g. Chou et al., 2005, Leonard and Sensiper, 1998, Nonaka and Takeuchi, 1995). In particular, Nonaka and Takeuchi (1995) argue that in order to 'explain' innovation, we need a new model of organisational knowledge creation. Thus, continuous knowledge creation is at the heart of an organisation's ability to innovate. This idea is currently being challenged with knowledge creation being viewed as only one element of the multi faceted concept of innovation. Innovation is seen as an incremental process of knowledge development as opposed to knowledge replacement (Hislop, 2005). Further, innovation not only includes the creation of new knowledge but also the search for external knowledge, together with the ability to absorb or 'internalise' this external knowledge as well as the application of existing knowledge to different contexts or situations. The integration and co-ordination of different bodies of knowledge is yet another aspect of innovation processes. Hence, innovation is a combination of complex processes carried out at the individual as well as the organisational level.

Considering the move away from the linear model of innovation and the introduction of the more integrated and cyclical model, some writers have questioned the ability of organisations to manage such a fluid and creative activity as innovation (Kanter, 1996). Innovation is dependent on the creativity of humans given certain contexts and certain raw materials. However, the precise nature of humans and their individuality makes it difficult to predict the outcome of the interaction with the raw materials let alone whether or not an innovation will emerge. Thus, trying to encourage, manage or measure innovation has sometimes been viewed as a futile task. Indeed, it has been suggested that innovations occur despite organisations and not because of organisations due to the rigid and procedural characteristic of organisation design (Leonard and Sensiper, 1998).

Yet from a KM perspective, routine innovation is key to sustaining competitive advantage. The ability to regularly create, capture and utilise knowledge is the emphasis of KM programmes. Further, knowledge, both tacit and explicit,

underlies the innovation process (Adams et al., 2006) therefore making it necessary for KM initiatives to be concerned with the innovation processes.

As described previously, innovation is a multi-faceted concept but the KM literature has focused on three main areas; these are idea generation, knowledge repository and information flows (Adams et al., 2006).

The concept of idea generation has had a lot of coverage in the management literature but the importance of the continuous generation of sufficient numbers of ideas to facilitate development of a product or process is generally accepted (Adams et al., 2006). Ideas form the basis for innovation and therefore it follows that the more ideas are generated, the greater the likelihood of innovation occurring. However, this is the stage which is most susceptible to difficulties from a management perspective as it can be quite fuzzy requiring creativity and opportunities to evaluate ideas that may not in themselves be useful but may well lead to innovative ideas. This element of innovation is also closely linked to the time factor as idea generation, idea development and idea analysis all require time which may not be accounted for in the organisation. The issue of time will be discussed in greater detail in section 2.4.9.

If knowledge forms the basis of innovation and ultimately, competitive advantage, then where this knowledge resides, i.e. the knowledge repository, is of great importance to the organisation. Central to discussing the knowledge repository is the differentiation between tacit and explicit knowledge. Much of the early KM literature had focused on the development of knowledge repositories but this was primarily concerned with explicit knowledge. Obviously, the capture and storage of explicit knowledge is much easier and it is relatively simple to set up knowledge banks or document warehouses etc for explicit knowledge. However, second generation KM is still dealing with the issue of storing or accounting for tacit knowledge. For innovation in an organisational context, it is not just individual tacit knowledge that is relevant but more so collective tacit knowledge. As Leonard and Sensiper (1998, p118) put it:

*“When a group of diverse individuals address a common challenge, each skilled person frames both the problem and its solution by applying mental schemata and patterns he or she understands best. The result is a cacophony of perspectives.....producing energy that is channelled into new ideas and products.”*

This high level interaction between individuals is necessary to generate innovation, however the literature has not fully addressed the question of how this group tacit knowledge can be stored for organisational use. Leonard and Sensiper (1998) argue that some tacit knowledge can never be codified and as individuals are socialised together, they develop a shared schemata and mental models that help in the innovation process. The development of this shared schemata is important for organisations, for two reasons. Primarily, if an individual leaves the organisation, they do not take the tacit knowledge with them completely as it is shared with others in the organisation. Secondly, because the tacit knowledge is developed collectively through the socialisation of individuals, it is impossible to imitate by the competition as no two individuals will have exactly the same tacit knowledge and will interact in exactly the same way as any other two individuals. Arguably, the more the interaction between individuals, the stronger the shared schemata and therefore the higher the likelihood of innovations occurring.

Thus, it may not be the aim of organisations to capture tacit knowledge in repositories but to develop collective tacit knowledge which will reside in the organisation at a more abstract level.

Information flows is also an important area for innovation within KM. The flow of information into and out of an organisation highlights the organisation's ability to collect and share knowledge not only internally, but with external parties as well (Adams et al., 2006). The ability to use external information to aid in the innovation process is a key requirement in order to remain competitive. However, central to this is the concept of absorptive capacity (Cohen and Levinthal, 1990) which argues that an organisation's ability to recognise the value of, assimilate and apply new external knowledge is crucial

for any innovation process. This is dependant on a firm's prior knowledge and the structures that are set up to utilise or absorb new knowledge. This is obviously challenging as new external knowledge emanates from different cultures and has different values and therefore interpreting this knowledge can prove troublesome. Although it is not possible to predict what the "correct" level of absorptive capacity should be for any particular firm (Cohen and Levinthal, 1990) it has been indicated that higher levels of absorptive capacity appear to be positively related to innovation and performance (Tsai, 2001).

Thus, a number of managerial implications can be drawn from the discussion of innovation. Principally, the importance of routine innovation to aid and maintain competitive advantage has been recognised as key to KM as well as organisational success (Johannessen et al., 1999, Leonard-Barton, 1995, Nonaka and Takeuchi, 1995). Further, the realisation of the importance of tacit knowledge to the innovation process is crucial and it has been suggested that an organisation's ability to utilise tacit knowledge represents a measure of its innovation ability (Leonard and Sensiper, 1998). An awareness of the importance of tacit knowledge as the basis for generating innovations allows organisations to put in place frameworks to encourage the sharing of tacit knowledge in order to develop a collective organisational tacit knowledge base from which innovations may occur.

Additionally many of the barriers to sharing tacit knowledge discussed in section 2.4.3 are the same barriers to innovation. Parallels can be drawn between the routine sharing of knowledge and routine innovation. For example, rewarding innovation is important, but more important is rewarding knowledge sharing which enables innovation. Organisational cultures that facilitate knowledge sharing are crucial. Further, flexible organisational structures that support communication in order to enable knowledge sharing are also vital. Innovation is not a stand alone process within organisations or within KM initiatives. It is highly dependent on, and inter-related with other organisational functions and frameworks.

The development of innovations ultimately means change and many organisations are resistant to change. Although the literature discusses the importance of innovation for KM, there is little empirical research into the levels of acceptance of innovations in organisations and how many innovations are actually adopted at an organisational level. Another gap in the KM literature with regard to innovation is that of measurement. Generally, KM has yet to reach a consensus on whether or not KM initiatives can or should be measured but due to the uncertain nature of the innovation process, it seems logical that measures should be put in place in order to establish some sort of cost benefit analysis of the process.

Thus it is evident that, at a theoretical level, routine innovation is vital for KM success as well as for overall organisational performance. Routine innovation not only has a direct impact on the success of KM initiatives, but also maintaining competitive advantage and thereby organisational success. This theory will be tested further in interviews with key players in the industry.

### **2.5.7 Reward**

The issue of reward or incentives has been identified as a key factor for KM initiatives and a prime topic for KM research (Alavi and Leidner, 1999). Much of the KM literature discusses reward in light of knowledge sharing or as an enhancement to knowledge sharing initiatives. However, for the purposes of this thesis, reward will be discussed separately as participating in the sharing of knowledge is, to a greater or lesser degree, an individual's choice whereas the offering of a reward package is an organisational choice and thus this construct fits in with the organisational influences.

Motivating employees to conform to particular behaviours or culture through performance-based rewards is a topic which has received vast coverage in the management literature in general and the KM literature in particular (Huber, 2001). However, there are still a myriad of issues that impact on the discussion of this topic. The next section will highlight some of the main issues identified in the literature as having an effect on reward systems.



### **2.5.7.1 Frameworks for Reward**

Initially, reward can be defined as either outcome-based or behaviour-based (Lucas and Ogilvie, 2006). Outcome-based incentives reward the successful sharing of knowledge or the improvements gained as a result of the sharing of knowledge. Behaviour-based incentives on the other hand act as triggers to motivate individuals to engage in the sharing process and therefore reward a change in behaviour. It is argued that both types of rewards are necessary to induce, as well as maintain the desired knowledge sharing behaviour. However, absencing these rewards makes individuals revert back to their old non-sharing behaviours (Kohn, 1993) thus indicating that incentives only facilitate temporary compliance to organisational goals.

The literature does not address the issue of timing and regularity of rewards as an enabling factor for knowledge transfer. Although rewards may be viewed as a temporary way of ensuring compliance, regular rewards may facilitate better knowledge sharing behaviour over longer periods of time.

A further consideration in assessing reward is the type of reward to be given. Explicit or hard rewards tend to be generally viewed as economic incentives such as bonuses or performance related pay but other hard benefits may include access to information and career advancement opportunities (Hall, 2001).

Soft or intangible benefits on the other hand appeal to the self-actualisation needs of some individuals (Maslow, 1970) and can be manifested in things such as a better reputation amongst peer, improved status within the organisation or the altruistic pleasure gained from sharing with others. These have been termed the “social-psychological forces” that impel people to share (Constant et al., 1994).

Another confounding factor in the reward construct is the issue of rewarding tacit knowledge. In comparison, rewarding explicit knowledge is relatively simple in that employees are rewarded for submissions to a database, or

documents to a knowledge repository. The social exchange is easier as the product, i.e. knowledge, is visible and tangible and can be valued. In contrast, tacit knowledge is more complex as it is more difficult to communicate and only the holder of the knowledge is aware of how much knowledge they hold making it impossible for the organisation to value and ultimately, reward. Thus, given that it is at the knowledge holder's discretion whether or not they identify their knowledge and choose to share it, it is up to them to determine potentially acceptable rewards for this knowledge in order for them to give the knowledge up (Huber, 2001).

The problematic nature of knowledge sharing based reward systems is further exemplified by the inherent differences in industries and their respective perceptions of reward. For example, it is argued that workers in the consulting industry are primarily motivated by extrinsic rewards (Huber, 2001) whereas other industries are motivated by less tangible rewards. This has obvious implications for multi-national corporations which operate in different sectors where standardisation of reward systems may prove problematic. Furthermore, not only is the type of sector likely to have an impact on the type of reward but the nature of knowledge being shared will elicit different expectations of reward. It is argued that people would share explicit knowledge (e.g. a computer programme) as the organisation has a right to it but they would share personal expertise since in doing so, they expect to receive personal benefits (Constant et al., 1994).

Thus, from the discussion above, it is obvious that reward is a complex and multi-dimensional construct. The choice for organisations between outcome-based or behaviour based rewards together with the distinction between intrinsic or extrinsic rewards and timings of rewards is a difficult one. This is further complicated by the tacit nature of knowledge held and the industry norms and expectations in which the knowledge players act. The implications for KM of utilising a reward system are huge. This is discussed in the next section.

### **2.5.7.2 Reward and KM**

There is a lot of agreement in the literature with regard to the importance of knowledge sharing based reward systems for KM initiatives (Bock and Kim, 2002, Boist and Griffiths, 1999, Coakes, 2006, Hislop, 2005, Leonard-Barton, 1995) and this importance emanates from the assumption that knowledge is a key asset for an organisation and as the knowledge is held by individuals who can opt to share or not share this knowledge, it is vital for organisations to make the sharing of knowledge a rewarding experience for the knowledge holder. Boist & Griffiths (1999) state that “the capture of knowledge involves more than simply making it easier for employees to articulate their idiosyncratic experiences and know how. It involves making it worth their while to do so” (Boist and Griffiths, 1999, p662).

There is a general consensus in the KM literature regarding the importance of knowledge sharing as a predecessor to effective KM (Davenport and Prusak, 1998, Huber, 2001, Nonaka, 1991) and there are extensive links being drawn between knowledge sharing behaviour and reward systems. The concept of rewarding knowledge sharing behaviours recognises the existence of knowledge markets where the knowledge holders seek value for their goods, i.e. knowledge, in order to part with it or exchange it (Davenport and Prusak, 1998, Huber, 2001, Nonaka, 1991). This value can take many forms such as financial, prestige, promotion etc.

From a theoretical perspective employing economic exchange theory, it seems logical that certain rewards will elicit certain behaviours. However, it has been found that rewards do not necessarily encourage knowledge sharing behaviours and in some instances may have the negative effect (e.g. Bock and Kim, 2002, Lucas and Ogilvie, 2006). The KM literature is divided into two distinct schools of thought in respect to the effects of rewarding knowledge sharing. The first argues that reward is an essential criteria in eliciting sharing of knowledge (Hall, 2001) whereas the second school of thought argues that reward does not lead to knowledge sharing and in some circumstances may

have the opposite effect (Bock et al., 2005, Lucas and Ogilvie, 2006). Both of these view points will be discussed in greater detail below.

Theoretically, it is argued that knowledge sharing is a social activity where rational participants will evaluate the costs and benefits of sharing and will only engage in the activity if the benefits outweigh the costs (Molm, 2001). Participants will consider the implications of giving up their knowledge and the impact this may have on their power base and competitive advantage within the organisation. If the benefits are perceived as high enough, then the knowledge will be shared. How much knowledge is shared will be dependent on the perceived rewards. Considering that knowledge is unexposed and therefore difficult to value until the holder makes the knowledge available (Bock et al., 2005), this has implications for rewarding this knowledge and managing expectations. If the reward is seen as unworthy, individuals may abort any knowledge sharing activities or may only share less valuable knowledge.

Conversely, others (e.g. Bock and Kim, 2002, Bock et al., 2005, Lucas and Ogilvie, 2006) have found that because participants are rational, incentive schemes may serve to discourage knowledge sharing as they may be viewed as hindering their efforts to maintain competitive advantage within the organisation.

A number of other reasons have been cited regarding why knowledge sharing based reward schemes fail to encourage the desired behaviours (Bock and Kim, 2002). It is important to note at this stage that these reasons are mere explanations of an empirically tested negative relationship; the reasons themselves have not been tested in the knowledge sharing context.

Initially, it is argued that rewards may have a punitive effect, so that if an expected reward is not received, it has the same effect as punishment. Further, due to the limited number of rewards available, for every person that is rewarded, there are others that are not and this may have severe effects on relationships within the organisation creating an environment of unhealthy competition. Also, rewards may create a feeling of dislike of the task in that

employees may feel that if the task must be incentivised, therefore it must not be a good thing creating negative feelings towards sharing in general (Kohn, 1993).

A number of themes therefore can be drawn from the discussion of reward to inform KM practises. Generally, there seems to be a consensus that providing extrinsic rewards alone does not guarantee improved knowledge sharing and ultimately overall organisational performance (Bock and Kim, 2002).

Extrinsic rewards serve to initially align practises so that employees engage to some degree, in knowledge sharing and trigger a change in behaviour (Lucas and Ogilvie, 2006). However, the impact of these extrinsic rewards is short lived and may suffer from diminishing returns on investment. Thus, the incentives need to build knowledge sharing behaviour into the organisational culture so that it becomes a norm within the organisation. One suggested method of achieving this is collective rewards so that teams are rewarded collectively as opposed to people being rewarded individually. Huber (2001) identifies a number of issues that need to be taken into consideration in trying to instil knowledge sharing as a rewarding group activity. These issues include ensuring that no organisational policies negatively affect sharing by rewarding individuals; communicating management values as to the importance of sharing being the 'right' thing to do; leading by example; publicising the positive effects of sharing as well as celebrating occasions where sharing has been fruitful for the organisational members.

Where extrinsic rewards are being used to encourage group sharing, the timing of rewards is crucial. Sharing consumes both time and effort and therefore rewards need to be offered at different stages of the sharing process in order to be inclusive of all participants (Lucas and Ogilvie, 2006).

A more challenging task for KM initiatives is to provide intrinsic rewards to aid knowledge sharing. This is closely connected with the literature on culture where the focus for KM is to develop a knowledge-friendly organisational culture that supports knowledge sharing. There is very little empirical research

that addresses how intrinsic rewards can practically be used to support knowledge sharing. Further there has been a call for rigorous research into how the different types of knowledge being shared may call for different forms of reward as well as the effect of reward on KM programme success and general organisational effectiveness (Bock et al., 2005).

For the purposes of this research, the next stage will seek to confirm if knowledge-sharing based reward systems are viewed by key informants in industry as critical to KM success and impact on perceptions of organisational success.

### **Part Three: Resource Influences**

There has been a large emphasis in the KM on the importance of getting the right organisational culture which supports knowledge sharing thereby allowing for knowledge creation. This is facilitated by a high-trust organisational climate, high levels of job satisfaction and some expected knowledge sharing based rewards. However, the success of KM may also be dependent on the availability of certain resources. The following section will discuss two main resources that can promote or hinder the progress of KM initiatives in an organisation. One of these resources, information technology (IT) has had vast amounts of coverage in the KM literature whilst the other, time, has received very little attention and is a result of observations by the researcher whilst working in the financial services industry.

#### **2.5.8 Information Technology**

Since the 1980s, there has been extensive focus on the use of IT in order to improve organisational efficiency. IT was used to operationalise the existing organisational functions more effectively. This was later enhanced by the introduction of IT tools for communication (Johannessen et al., 1999) which revolutionised the way organisations operated.

An important distinction needs to be drawn between IT in general and knowledge based systems (KBS) in particular (sometimes referred to as knowledge management systems). IT is the general umbrella term applied to any technological tool used to deposit, store, share or communicate information (Hislop, 2005). KBS on the other hand focus purely on knowledge and knowledge related activities (Hendriks, 1999) and aim to portray this knowledge in specific contexts or problem situations. More explicitly, KBS are defined as “IT-based systems developed to support and enhance the organizational processes of knowledge creation, storage/retrieval, transfer and application” (Alavi and Leidner, 2001, p115).

For the purposes of this thesis, the term “IT” will be used for two main reasons. Firstly, much of the literature refers to all technological tools used in KM efforts as IT (Davenport et al., 1998, Despres and Daniele, 1999, Goh, 2002, Hislop, 2005, Nonaka and Takeuchi, 1995, Prusak, 1996) and therefore, it is sensible to keep within this tradition. Secondly, the distinction between what is termed as explicit knowledge and what is termed as information is very fine and thus it is deemed advisable to use a general term that applies to both knowledge and information.

#### **2.5.8.1 IT: Organisational Performance, Tacit Knowledge & Knowledge Creation**

There has been some recognition in the literature of the impact IT has had on organisations in terms of improving processing capacity, speeding of learning curves as well as improved consistency of decision making, whilst on the negative side there is a realisation of the potential of IT systems to create more tedious tasks in de-humanised organisations which may lead to the deskilling of the employee base (Hendriks, 1999). Nonetheless, organisations are convinced of the importance of using IT in their processes, yet given the amounts of money being invested in ensuring that the most up-to-date IT systems are purchased, there is emerging empirical evidence as to the lack of support of a positive relationship between IT and organisational performance (Nonaka and

Takeuchi, 1995, Powell and Dent-Micallef, 1997). This has been termed the “productivity paradox of information technology”.

While the literature is still uncertain of the causes of this paradox, a number of reasons have been cited. Primarily, the interplay between IT and tacit knowledge is a field that has received limited attention from academics and practitioners and has suffered from a lack of empirical research (Johannessen et al., 1999). Given the relative consensus in the literature regarding the importance of tacit knowledge (Huber, 2001, Leonard and Sensiper, 1998, Polanyi, 1966) and its impact on sustaining competitive advantage (Nonaka and Takeuchi, 1995, Spender and Grant, 1996, Teece, 1998) there is very little evidence of this being translated into how IT is used within the organisation.

Strategically, tacit knowledge is critical to the creation of new knowledge which enhances innovation and maintains competitive advantage in the marketplace. Yet most IT systems focus on the explicit knowledge base as it is easier to capture, store and disseminate (Johannessen et al., 1999). This has serious implications for organisations as a lack of focus on tacit knowledge de-emphasises the central role it plays in maintaining competitive edge as the focus is only one part of the organisation’s knowledge base thus undermining the organisations competitive abilities. Further, as IT is mostly available to all organisations in a competitive market, by focusing on explicit knowledge only, this drives down the firm’s dynamic capabilities (Johannessen et al., 1999).

The research by Johannessenn et al (2001) emphasises the importance of focusing on both the explicit as well as implicit knowledge bases within an organisation stating that the effective use of IT is crucial in ensuring the speedy transfer of explicit knowledge. However, the research does not address how IT can help in the transfer of tacit knowledge which is a major gap in the literature.

Another reason offered for the negative link between IT and performance is the lack of consideration by firms of “socio-technical” factors (Coakes, 2006). It is argued that although use of technology is critical in today’s organisation, there is a warning against the over reliance on technology alone to ensure



competitiveness (Davenport and Prusak, 1998, Nonaka and Takeuchi, 1995). Socio-technical theory argues that people, task, process as well as environmental factors need to be considered alongside technology to get a better understanding of how best to implement technology in an organisation (Coakes, 2006). This is especially important for multi-national firms where there is a big reliance on technology as the main transmitter of knowledge and information but this is moderated by cultural, time and virtuality factors.

An added factor for consideration in the discussion of IT is the design of effective IT systems. The technological tools need to reflect the requirements of the organisation and its goals. It is argued that the easier it is to access information, the more likely it will be re-used (Watson and Hewett, 2006) which has cost and time saving implications for the organisation. Further, training has a big impact on the use of IT. Increased training results in greater ease of use leading to higher intentions of use (Watson and Hewett, 2006) which would indicate a higher return on investment for organisations.

Nonaka, Umemoto et al (1996a) posit that technology can play a leading role in creating knowledge in an organisation. Five enablers are identified as helping the creation of knowledge through IT.

- *Organisational intention*: IT (such as e-mail) can help in disseminating organisational intention and goals. This is important for knowledge creation in order to establish which knowledge is valuable to the organisation in light of the overall organisational goals.
- *Individual and group autonomy*: advances in IT allow users to act autonomously either as individuals or as groups thus allowing space for creativity and knowledge creation. This is manifested in the increased use of portable computers and wireless networking allowing users to work from diverse places.
- *Fluctuation/creative chaos*: organisations suffer from both internal and external fluctuations and this can create a state of chaos within the organisation. However, this unstable period can allow for creativity as

people question norms and frameworks. The use of IT can help monitor the situation and transmit information both internally and externally in order to regain stability.

- *Informational redundancy*: the provision of information that is beyond the immediate requirements of the task in hand allows for knowledge creation in two ways. Firstly, by providing increased amounts of information, there is an increased chance of sharing of tacit knowledge as members view information from other perspectives thereby allowing crossing of functional boundaries. Also, 'redundant information' allows individuals to place themselves within the organisation and understand where they fit within the organisational goals. However, there needs to be a balance between provision of redundant information and time lost in searching for the necessary information.
- *Requisite variety*: by having requisite variety, an organisation is able to integrate internally as well as adapt to external changes. The use of large scale knowledge databases allows for the storage and retrieval of knowledge which can facilitate job rotation to allow for integration within the organisation as well as accumulation of knowledge in order to adapt to the external environment.

There is almost complete consensus in the literature regarding the importance of developing effective IT systems for organisations in today's economy in general (Coakes, 2006, Hansen, 1999, Johannessen et al., 2001, Nonaka et al., 1996b). However, there is a varying continuum of views with regard to the importance of IT for KM in particular and how much effort should be exerted on IT and the levels of impact it can have on organisational performance. The next section discusses specific issues regarding IT and KM.

#### **2.5.8.2 IT Systems and KM**

Much of the debate in the KM literature surrounds the recognition of the value of knowledge to organisations and the impact knowledge requisition and preservation may have, not only on the success of firms, but more fundamentally, on their survival. A number of critical organisational functions

have been identified that help offer beneficial working conditions in order to enhance the key knowledge processes. At the forefront, effective IT, which enables easy access, storage and dissemination of both tacit and explicit knowledge, has been considered a primary component of any KM initiative (Johannessen et al., 2001). Historically, in the first generation KM literature, IT was synonymous with KM and much organisational effort was focused on developing and introducing IT tools as a means of managing knowledge (Stoddart, 2001). Furthermore, the results that these tools were expected to deliver were simplistic and unrealisable. Three main problems with IT tools are identified in the literature as myths (Malhotra, 2000, p11). These are:

- KM technologies can deliver the right information to the right person at the right time
- KM technologies can store intelligence and experience
- KM technologies can distribute human intelligence

Obviously, given the current research on the implications of the sharing of tacit knowledge as well as absorptive capacity when dealing with explicit knowledge, it becomes evident that these are indeed myths and such expectations of any IT tool are unrealistic. Although research has proved that technology is a key driver for KM implementation and development, it only achieves short-term benefits (Moffett et al., 2003). Longer term benefits need to address socio-technical factors that are more likely to impact on the success of KM programmes (Coakes, 2006).

This is not to imply that there needs to be less focus on IT. On the contrary, effective IT is recognised as an important enabler for KM. This is reflected in the amount of investment by firms in IT where a recent survey predicted that organisational investments in IT search systems will rise by approximately 25% every year moving from \$1 billion in 2005 to \$2.6 billion in 2010 (Jacobson and Prusak, 2006), although a causal link between IT and improved performance

has yet to be achieved in the literature (Johannessen et al., 2001, Sherif et al., 2006).

The discussion of IT with reference to KM can quite easily be divided into two streams. The first discusses the importance of developing effective IT systems from a technological perspective and how IT can facilitate the fast, easy and convenient storage, transfer and sharing of organisational knowledge. Whilst the second, which evolved as the KM field matured, looks at designing effective IT systems from a social perspective and how IT can help build trusting communities within an organisation that work more effectively together. Both viewpoints are necessary and important for the successful implementation of IT for KM initiatives, however, many organisations are still embedded in the technological perspective and have yet to realise the full potential of effective IT from a social perspective (Hislop, 2005).

From a technological perspective, the three main uses of IT for KM have been identified as storage of lessons learned, access to expertise and creation of knowledge networks (Sherif et al., 2006) which are key to any KM programme. Coakes (2006) adds a fourth dimension by including knowledge creation as a main factor in IT systems. The diagram below identifies the four main uses of IT as well as examples of tools for each.

Fig 2.5 IT for Managing Knowledge

|   |   |
|---|---|
| <p><b>Share Knowledge</b></p> <p>Group collaboration systems</p> <p>    Groupware</p> <p>    Intranet</p> <p>    Portals</p>                                    | <p><b>Distribute Knowledge</b></p> <p>Office systems</p> <p>    Word processing</p> <p>    Imaging &amp; web publishing</p> <p>    Desktop databases</p>    |
| <p><b>Capture &amp; Codify Knowledge</b></p> <p>Artificial intelligence systems</p> <p>    Expert systems</p> <p>    Neural networks</p> <p>    Fuzzy logic</p> | <p><b>Create Knowledge</b></p> <p>Knowledge work systems</p> <p>    Computer aided design</p> <p>    Virtual reality</p> <p>    Investment workstations</p> |

**Source:** (Adapted from Coakes, 2006. Storing and Sharing Knowledge. The Learning Organisation. Vol 13, Issue 6, p581)

However, some limitations of the technological perspective are the over optimistic view of how much tacit knowledge can be codified as well as how much knowledge can be collected in a central repository; the lack of recognition of the fragmented and context - dependent nature of organisational knowledge, together with the unrealistic view that tacit and explicit knowledge are completely separable (Hislop, 2005).

Further, an important distinction to be made in IT systems for KM are ‘push’ and ‘pull’ systems. As the names suggest, ‘push’ systems send out information to organisational members whereas ‘pull’ systems require members to retrieve information from a central repository or information bank (Coakes, 2006). There are obvious implications of both systems in terms of effectively managing knowledge. Although push systems are useful in providing large amounts of information to a large audience, this may create a situation of information overload and both time and effort are wasted in sifting through unnecessary information. Pull systems are also useful in collecting organisational knowledge but pose a similar problem in that if large amounts of information are posted to a central repository, retrieving a single piece of

information may be deemed too difficult, the search is aborted and suboptimal information is used in making organisational decisions. Therefore a balance needs to be sought in the types of systems used and the information delivered in order to ensure the most effective IT systems for the organisation.

The social perspective on the other hand argues that although the technological perspective on effective IT for KM is important, it does not fully realise the potential of IT systems on KM efforts. The social perspective stems from the organisational learning and communities of practise literature (Brown and Duiguid, 1991) and posits that IT and communication software in particular, facilitate close social interaction between members of an organisation (Sherif et al., 2006) who may well be geographically very dispersed. Members develop a shared vocabulary and common language and are therefore able to exchange knowledge more easily (Sherif et al., 2006). Also, as repositories act as group memory, it is easier for new members to absorb the organisational and group culture. Arguably, the better designed these systems, the more effective they are at establishing a well-functioning community of practise.

Research is divided as to the effects of using IT on the levels of trust amongst organisational members. In order to contribute to, and use IT systems, a certain level of trust needs to exist in the community and expectations of reciprocity and recognition need to be present. However, some research (Jarvenpaa and Leidner, 1999) has found a negative relationship between use of IT and levels of trust as well as more displays of opportunistic behaviours. Others on the other hand (Piccoli and Ives, 2003, Townsend et al., 1998) report increased levels of co-operation through use of IT systems as new members conform to norms more quickly and with reduced levels of pressure. Obviously, this is outside the scope of this research but is a prime area for further empirical research in order to establish the true effects of IT on how communities interact within an organisation.

Also from a social perspective, the contribution of knowledge to, and adoption from knowledge repositories has implications for the culture of an organisation and knowledge sharing behaviours (Watson and Hewett, 2006). Thus, effective IT systems design needs to take into consideration how the system is to be used

and the overall organisational goals in order to ensure strategic alignment. Merely having a knowledge repository does not guarantee successful KM (Kankanhalli et al., 2001) or improved organisational performance.

Thus, although there has been a lot of emphasis on how IT can aid knowledge co-ordination in organisations and this has been a focal point for many firms, there has been less emphasis on how IT can help resolve problems faced in knowledge transfer and knowledge re-use. Although research has indicated that organisations that are capable of developing and designing effective IT systems are better able to utilise and transfer knowledge (Jennex and Olfman, 2003), there are still a lot of gaps in the literature with regard to how IT can help in the transfer of tacit knowledge as well as the impact of this on KM success and organisational performance. Interviews with key players in industry will be used to confirm if effective IT systems are viewed as critical to KM success and organisational performance.

#### **2.4.9 Time**

The second and final issue to be considered under the resource influences is that of time. Time is a critical resource for any organisation as time has implications on costs as well as quality of work performed (Maylor, 2005). Surprisingly, time has been almost completely overlooked in the KM literature and any literature that does refer to time, only does so in passing. There is a complete lack of empirical research into how time can impact on KM initiatives. The consideration of time for the purposes of this thesis has been based on the researchers' own observations as to the importance of time in the KM process in a financial services context.

Two approaches to the discussion of time can be taken. The first approach considers time as a resource which needs to be made available for employees to utilise. Whilst the second approach considers the time lag between the knowledge being transferred, or the learning taking place, and the impact on the task in hand. For the purposes of this thesis, the focus will be on time as a

resource since the central theme of the thesis is to identify factors that have an effect on the success of KM projects and organisational performance..

#### **2.5.9.1 Time and KM**

Intuitively, it seems reasonable to make a link between the availability of time and the success of KM initiatives. This is based on a number of assumptions. Primarily, knowledge creation, as has been discussed previously, is dependant on knowledge sharing. Among the conditions that need to be present for the sharing to take place, trust (Huber, 2001), reward (Nahapiet and Ghoshal, 1998), and reciprocity (Constant et al., 1994) have been identified as key factors. Yet, the presence of all of these factors is dependant, to varying degrees, on time investments from both the employees and management. Trust, for example, grows over time; it is not something that can be instilled quickly. Trust develops through interactions with others which are perceived to yield positive outcomes.

Reward and reciprocity are also time consuming efforts since there is a requirement to identify potentially rewarding knowledge sharing activities and knowledge sharing partners that may provide useful reciprocal knowledge. For employees, the search for the rewards and the potential partners can be extremely time consuming. Time implications for management include the consideration of suitable reward systems as well as the provision of sharing opportunities and possibilities of reciprocal arrangements.

Another factor which has been identified as a major obstacle to success in KM initiatives (Ribiere, 2001, Davenport et al., 1998) and which is highly dependent on the availability of time, is culture. Much of the literature discusses the importance of a knowledge-friendly organisational culture that supports the development of sharing relationships facilitated by face-to-face communication as well as communication through the use of technological tools. Comparisons drawn between Japanese and Western culture (Nonaka and Takeuchi, 1995) highlights the significance of informal meetings as a way of sharing information and strengthening the organisational culture. Yet, it seems evident that this is



reliant on the availability of time so that employees can invest the scarce resource of time without feeling that it is being wasted or feeling that their job security is threatened.

The impact of time has been identified by Kanter (1984) as critical to the generation of innovations. The whole concept of innovation is based on both the interaction of individuals (Leonard and Sensiper, 1998) as well as the application of mental models and frameworks to problems in order to come up with a solution (Kanter, 1984). Both of these entities are time consuming and require an understanding from both employees and management that time invested may not necessarily generate the required results yet still needs not to be viewed as wasted time.

Further, much of the KM literature refers to the problems posed by IT in creating information overload (McDermott, 1999). Amongst the frenzy in organisations to acquire faster and more efficient tools, little consideration has been given to the amount of time employees are both willing and able to give up in order to learn how to use these tools. Even with an ability to use the tools, knowledge repositories are today capable of holding vast amounts of information and knowledge meaning increased time and effort in order to locate any required piece of information. Contributing to the knowledge repository as well as keeping the information updated is also a time consuming task and may be considered unrewarding depending on the culture of the organisation.

One counter argument that has been posed is that no specific percentage of time needs to be allocated to KM activities as KM is seen as integral to the working of the organisation and therefore all tasks and processes should take a KM perspective (O'Dell et al., 1999). Although this is an acceptable philosophy to pursue, it seems foolish to completely disregard this factor and undertake no research into its impact on the development of KM in organisations and the ultimate effects on organisational performance.

Thus it seems logical to expect that availability of staff time will have a significant impact on the success of KM initiatives yet this is not reflected in the

academic literature. Guptara (1998) cited the lack of time as one of the key reasons why KM fails as organisations are too busy to invest in activities that do not immediately affect the bottom line. Hence, although there is a lack of empirical evidence to support this, the next stage of the research will confirm with key players from industry whether availability of time is viewed as critical to KM success and organisational success.

## **2.6 Measurement Issues**

Measuring KM activity is a strongly debated topic in both academic and practitioner circles and although it is not the purpose of this thesis to attempt to measure knowledge in any particular organisation, it is imperative that the challenges faced in measuring knowledge are considered.

From a practical perspective, the rise in interest in measuring knowledge is evidenced by the numerous models that have surfaced in an attempt to aid organisations in quantifying their knowledge base and can be viewed as indicator of the inappropriateness of traditional measurement systems that focus primarily on financial-based metrics (Kakabadse et al., 2003, Marr et al., 2004). However, from a theoretical perspective, a pre-requisite to managing anything would be that one had defined what is to be managed (Housel and Bell, 2001), but the inherently intangible nature of knowledge makes it very difficult to assess or evaluate. Further, from a methodological perspective, the dynamic nature of knowledge means that the most any of these models can aim to achieve is a snapshot in time assessment of the value of knowledge (Marr et al., 2004) which does not reflect the changes that can occur as knowledge participants interact with each other and with the infrastructure of the organisation.

The KM field is divided into two schools of thought with regard to the measurement of knowledge; those who believe that knowledge can and should be measured (Chourides et al., 2003, Housel and Bell, 2001, Marr et al., 2004) and those who argue that knowledge cannot be measured and any attempts to do

so would be futile (Ahn and Chang, 2004, Cope, 2000, Stemmer, 2002). The following section discusses each of these viewpoints.

### **2.6.1 The Argument Against**

The first school of thought in the knowledge measurement debate argues that given the fluid characteristics of knowledge, it would be virtually impossible to define and therefore measure knowledge.

To begin with, the tacit nature of knowledge means that not all knowledge is codifiable (Polanyi, 1966). Knowledge exists in people's heads and develops through the person's experience, interactions and personal understanding of situations. Therefore, even if the person attempts to share, not all knowledge can be transferred or replicated. Furthermore, although some knowledge may be transferred by observation, other knowledge needs to be transferred via use of language which poses another problem in that language has different meanings to different people (King and Zeithaml, 2003, OECD, 2004).

The second characteristic of knowledge is that it is context specific. Knowledge can change depending on the time and situation in which it is used and therefore the interpretation of a piece of knowledge becomes open to question (OECD, 2004). The fact that knowledge is context specific challenges the models that claim knowledge can be captured, disseminated and then used with no consideration for the context in which the knowledge was originally created.

The intangible characteristics identified above mean that knowledge does not lend itself readily to management, monitoring or measurement.

Another viewpoint is that any measurement of KM projects should be based on the recognition of invisible assets that add value to the organisation through

innovation and the fostering of a knowledge sharing culture (Martensson, 2000, Holsapple and Joshi, 2002). However, the term asset carries an indication of return and one of the disagreements in the literature surrounds how these intangible assets would be evaluated or quantified.

Others (Drucker, 1993, OECD, 2004, Polanyi, 1966) believe that knowledge should not be viewed as a “thing” or a possession that can be owned, traded, monitored or measured. Alternatively, knowledge should be viewed as a process or an activity which adds value to the organisation. Such processes would include the creation, assimilation, use and re-use of both individual and organisational knowledge.

### **2.6.2 The Argument For**

The opposing school of thought argues that in this era of the “knowledge economy” it is not organisations ability to *out do* one another but their ability to *out know* one another that ensures survival (Housel and Bell, 2001).

The argument in favour of measuring knowledge hinges on the assumption that in today’s society, competitive advantage is underpinned by knowledge. Competitive advantage is made up of the organisation’s core competencies. In order for organisations to grow and nurture this competitive advantage, they need to manage the knowledge on which it is based (Marr et al., 2004). At the individual level, these include personal knowledge, skills and talents, while at the organisational level, they include the organisational infrastructure, culture, trade secrets and the relationships among stakeholders (Bontis et al., 1999).

Although these characteristics may well be intangible and difficult to quantify, increasingly, there is a realisation that the value of a company depends on these intangibles. The difference between the book value of a company and its market value is accredited to these intangibles. Therefore their measurement will aid in attracting venture capital and partnerships (OECD, 2004).

Some firms have indeed managed to successfully quantify the benefits of their knowledge management efforts. Chevron for example managed to realise a \$170 million annual saving through the collection and sharing of knowledge that had been dispersed in its offices across the world (Housel and Bell, 2001).

Further, the expansion of the markets for knowledge, signalled by the increase in patent applications and sharp rises in intellectual property costs, point to the importance of the knowledge economy. However, one of the main characteristics of this knowledge economy are inefficient markets (Teece, 1998) where it is not clear to buyers or sellers who has what or indeed who needs what. KM in general and knowledge measurement in particular assumes the role of reducing the inefficiencies of this market by quantifying knowledge assets (OECD, 2004).

Another case made in support of measuring knowledge is that appropriate metrics are necessary to further convince managers and stakeholders alike of the benefits of investment in KM and its effect on the bottom-line (Housel and Bell, 2001, Liebowitz and Suen, 2000). Old accounting and finance metrics are inadequate or largely inappropriate for the emerging intangible assets that are being proffered as the key organisational drivers of the future.

Finally, the nature of today's society as well as the current economic climate dictates that proof of effectiveness needs to be provided for continued investment into any project. This is the case for KM. In order to ensure the sustainability of KM initiatives, KM measurement tools need to be able to make the case for the importance of KM as a whole. How these tools are used and what they measure is still debatable.

Thus, the KM field is still not agreed with respect to the basic concept of whether or not knowledge should, or indeed, can be measured. Further, even for those who argue that knowledge should be measured, the lack of suitable measurement tools that realistically reflect knowledge assets has led to a call by researchers for further investigation into this area in order to arrive at a

generally accepted KM measurement framework providing the discipline with further credibility (Marr et al., 2004, Liebowitz and Suen, 2000, Holtshouse, 1998).

However, although there is a need to arrive at a universally agreed unit of measurement in order to ensure the sustainability and credibility of the discipline (Housel and Bell, 2001), there is a lack of focus in the literature on measuring the impact of KM efforts on overall organisational performance. Given the complexity in measuring actual knowledge, it seems that measuring the impact of KM on performance (Drucker, 1993, OECD, 2004, Polanyi, 1966) is a more beneficial approach. However, there is also a dearth of methodologically robust research that seeks to address this gap in the KM literature.

This research will therefore explore the impact of the critical success factors identified in the literature on perceptions of organisational success. These factors will be tested through interviews with key players in the industry. This will form a major contribution to knowledge in the KM field. As discussed in section 2.3, self-reported measures of success will be used as they represent the views of the key players in the field.

## **2.7 Conclusion**

In this chapter, the extant literature on critical success factors for KM has been explored and critiqued. A broad literature base has been covered in order to address a number of pertinent areas in the KM field.

Initially, a general discussion of critical success factors identified the importance of this concept and its wide use in the management field. Building on this, a discussion of the specific concept of success was developed since the idea of success is a fluid concept and therefore can be interpreted in many different ways and it was thus important to establish how success would be defined for the purposes of this thesis.

Having established the concepts of critical success factors and success, a detailed discussion and critique of the actual critical success factors for KM ensued. In total, nine critical success factors were identified from the extant KM literature. Each of these critical success factors was discussed independently as well as in relation to KM. These factors will be explored with key players in industry in the interview stage in order to assess which factors are viewed as critical to KM success and overall organisational success.

## **Chapter 3**

# **Methodology and Methods**



### **3.1 Introduction**

Research design is defined by Kumar as “a procedural plan that is adopted by the researcher to answer questions validly, objectively, accurately and economically” (2005, p84). This definition entails two functions of research design. The first deals with the development of the research problem or the research questions that need to be answered. For the study in hand, these were established through the review of the literature detailed in Chapter 2.

The second function of research design is to establish the validity and rigorousness of the methods used in order to reach the findings. This is the aim of the latter part of this chapter. Integral to this section is an in-depth analysis of the justification for the questions and scales used in the research thus establishing the rigorous and robust basis of the research.

However, before a useful discussion of research design can be developed, consideration needs to be given to the research approach undertaken by the study explaining the major different research approaches available, and justifying the reasons for the particular approach taken. This is covered in the first part of the chapter.

Although the two terms are sometimes used synonymously and interchangeably, this chapter makes the distinction between methodological considerations – i.e. the underlying philosophical assumptions for the research approach; and methods, which is the actual tools and techniques used to collect the data (Easterby-Smith et al., 2004, Fisher, 2004). Thus the first part of the chapter deals with the methodological aspect and the second part moves on to discuss the actual methods used.

### **3.2 Philosophical Approaches**

The distinction between epistemology and ontology forms the basis for the main management research approaches. Initially, epistemology is concerned with identifying the things which can be regarded as knowledge, evidence or proof.

Ontology on the other hand deals with the question of whether a particular phenomena or social event would be interpreted in the same way by different social actors (Bryman and Bell, 2003, Jankowicz, 2000). From this basis, different research approaches stem.

Although others exist (e.g. feminism, critical social science, post modernism etc.), positivism, interpretivism and realism are the three major approaches to research. The next section discusses each of these schools of thought independently.

### **3.2.1 Positivism**

Positivism is the research paradigm most closely aligned to the natural sciences where the aim is to uncover facts that are measurable using experiments or survey tools (Remenyi et al., 1998). Central to the idea of positivism is the belief in the external existence of the social world which can be measured objectively and not through reflection and intuition. August Comte (1853) explained this view by saying

*“All good intellects have repeated, since Bacon’s time, that there can be no real knowledge but that which is based on observed facts.”*

Ontologically, Comte’s explanation assumes that reality is not only external but also observable. Further, epistemologically it assumes that knowledge is only of value if it is based on measurable observations of this external reality (Easterby-Smith et al., 2002).

A number of other characteristics identify positivism. Initially, positivism argues that the purpose of theory is in order to be able to formulate hypotheses that can be tested and allow explanation of laws or what is termed deductivism. Further, true knowledge is achieved through the collection of facts that generate laws or inductivism (Bryman and Bell, 2003). Also, in arriving at these laws, positivism assumes an objective role held by the researcher so that the

researcher is totally independent of the research as well as any resulting findings (Remenyi et al., 1998).

Thus, positivism views the role of research as the collection of empirically verifiable data which can be used to derive generalisable propositions that can be rigorously tested in order to arrive at laws or theories.

In order to arrive at these laws or theories, positivists tend to utilise statistical analysis which requires large sample sizes. This is believed to increase external validity and generalisability of the findings (Hair et al., 1987).

### 3.2.2 Interpretivism

...

The contrasting research philosophy to positivism is that of interpretivism, or what is sometimes termed phenomenology or social constructionism. For the purposes of this thesis, the term interpretivism will be used.

Fundamentally, interpretivists believe that the subject matter of the social sciences is completely different from that of the pure sciences and therefore cannot be treated and researched in the same manner (Bryman and Bell, 2003). Considering that social sciences are concerned primarily with the study of humans, interpretivists argue that the research approach taken needs to reflect the distinctive nature of the subject matter. Thus, in essence, the main pursuit of positivists is to *explain* human behaviour, whereas interpretivists aim to *understand* human behaviour (Bryman and Bell, 2003).

The interpretivist view argues that the norms, beliefs and value systems that individuals hold, influence their interpretation of reality as well as their interpretation of how other people view reality. The combination of these two interpretations leads to a socially constructed reality (Fisher, 2004). Therefore, in an attempt to understand this socially constructed reality, the interpretivist approach to research rejects the existence of a universal truth and focuses more on the plurality and complexity of the topic trying to understand it from the point of view of the actors involved in the event (Bryman and Bell, 2003).

A central feature of the interpretivist viewpoint is that any research findings will be coloured by the researchers' own values and beliefs. Hence one of the requirements of this type of research approach is a knowledge and appreciation of one's own beliefs and values or what is termed reflexivity (Fisher, 2004).

Given the above underlying principles of interpretivist research, the characteristics of this approach include a smaller sample size which allows for in-depth analysis of individual human behaviour, especially the use of verbal and non-verbal communication which is one of the main tools used in this approach (Bryman and Bell, 2003). This is in contrast to the positivist view which uses large sample sizes and attempts to remove confounding factors to enable standardisation.

The importance of social constructs such as language and culture is reflected in the collection and interpretation of qualitative data generally using an inductive approach (Silverman, 2005). This implies a process where observations and patterns precede theory. Again, this is in contrast to the positivist approach which relies more heavily on deduction and aims to test theory through observation and investigation of hypotheses. However, it is important to note at this stage that these two methods are not mutually exclusive and most social research will include elements of both inductive and deductive approaches at different times (Saunders et al., 2003).

Further, the interests of the researcher play a major role in the interpretivist approach as it is the individual who ultimately decides what constitutes an event and interprets findings of any such events (Jankowicz, 2005).

The table below summarises the main differences between the two approaches of positivism and interpretivism.

**Table 3.1: Key Features of Positivist and Interpretivist Paradigms**

|                                   | <b>POSITIVIST<br/>PARADIGM</b>   | <b>INTERPRETIVIST<br/>PARADIGM</b>  |
|-----------------------------------|--|---|
| <b>Basic beliefs:</b>             | <ul style="list-style-type: none"> <li>• The world is external and objective</li> <li>• Observer is independent</li> <li>• Science is value free</li> </ul>  | <ul style="list-style-type: none"> <li>• The world is socially constructed and subjective</li> <li>• Observer is part of what is being observed</li> <li>• Science is driven by human interests</li> </ul>                  |
| <b>Researcher should:</b>         | <ul style="list-style-type: none"> <li>• Focus on facts</li> <li>• Look for casualty and fundamental laws</li> <li>• Reduce phenomena to simplest elements</li> <li>• Formulate hypotheses and then test them</li> </ul> | <ul style="list-style-type: none"> <li>• Focus on meanings</li> <li>• Try to understand what is happening</li> <li>• Look at the totality of each situation</li> <li>• Develop ideas through induction from data</li> </ul> |
| <b>Preferred methods include:</b> | <ul style="list-style-type: none"> <li>• Operationalising concepts so that they can be measured</li> <li>• Taking large samples</li> </ul>   | <ul style="list-style-type: none"> <li>• Using multiple methods to establish different views of phenomena</li> <li>• Small samples investigated in depth over time</li> </ul>   |

*Source:* (Easterby-Smith et al., 1999, Organizational Learning: Debates Past, Present and Future. Journal of Management Studies. Vol. 37, Issue 6, pp. 783-796)

### 3.2.3 Realism

In many respects, realism falls between the two extremes of positivism and interpretivism on the continuum of research approaches (Fig 3.1). Realists share with positivists the belief that a reality exists outside and independent of human thoughts and beliefs (Saunders et al., 2003). Within the social sciences, this external reality is reflected in the existence of large-scale social forces that impact on people regardless of whether or not they are aware of the existence of these social forces. However, realists also accept that human beings are not mere scientific objects that can be studied but that socially constructed beliefs will impact on their behaviours and interpretations of events (Saunders et al., 2003). In this respect, realists share some of the same beliefs as interpretivists.

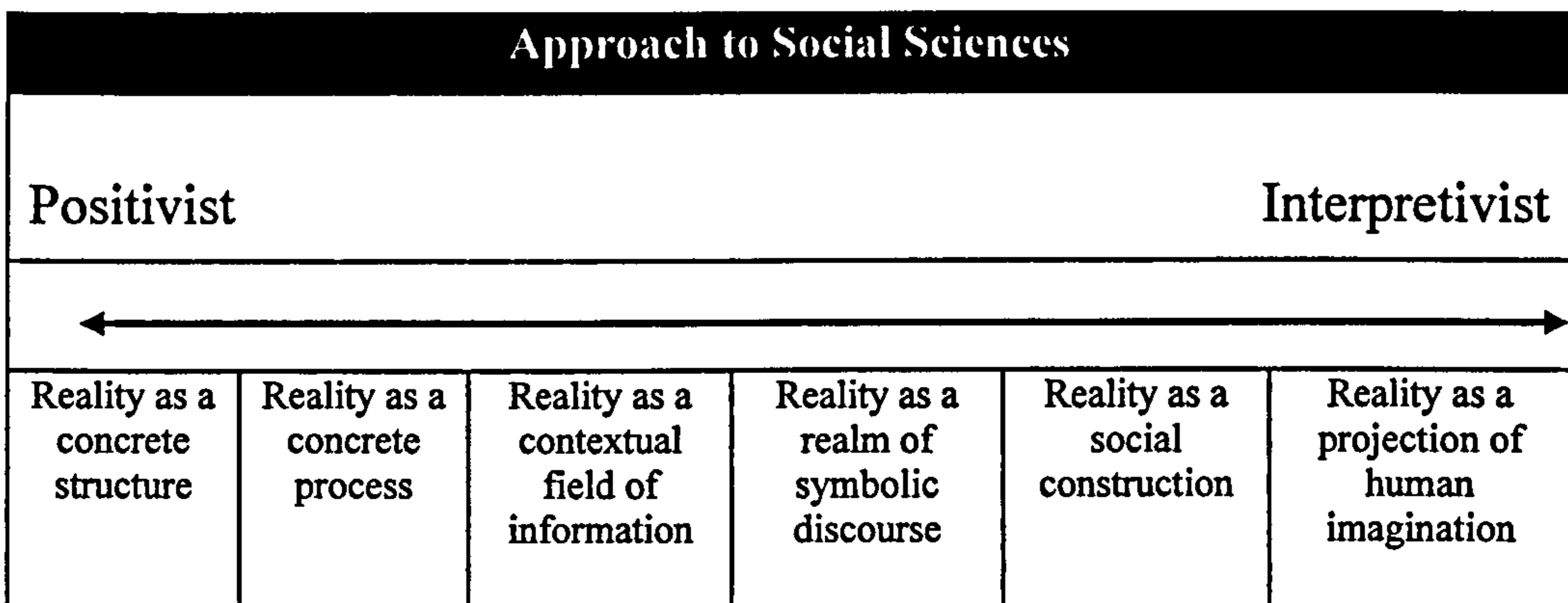
Thus, realism makes a less ambitious attempt, than positivism, to confirm true knowledge since some social phenomena are context dependent making them difficult to measure. Nonetheless, realists attempt to label and measure these phenomena, taking into account the social forces that may affect any resulting findings (Fisher, 2004).

Within the realism school of thought, critical realism goes further by arguing that there are different layers to our understanding of knowledge. Bhaskar (1975), who first developed the theory of critical realism argues that there are three levels of reality. Experience forms the first, and most limited level of reality; this is what is seen on a personal level but does not necessarily mirror reality. At the second level, events are things that a person does not have first hand experience of but interprets through their own experiences. Finally, at the deepest level, mechanisms are the causes for the occurrence of events, as events do not happen out of nothing. A feature of this third and most complex level is that although there is an awareness that mechanisms exist, they cannot be directly experienced and can only be logically inferred (Fisher, 2004).

Thus, the main driver for critical realists is an attempt to uncover the deep mechanisms that underlie the reality which is seen and observed. Bhaskar (1989, p2) argues that “we will only be able to understand – and so change – the social world if we identify the structures at work that generate those events and discourses”.

It is important to note at this point that it would be naïve to assume that any researcher within a particular school of thought would agree wholly with all the characteristics of that particular school of thought. The central tenets of the above research approaches have been developed over time and have collectively come together to represent the different philosophies (Easterby-Smith et al., 2002). The philosophies in themselves show varying degrees of extremism depicting different characteristics. This continuum is shown in figure 3.1 below.

**Fig. 3.1: Objective – Subjective Continuum**



*Source:* (Morgan and Smircich, 1980, The Case for Qualitative Research. *Academy of Management Review*. Vol 5, Issue 4. pp.491-500)

### **3.3 Approaches of Existing Research**

Due to the immaturity of the field, much of the KM literature tends to be practitioner based case-studies and lacks empirically tested research findings (Moffett et al., 2003, Chauvel and Despres, 2002). However, what research does exist, mainly exhibits characteristics of the positivist approach. Generally, it attempts to operationalise and measure certain variables indicating an assumption that an objective truth based on causality can be sought. The main tools used to achieve this are questionnaires and surveys using relatively large sample sizes which are another characteristic of this approach.

Whilst not all research within the KM field adopts a positivist approach, the majority of popular studies seem to assume this method. The table below gives examples of major studies where the positivist approach has been utilised.

**Table 3.2 Examples of Major Studies in KM**

| <b>Year</b> | <b>Title of Study</b>   | <b>Initiator(s)</b>                                      | <b>Methodology</b>                                   | <b>No. of Cases</b> |
|-------------|---|--|--|---------------------|
| 1997        | Europe's State of the Art in KM   | Cranfield Bus. School                                    | Physical questionnaire with some personal interviews | 260                 |
| 1997        | Creating the Knowledge-based Organisation                               | Journal of KM – Benchmarking Exchange Best Practise Club | Physical & web based questionnaires                  | 143                 |
| 1998        | KM Research Report  | KPMG – Harris Research Centre                            | Physical questionnaire                               | 100                 |
| 1998        | What on Earth is a CKO  | Earl & Scott   | Physical questionnaires & Interviews                 | 20                  |
| 1999        | Survey on KM  | Management Review and AMA Research Institute             | Physical questionnaire                               | 1626                |
| 1999        | KM in France  | Arthur Anderson – Trivium – Valoris                      | Physical questionnaire                               | 68                  |
| 2000        | KM Research Report  | KPMG – Harris Research Centre                            | Longitudinal study                                   | 423                 |
| 2001        | Enquete KM  | KM Technologies  | Physical questionnaire & web-based questionnaire     | 49                  |
| 2001        | Assessing KM Initiative's Success as a Function of Organisation Culture | Riberie  | Web Survey   | 70                  |

Source: Adapted from Chauvel, D & Despres, C (2002), A Review of Survey Research in Knowledge Management: 1997-2000, *Journal of Knowledge Management*, Vol 6 , Iss 3, p207-223.

### **3.4 Approach Taken by this Study**

Given the discussion and the table above, there seems to be a precedent in the KM field of leaning towards the positivist end of the research philosophies continuum. With regard to this study however, the choice of research philosophy was made independently of previous research and was based on a consideration of the original objectives of the research.

The two broad objectives of the research are firstly to establish the critical success factors for KM, and secondly, to establish whether the existence of a



KM programme makes a positive contribution to perceptions of organisational success.

In meeting these objectives, a mixed methods approach was employed. The first stage of the research utilised an interpretivist approach in order to establish and confirm the critical success factors to be used in the research. This was done through the analysis of findings from interviews with key players in industry coupled with the use of the researcher's own observations and prior knowledge of the industry. This reflects the interpretivist approach given the small sample size and in-depth analysis of meanings.

The second stage of the research employed a positivist approach through the use of a large scale survey to assess the relationship between the identified critical success factors and KM programmes and perceptions of organisational success. Measurement of certain variables is one of the key characteristics of the positivist approach. Further, the development and testing of the nine research hypotheses developed as a result of the interview with key players gives further credence to the use of this methodology as formulation and testing of hypotheses is a key feature of the positivist approach.

Another major aspect of the positivist approach is the objective stand that the researcher takes when conducting the research. This was viewed as critical to the credibility of the research as the researcher has lengthy experience in the Financial Services industry which would have coloured her interpretation and analysis of findings from the large scale survey. Arguably, this would be an acceptable and integral part of the research under the interpretivist approach but considering the second aim of the research of objectively measuring the impact of each variable on the success of KM initiatives, this was deemed inappropriate for the purposes of the research in hand.

One of the reasons why a mixed methods approach was chosen and a purely positivist or a purely interpretivist approach was rejected was because a purely positivist approach would not enable the research to incorporate the views of key players from industry which confirmed findings from the literature and

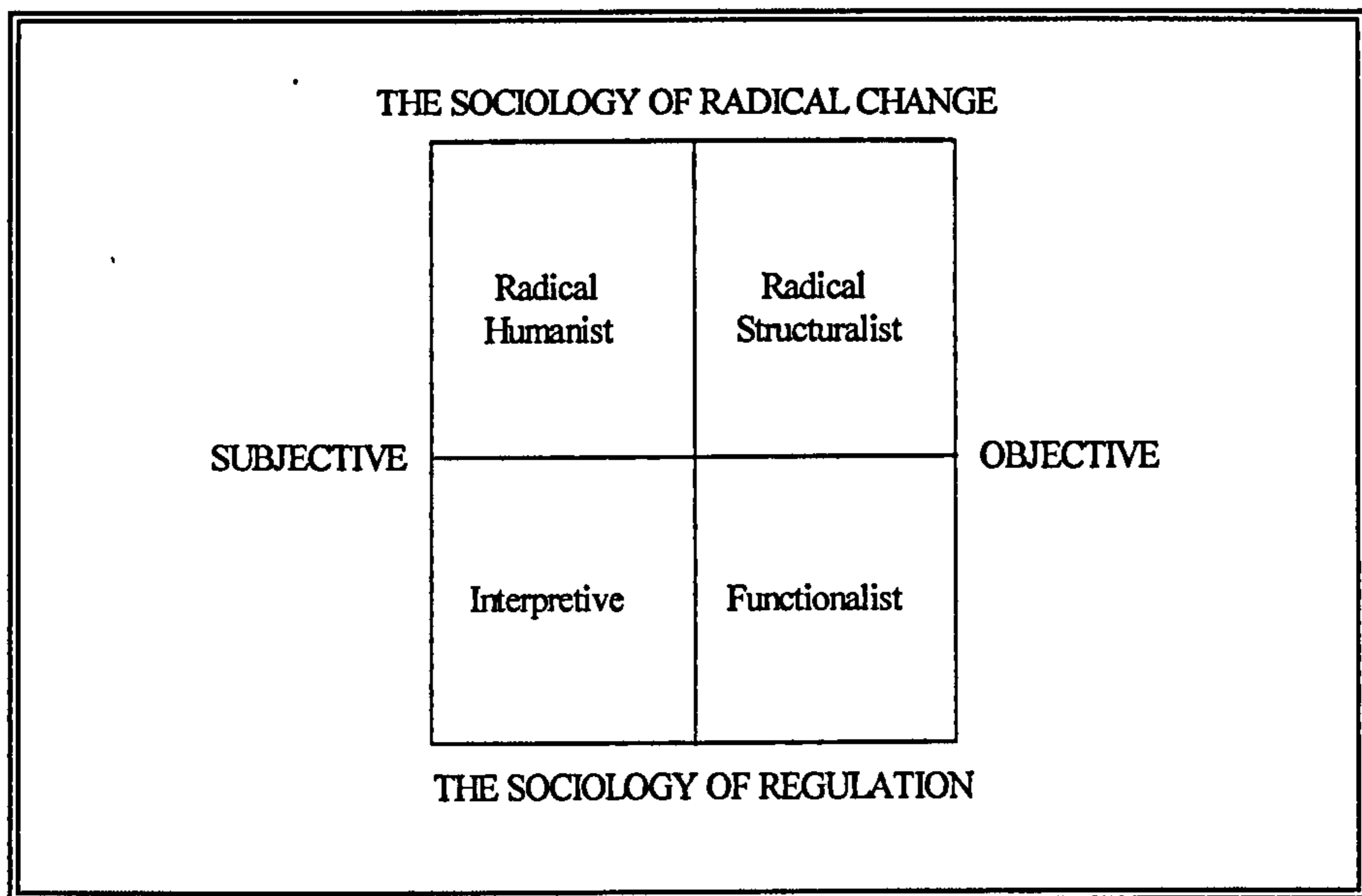
made the research more robust. A purely interpretivist approach was rejected however because this approach relies heavily on the in-depth analysis of a small number of cases in order to understand behaviour (Bryman and Bell, 2003). Given that the purpose of this study is to identify which variables have an effect on the success of KM initiatives and their impact on perceptions of overall organisational success, the use of a small sample may give an indication of what the key variables are but it would be difficult to infer any reasonable conclusions regarding the whole population. Hence a purely interpretivist approach was deemed inappropriate. This is especially important given the size of the industry in which the study is being carried out.

Many of the reasons for rejecting the interpretivism approach also apply to the realism approach. The main aim of realists is to uncover the underlying mechanisms behind reality (Fisher, 2004). However, the purpose of this study is to identify which variables are more central to the success of KM programmes and not to find out the reasons behind why this is the case. Although this may be a valuable pursuit, this has been identified as an avenue for further research and is not within the scope of the current study.

### **3.4.1 Positioning of this Study**

The extreme characteristics of the positivist-interpretivist continuum are based on a one-dimensional perspective of research philosophy. In order to expand this focused debate and introduce another dimension, The Framework of Social Theory (Burrell and Morgan, 1979) was developed. It is argued that all social theorists can be located within this framework and as such, this framework is popular and commonly used in management research.

**Figure 3.2: The Framework of Social Theory**



*Source:* Burrell, G. and Morgan, G. (1979) *Sociological Paradigms and Organisational Analysis*. London, Heinemann, p22.

As shown in figure 3.2 above, this framework has a two-dimensional matrix structure with four alternative paradigms. The subjective-objective dimension is coupled with the consensus-conflict dimension to produce four different paradigms. On the horizontal axis, there is an obvious similarity with the traditional positivist-interpretivist view of research. However, the vertical axis represents social change within society and whether people act on their own free will or their actions are determined by their environment.

Thus, each of the resulting cells represents a set of meta-theoretical assumptions about the nature of social science and society. Burrell and Morgan (1979) argue that the paradigms are mutually exclusive even though they may share some common features with either of their neighbouring paradigms. The following is a brief outline of each of the paradigms:

- **Functionalist Paradigm**

Closely aligned to the positivist tradition, the functionalist paradigm is underpinned by the assumption that social structures have observable functions

that revolve around rational human actions. This approach takes an objective point of view.

- **Interpretive Paradigm**

Whereas the functionalist paradigm is closely aligned to the positivist approach, the interpretive paradigm, as the name suggests, is rooted in the interpretivist tradition. This paradigm espouses the importance of human thought and interpretation in the formation of social reality which is based on a set of shared meanings and assumptions between the actors in that social reality.

- **Radical Structuralist Paradigm**

Sharing the objective approach of the functionalist paradigm, radical structuralists view change as a result of socio-economic class struggles. Radical structuralism views the occurrence of change through conflict, domination, contradiction and deprivation.

- **Radical Humanist Paradigm**

The radical humanist paradigm on the other hand is more closely aligned to the interpretivist tradition focusing more on subjectivity and human thought. In order to achieve change, radical humanists believe in the need to remove social constraints that can limit human potential.

Given the discussion in section 3.4, it is evident that the current study best fits between the interpretive paradigm and the functionalist/positivist paradigm with the focus being on interpreting views from actors in the social reality together with an objective analysis of the factors that lead to the success of KM programmes and their effects on perceptions of organisational success.

It is important to note at this stage that there is a trade-off between breadth and depth of the research which runs parallel to the positivist/interpretivist

continuum. The positivist approach allows for a broader range of data as large sample sizes are utilised. However, in doing this, the richness of data is somewhat compromised. Conversely, the interpretivist approach allows for the collection of rich in-depth data through smaller sample sizes but is limited in the range of data collected. Thus, adopting a mixed methods approach overcomes these constraints and it is suggested that this is sometimes more beneficial (Saunders et al., 2003) and can minimise the limitations posed by the breadth versus depth debate. The design of the research is discussed in greater detail in the following sections.

Thus, in summary, this chapter has so far considered the underpinning assumptions of the three main methodological approaches of positivism, interpretivism and realism. Further, these approaches were explored in relation to the current study and justification was made as to the choice of research philosophy adopted. This discussion was then developed using the Framework for Social Theory (Burrell and Morgan, 1979) which is an influential model in management research and was used to position the study.

The chapter now turns to the consideration of the actual research design. The following sections deal with the methods employed to collect the data. Development of the survey instrument and rationalization for the scales used will also be presented. This is central to the study and provides the rigorous and robust base upon which the research was built. Further, issues of piloting, sampling and details of the administration of the questionnaire will also be described. Procedures undertaken to ensure validity and reliability of the results are discussed and finally data analysis procedures are presented.

### **3.5 Triangulation**

Given the growing body of opinion favouring the use of multi-methods in collecting data (Saunders et al., 2003), triangulation was used in this study as a framework for the development of a three stage research design (see figure 3.3).

Triangulation, a term borrowed from navigation, is where a minimum of three reference points are used to check an object's location (Smith, 1975). This can be applied in social research either through triangulation of theories, where theories from another discipline are used to explain a situation; triangulation of data where data is collected from different sources or over different time frames; or triangulation by investigators where people collect data on the same subject independently and findings are then compared. Further, triangulation of analysis entails the use of different methods of analysis in order to verify findings (Denzin, 1988).

It has been suggested that researchers can strengthen confidence in their findings as a result of employing triangulation (Bryman, 1995) since it adds an extra dimension of rigour and allows for better generalisability. For the purposes of this study, triangulation of data was utilised and data was collected initially through a thorough review of the literature, then from semi-structured interviews and finally from a large self-completed questionnaire.

The next section provides a discussion of the development of the theoretical framework underpinning the research and a description of each of the research stages.

### **3.6 Development of Theoretical Framework**

Paramount to establishing a rigorous and robust research design is the development of the theoretical framework underpinning this research. As outlined in the table below, a three staged approach was adopted in order to allow the development of theory at every stage to inform subsequent stages.

Thus, to ensure that the factors identified in the first stage are indeed the correct and comprehensive set of factors that impact on KM initiatives, the first stage was a broad review of KM literature which highlighted key areas of investigation in the field such as measurement of knowledge, and also confirmed the importance of the study of CSFs to the KM field (Davenport et al., 1998).

The critical review of literature identified a wide range of factors that potentially could have an effect on KM success. Thus the next stage was an iterative process, whereby each of the factors was assessed independently, with the aim of establishing which of these factors were recurring in the literature and were linked to KM success and perceptions of organisational success.

The result of this process was that some factors such as “size of organisation” (Bennet, 2001) and “financial position of organisation” (Brooking, 1996) were eliminated as there was limited support in the literature for the impact of these factors on KM success and perceptions of organisational success. Other factors were combined into one heading which covered the majority of research in that particular area. An example of this is “innovation” which covers areas such as creativity, group think, and outcomes of communities of practise.

A final outcome of the iterative literature search process was the confirmation of some factors. Primarily, factors such as culture and knowledge sharing were confirmed as key factors impacting on KM success and perceptions of organisational success. In total eight factors were identified as recurring factors, in the literature, associated with KM success and perceptions of organisational success. One more factor was added, based on researcher experience and observation, which was that of time. Thus, in total, nine factors were identified as affecting KM success and perceptions of organisational success. This stage formed the basis for the development of the theoretical framework underpinning this research.

The next stage utilised the outcomes of the literature review to confirm or disconfirm findings from the first stage. Key players from industry were interviewed with the objective of establishing whether the nine identified constructs were indeed viewed as necessary and sufficient factors for KM success by those actively operating in industry. The interviews also had the aim of crystallising the constructs and terminology as understood by key players in industry. This was a very important step in the development of the theoretical framework underpinning this research as the identified constructs are very

broad and needed to be clarified in order to be able to arrive at useful conclusions. For instance, much of the literature identified in stage 1 highlighted the importance of culture for KM success and perceptions of organisational success but there was a degree of variance in the type of culture most associated with KM success. Thus, the interviews served to confirm which type of culture was perceived by key players in industry as impacting on KM success.

The interview process indicated clearly that four out of the nine constructs were perceived by key players in industry as impacting on KM success. This raised the question of whether the other five constructs should be eliminated from the research process at this stage or not. For the purposes of inclusivity, the decision was taken that all constructs would be carried forward into the final stage of the research. This was because it was deemed more viable to eliminate constructs as not having an impact on KM success post the final stage of the research than post the interview stage. Although the aim of the interviews was to confirm or disconfirm the association between the identified factors and KM success, findings from the literature indicated the existence of other constructs as well and hence these could not be disregarded and were carried forward to the final stage of the research.

The findings from the interview stage enriched the outcomes of the research and allowed for a deeper analysis of results to be undertaken. This deep analysis of findings was reflected in the development of the final stage of the research further strengthening the theoretical framework underpinning the research.

Thus, having reviewed the literature and analysed the interviews, the final stage was a large scale survey with the aim of establishing the association between the nine constructs and KM success as well as perceptions of organisational success. Pre-validated survey tools were used for all but one of the constructs, in order to increase the validity and reliability of findings. For the time construct, as no pre-validated survey tool could be found, a new tool was developed. The pre-validated survey used tools were not merely adopted but were adapted to suit the financial services industry in which the survey was



being conducted. This adaption process was primarily informed by feedback and responses from interviewees regarding the different constructs as well as their perception of KM as a whole.

Thus, as discussed above, the three staged research design allowed for the development of the theoretical framework underpinning this research to be informed by findings from each stage of the research and relevant actions and amendments to be incorporated into the research based on these findings.

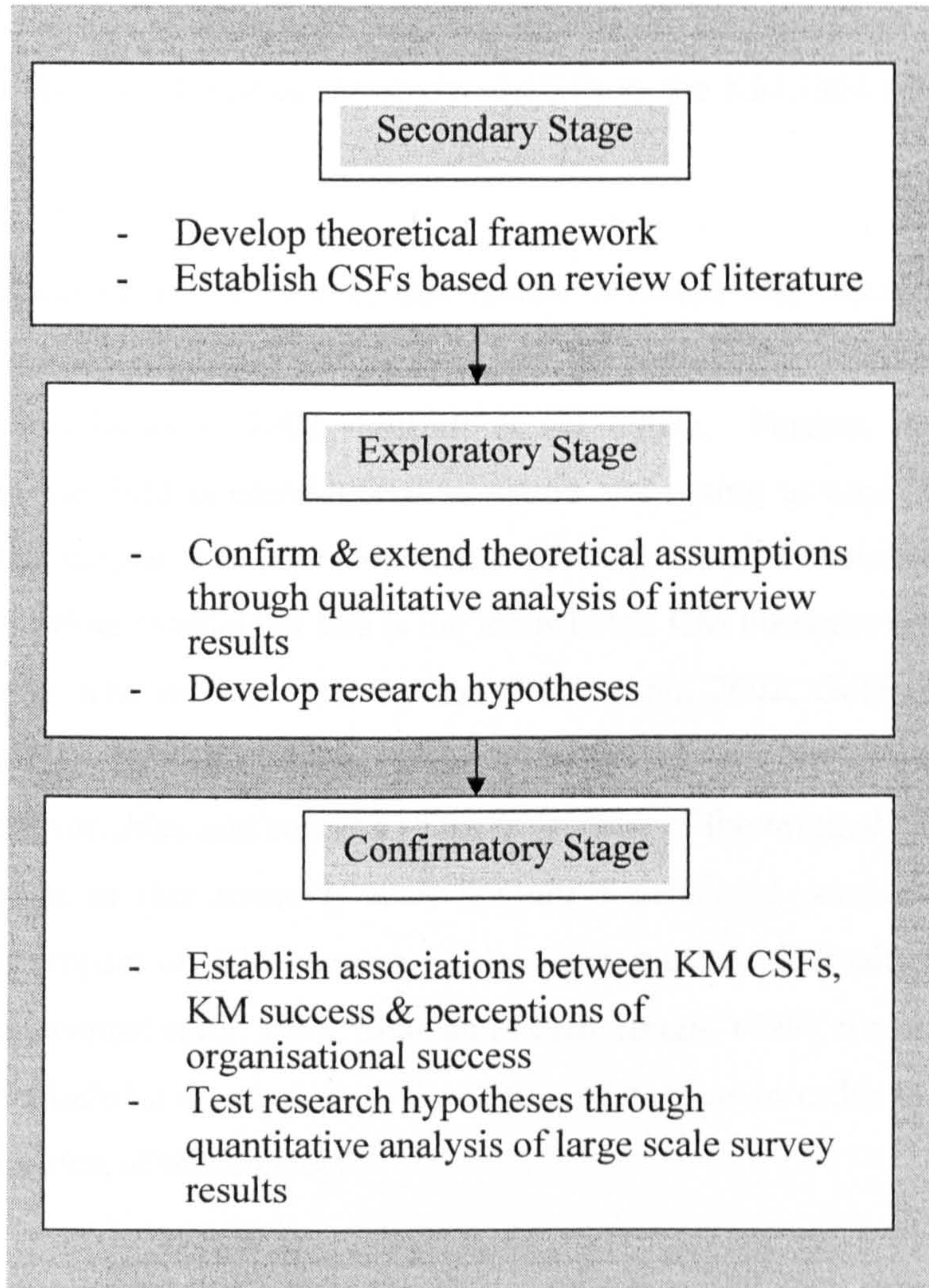
The table below outlines the steps taken in every stage of the research together with justification and resulting outcomes for every stage. This is followed by a diagram summarising the research protocol.

**Table 3.3 Research Stages, Justification & Outcomes**

| <b>Steps Taken</b>  | <b>Justification</b>  | <b>Outcome</b>   |
|---|---|--|
| <b>STAGE 1</b>  |   |  |
| Review of KM CSFs literature                              | To establish developments of previous research in the area  | - Previous research generally focused on singular phenomenon affecting KM success  |
| Identification of most common/recurring CSFs              | Wide array of literature on CSFs – needed to focus on factors identified as having an impact on KM & perceived organisational success                                     | Identification of 8 key factors that impact on KM & perceived organisational success (plus one additional factor added from researcher observation). |
| <b>STAGE 2</b>  |   |  |
| Semi-structured interviews with 9 key players in industry | -Confirm findings from stage 1<br>-Allow for other themes/constructs to be presented  | Confirmation of 4 out of 9 of the factors  |
| Testing understanding of constructs by key players        | -Broad constructs –e.g. culture, therefore need to establish what key players understand by construct<br>-Confirm if understanding is similar to findings from literature | -Clearer understanding of constructs<br>-Used to inform development of survey tool & Theoretical framework for research                              |
| Clarification of terminology/terms of reference           | KM is new area – thus needed to establish clear understanding of terminology/terms of reference   | -Clear terms of reference established<br>-Used to inform development of survey tool  |
| Use of latent content analysis to analyse findings        | Common method of analysing qualitative data   | Development of themes regarding CSFs & perceived   |

| Steps Taken   | Justification  | Outcome   |
|---|--|---|
| Development of research hypotheses  | Allows for testing of research findings using rigorous & robust methods.   | organisational success<br>Development of 9 research hypotheses that can be tested.                                      |
| <b>STAGE 3</b>  |  |   |
| Review of constructs in light of interviews                                 | All constructs reviewed to ensure results from interviews are incorporated into survey tool  | For purposes of inclusivity, all 9 constructs used – no constructs were removed   |
| Choice of survey tool   | -Purpose of research is to identify CSFs for KM – not to develop new measurement tool. Therefore pre-validated tools used.<br>-Use of pre-validated tools increases validity & reliability of results  | -Identification of survey tools that can be adopted / adapted.<br>-For “time” construct – no pre-validated tool existed |
| Refinement of survey tools based on interviews and aims of current research | -Pre-validated tools used in different contexts & for different purposes – thus needed to be adapted for purposes of this research.<br>-Need to incorporate findings from stage 2 into development of survey instrument - e.g. term “KM” may provoke fears in some respondents | -Refined survey instrument<br>-Development of new survey instrument for time construct                                  |
| Wider data collection through self-completed questionnaires                 | -Use of self-completed questionnaires reaches wider audience – increases ability to confirm findings from interviews<br>-Preferred method in positivist approach   | 191 completed questionnaires from respondents in Financial Services industry  |
| Data Analysis using SPSS  | -Confirm findings from large scale survey<br>-Rigorous & robust method<br>-Common practise in positivist approach  | Findings established as detailed in Chapter 4   |

Fig 3.3 Research Protocol



The next sections describe the practicalities of each of the three stages of the research.

### 3.7 Stage 1: Literature Review

The first phase of this research was completed through a comprehensive critique of current literature. Given the size and scope of the literature concerning KM, the main focus of the literature review was to identify the factors that affect the success of KM initiatives, and to ensure that the factors identified are indeed the correct and comprehensive set of factors that impact on KM initiatives. In order to have confidence in the identified factors, the review of literature was a

multi-stage process incorporating an iterative structure. The first stage was a broad review of KM literature which highlighted the key areas in KM and also confirmed the importance of the study of CSFs to the KM field (Davenport et al., 1998).

As was discussed in Chapter 2, this review revealed that much of the KM literature lacked empirical testing and was predominantly practitioner based (Chauvel and Despres, 2002, Moffett et al., 2003). Further, much of the research in the field is correlational in nature attempting to establish whether and to what degree a relationship exists between isolated variables and KM success. A prime example of this is the focus in the KM literature on the impact of culture on KM success (Garvey and Williamson, 2002, Gold et al., 2001, Hislop, 2005). This study however analyses the relationship between various independent variables and success. This forms one of the original contributions to knowledge as this research takes a multi-dimensional perspective on the factors that impact on KM success. Also, owing to the difficulty in defining success (Davenport et al., 1998, Shan and Scarborough, 1999), the review of the literature included a discussion of the notion of success in order to enable the operationalisation of this concept.

The critical review of literature identified a number of factors that potentially could have an effect on KM success. The next stage sought to assess which of these identified factors was a recurrent theme in the KM literature and was continually linked with KM success and perceptions of organisational success.

While some factors were eliminated (e.g. size of organisation and financial position of organisation) others were confirmed as being associated with KM success. In general, certain factors had to be grouped under one comprehensive heading as different research gave different labels to similar areas. For example creativity, group think, and outcomes of communities of practise were all grouped under the innovation heading.

Finally, the iterative literature search process confirmed some factors as being continuously linked with KM success and perceptions of organisational success.

In total, the literature review arrived at eight factors identified as associated with KM success and perceptions of organisational success. One more factor was added, based on researcher experience and observation, which was that of time. Thus, this stage identified the nine factors that were to be carried forward to the next stage and were to be confirmed through interviews with key players in industry. This stage formed the basis for the development of the theoretical framework underpinning this research.

### **3.8 Stage 2: Exploratory Research**

The aim of this second stage of the research was to confirm and understand the nature of the influences that the variables identified in the literature had on success, and ensure that they reflect the main concerns of the participants in the KM industry. The research adopted an inductive approach for the exploratory stage in order to ascertain the main factors that lead to success in KM programmes. As was highlighted previously, much of the research in KM is theoretically based and it was deemed essential to explore whether the variables proposed by the theory as impacting on KM success were validated by those actively using KM. Also it was important to establish whether these factors were viewed as necessary and sufficient for KM success by key players in the industry (Markus and Robey, 1988).

Therefore, in order to confirm the variables and ensure that no others emerged, one-to-one semi-structured interviews were used. The interviews were semi-structured in order to address a particular topic but also to allow for any emergent themes to develop (Jankowicz, 2000). The flexibility offered by this type of interview format allowed for a number of themes to be explored yet did not restrict the topics covered or the flow of conversation (Kumar, 2005, Saunders et al., 2003). This was integral to the aim of this stage of the study which was to confirm variables identified from the literature but also allow other issues to be presented.

Further, as a sample of the population was used to carry out the interviews; this reduced potential research bias in the selection of variables to be used in the

study (Wilson, 2002b) and confirmed findings from stage 1 of the literature review. The interview process was piloted with the supervisory team and a number of minor changes were made as a result.

A total of nine interviews were conducted over a three months period. Eight of the interviews were face-to-face and one interview was conducted over the telephone due to difficulties encountered in arranging a mutually convenient time and location.

The interviewees were all senior managers from both public and private sector organisations. The two main common denominators for all interviewees were that they were either working directly in a KM initiative, or were employed by an insurance/financial institution, or both. Although the research will focus primarily on private sector organisations, it was deemed necessary to have a mix of both public and private sector companies as some literature indicates a difference between the two and it was vital to validate this in the interviews (McAdam and Reid, 2000a). However, the understanding of the financial services sector enhanced the researcher's credibility and enabled her to ask richer and more probing questions in the interviews.

Further, although the total population was compiled of organisations that both had and did not have a KM programme, for the purposes of the exploratory stage, all interviewees were employed in organizations that operated a KM programme. This was deemed necessary in order to address the research questions of the project and identify which factors were considered critical to KM success and whether KM is perceived as a contributor to perceptions of organisational success. A decision was taken not to interview organisations that did not have a KM programme as these would not be able to contribute to confirming the variables identified in the literature or establishing what other factors might affect KM success within an organisation.

All interviewees were either personal contacts or contacts of personal contacts. Although an element of researcher bias may exist, it would have been very difficult to get interviews by any other means, due to the immaturity of the field and the lack of a dominant official body through which potential interviewees

could have been contacted. A profile of the role and employing organisation of the interviewees together with a corresponding label for each interviewee is presented below.

Table 3.4 Interviewee Profiles

| Label | Role                         | Employing Organisation     |
|-------|------------------------------|----------------------------|
| R1    | Corporate Services Manager   | Riverside Housing          |
| R2    | Marketing & Business Analyst | Todd & Ledson              |
| R3    | Corporate Manager            | Pricewaterhouse Coopers    |
| R4    | Clinical Knowledge Manager   | Strategic Health Authority |
| R5    | Head of Business Relations   | HM Treasury                |
| R6    | Knowledge & Comm. Manager    | Pricewaterhouse Coopers    |
| R7    | Library Manager              | NHS Health Information     |
| R8    | Knowledge Manager            | Anderson Consulting        |
| R9    | Compliance Manager           | Royal Liver Assurance      |

The venue for the interviews was the interviewees' office location as this was most convenient for the participants. The interviews lasted between 45 minutes to one hour.

Given that the aim of the exploratory stage was to confirm findings from the literature, interview questions generally emanated from previous studies. Table 3.5 below presents the questions asked and the main studies upon which these questions are based. However, as is the case in semi-structured interviews, these questions were only used as a guide and a starting point and other areas were also probed dependant on interviewee responses.

**Table 3.5: Interview Questions and Relevant Studies**

| <b>Question</b>   | <b>Studies</b>   |
|---|--|
| What are you doing in terms of KM?                                      | (Alavi and Leidner, 2001, Davenport and Prusak, 1998)  |
| Why now?  | (Davenport et al., 1998)   |
| When was the need for KM identified in your organisation?               | (Davenport and Prusak, 1998)   |
| Is KM something being done by the organisation as a whole?              | (Davenport et al., 1998)   |
| What are your aims by doing KM?   | (Davenport and Prusak, 1998)   |
| How does this contribute to the overall aims of the organisation?       | (Ahn and Chang, 2004, Marr et al., 2004),  |
| What do you hope to achieve by doing KM?                                | (Garvey and Williamson, 2002)  |
| How do you measure if what you have done is successful?                 | (Bontis et al., 1999, Cope, 2000, Gooijer, 2000)   |
| What things make KM successful?   | (Ahmed et al., 1999, Boynton and Zmud, 1984, Chourides et al., 2003, Holsapple and Joshi, 2000), |
| What problems do you face/envisage in pursuing KM initiatives?          | (Goh, 2002, Hall and Goody, 2007, Huber, 2001, McDermott, 1999)                                  |
| What do you see KM as having done for the organisation in 5 years time? | (Marr et al., 2004, Nonaka, 1991)  |
| What are your employees' feelings on KM?                                | (Carter and Scarborough, 2001, Gloet and Berrel, 2003, Tampoe, 1993)                             |
| Who takes responsibility for KM initiatives in your organisation?       | (Jones et al., 2003)   |
| How does KM map in with / help your customers?                          | (Spender and Grant, 1996, Nonaka, 1991)  |
| How is KM rewarded?   | (Bock and Kim, 2002, Kohn, 1993, Lucas and Ogilvie, 2006)  |

Tape recording was identified as the most suitable method of fully capturing the content of the interviews. Through tape recording, the interviewer could focus on the conversation and maintain eye contact with the interviewee, which have been found to be helpful in an interview situation (Creswell and Plano Clark, 2007, Oppenheim, 1992) without having to be concerned with note-taking. Therefore, permission was sought prior to the interview taking place from all eight face-to-face interviewees to use the tape recorder and all eight granted permission. This was obviously not possible for the telephone interview and hence note-taking was used.



In order to validate responses, rephrasing of answers was carried out continually throughout the interviews. This allowed for both the interviewee and the interviewer to check understanding of responses and reduce interviewer bias (Jankowicz, 2000, Oppenheim, 1992).

Promptly after each interview, the tape recording was transcribed and a “summary document” created from the transcription. The creation of the summary documents allowed for the removal of excess text (such as pleasantries, comments etc) and provided a synopsis of the interview.

Once all nine summary documents had been compiled, latent content analysis was used to identify the commonalities and differences between the key informants’ accounts. Latent content analysis is a method of classifying data into units and then condensing the meaning from those units in order to come up with specific themes (Patton, 2002) and is commonly used in qualitative analysis (Krippendorff, 2004). This method was therefore deemed most suitable for the requirements of this stage of the research process allowing the development of clear themes which can then be used to inform the design of the questionnaire and research hypotheses which can be tested in the third stage of the research.

Through content analysis, the exploratory phase confirmed most, but not all of the variables highlighted by the literature. The variables perceived to be of most significance to successful KM by the interviewees were culture, knowledge sharing, IT facilities and time. However, time is the one variable that is not discussed sufficiently in the literature indicating a real need for further research into this area.

Although highlighted in the literature, variables such as organisational structure and job satisfaction were not viewed as important by the interviewees. Nonetheless, these were carried forward into the third stage of the research to establish whether or not they have an effect on success as compared with the variables that are perceived to be important.

Thus, the result of the second phase of the research was confirmation of the variables identified in phase one together with a deeper understanding of the issues facing KM participants in industry. This allowed for the development of the research hypotheses and formed the basis for the development of the survey instrument discussed below.

### **3.9 Stage 3: Survey**

To enable data regarding the nine variables to be empirically captured, a survey instrument was developed that covered the literature identified in stage one as well as the hypotheses developed as a result of the exploratory research in stage two. Based on the discussion in section 3.4 earlier in the chapter, self-administered postal questionnaires were deemed the most appropriate survey instrument for the purposes of this study. Given the large number of variables under question together with the large size of the population, the most suitable method to collect data was questionnaires.

Self-administered questionnaires gather quantitative data using closed or fixed-response questions where the respondents are limited in the choice of answers available and are required to mark the answer that most closely represents their opinion or feelings on the topic in hand (Oppenheim, 1992).

Although self-administered postal questionnaires suffer from a number of drawbacks including the inability to ask complex or probing questions, the failure to develop rapport with respondents, the slow speed of collection and the typically lower response rate as compared with other methods (Frazer and Lawley, 2000), self-administered questionnaires are still very useful in gathering specific data that can easily be compared and analysed.

It is argued that although the use of closed or structured questions forces respondents into adhering to pre-defined answers limiting the representation of individual views, closed questions do allow for better detection of similarities and differences amongst the sample population (Converse and Presser, 1986).

This is one of the aims of this research in reaching a general view of the variables affecting success.

The questionnaire is divided into three main sections as described below:

**Section 1:** deals with how the individual perceives him/herself within the organisation.

**Section 2:** deals with the individual's perceptions of how the organisation operates.

**Section 3:** deals with the categorisation data and introduces the term "KM".

A copy of the full questionnaire can be found in appendix 1.

### **3.9.1 Design of the Questionnaire**

The five-page questionnaire is predominantly based on the use of a summated rating scale, or what is commonly termed a Likert scale, requiring respondents to rate a series of statements. Likert scales are the most common method of measuring attitudes in management research (Saunders et al., 2003). This method is valid and frequently used in management research ((Easterby-Smith et al., 2002). Likert scales do not measure attitudes per se, but show one respondents' strength of view in relation to others in the population, thereby forming a picture of the overall attitudes of the population (Kumar, 2005).

Other than the fact that Likert scales are commonly used, another major consideration in the adoption of this type of scale is that they are easily completed (Zikmund, 2003) and given the length of the questionnaire and the number of variables being investigated, this was deemed an important factor in order to enhance the possibility of increasing the response rate.

Further, it was never the intention of this research to develop a new measurement scale as this was not one of the aims of the research. The

contribution to knowledge emanates not from the development of a new scale but from the analysis of the effects of nine different constructs on the success of KM projects within organisations and the impact on overall perceptions of organisational success.

Thus, sections one and two were based purely on a three directional five-point Likert scale. Three directional scales gather data regarding positive, negative and neutral points in the study populations' views (Kumar, 2005). The five-points on the Likert scale elicit the required level of detail for the purposes of this study. Although a 7-point Likert scale may gather more detailed data, it may also introduce unnecessary confusion into the survey whereas a three point scale would be too restrictive and would not truly represent the population's attitudes.

To avoid further confusion or misrepresentation of data, a "don't know/N/A" category was added allowing a distinction between a neutral view and lack of a view to be made. This is very important as it may have implications for how the data is analysed.

It is important to note at this stage that there is some debate in the literature on whether Likert scales generate interval or ordinal data (Newman, 1994). However, it is argued that carefully designed scales, reflecting relative quantity or degree of magnitude can be used as interval (Schertzer and Kerman, 1985). Given that this study relies heavily on pre-validated questionnaires which treat Likert scales as interval data, it was deemed appropriate for this study to follow suit.

Section three of the questionnaire was predominantly concerned with the collection of categorisation data. Again, there is debate in the literature regarding whether it is more beneficial to have categorisation data at the beginning or at the end of the questionnaire (Frazer and Lawley, 2000, Oppenheim, 1992). The merits of having the classification data at the beginning centre around ease of completion and engaging respondent interest (Webb, 2002) whilst the merits of leaving classification data until the end

include a potential increase in response rates as respondents, having completed the more challenging part of the questionnaire do not abort the process when faced with simple questions (Frazer and Lawley, 2000). Given the length of the survey and the awareness of the importance of response rates, a decision was made to leave the categorisation data to the end of the questionnaire.

The development of the questions and justification for the use of particular scales is discussed in greater detail in section 3.8.2 below.

In designing the questionnaire, a number of principles of question wording were considered. The table below shows the general principles regarding question wording and how they were applied in this study.

**Table 3.6: Question Wording Principles**

| <b>Question Wording Principle</b> | <b>Application in this Study</b>   |
|-----------------------------------|--|
| Brief questions                   | Questions were kept as brief as possible without loss of meaning   |
| Words uniformly understood        | Jargon was removed<br>Understanding was tested through piloting  |
| Abbreviations                     | No abbreviations, however common, were used  |
| Vagueness                         | Clarity of question was tested through piloting<br>Clarity of answers sought was ensured through providing tick boxes etc.                       |
| Levels of precision               | Unnecessarily precise answers were not requested to increase co-operation from respondents   |
| Necessity of question             | Questions were only included on a 'need to know' basis in relation to the 9 hypotheses developed in the study                                    |
| Double questions                  | Double questions were separated into 2 independent questions even though this had implications for the length of questionnaire                   |
| Double negatives                  | Double negatives were removed through the piloting process   |
| Mutually exclusive                | Dichotomous questions were used  |
| Bias                              | Most questions were based on pre-validated questionnaires. Those questions that were developed arose out of the literature and exploratory stage |
| Objectionable                     | Sensitive question were placed at the end to increase likelihood of co-operation.<br>Confidentiality was ensured                                 |

| Question Wording Principle       | Application in this Study  |
|----------------------------------|--|
| Willingness to give information  | Design of the questionnaire minimised effort on the part of the respondent<br>Question regarding age may have been sensitive but issue was not raised through piloting |
| Demanding questions              | Survey was predominantly seeking view<br>Tick boxes provided to reduce effort  |
| Too much knowledge assumed       | Where knowledge of a particular topic was not guaranteed, a 'don't know/NA' option was provided  |
| Question technically accurate    | Mainly pre-validated questionnaires used<br>Pilot testing  |
| Stand alone questions            | Clear language and complete sentences were used.<br>No questions were reliant on previous questions  |
| Clarity of instructions/criteria | Use of different sections to refer to individual or organisational views<br>Instructions/categories provided at the top of every page                                  |
| Applicability to all respondents | Questions collecting views so applicable to all respondents<br>Don't know/NA category provided for most questions  |
| Leading questions                | Use of pre-validated questionnaires<br>Pilot testing   |
| Format of questions              | Minimum effort on part of respondents<br>Shading used to allow ease of completion  |
| Hypothetical questions           | No hypothetical answers were sought as not within the aims of the study  |

Source: (Adapted from Frazer and Lawley, 2000, Questionnaire Design and Administration, John Wiley & Sons Australia Ltd)

### 3.9.2 Instrument Development

The instrument developed sought to collect two types of data. The bulk of the questionnaire (sections 1 and 2) collected attitudinal data concerning the nine hypotheses developed. The last part of the questionnaire (section 3) collected categorisation data in order to allow for analysis and comparison of results. The development of questions for each of these types of data is discussed below.

### **3.9.2.1 Attitudinal Data**

As mentioned previously, it was never the intention of this research to develop a new measurement tool, but rather to adapt existing tools and apply them in a unique industry.

Owing to the large number of variables under investigation, there was a lack of a single pre-validated questionnaire that could be used to collect all the data. However, a number of previous questionnaires were adopted and or adapted to measure the impact of certain variables on the success of KM.

The two major variables on the questionnaire are those of culture and climate. Due to the multi-dimensionality of these variables, they attract the largest number of questions on the questionnaire, 73 and 68 respectively. For one of the variables; time, no previous research instrument could be identified, and suitable questions were thus developed.

The survey instrument was based mainly on two previous questionnaires which have both been tested and validated in the management domain. Other questionnaires were also used but these only contributed to a few items in the overall survey instrument. These are discussed below providing the rationale and justification for the adoption of the particular questionnaires used. Appendix 2 provides tables listing the questions that relate to each variable (as this is not evident in the final questionnaire).

- Organisational Climate Questionnaire – Furnham

The first questionnaire on which the survey instrument is based is the Organisational Climate Questionnaire (OCQ) (Furnham and Gunter, 1993) which utilises 108 items to measure employee perceptions. It is argued that single item measures generally frame concepts narrowly whereas multiple item measures are generally believed to improve confidence that the constructs of interest are being correctly assessed and the measurement of the variable will be

more consistent (Churchill, 1979). Therefore, multiple item measures are used for most variables to improve the reliability and validity of the measures.

Although the name refers to organisational climate, this is used as a broad term and focuses more on employee perceptions as a whole within an organisation. This questionnaire is divided into 14 sections with different headings including elements of culture, climate, reward, organisational structure, innovation and job satisfaction. As such, this is a broad and inclusive measurement tool.

Originally, the OCQ was tested with over 500 employees across the UK and Europe at all levels of the organisation. Initial results showed highly satisfactory internal reliability together with closely related scales tested through correlational analysis (Furnham and Gunter, 1993). This therefore increases the applicability of this questionnaire to other organisations and industries.

Although a number of employee perception questionnaires exist, this particular one was chosen for a number of reasons. Firstly, this questionnaire was developed with the aim of overcoming validity and reliability shortfalls inherent in previous surveys (Furnham and Gunter, 1993), thus particular attention was given to internal reliability and validity of the measures. Further, the questionnaire attempts to be “parsimonious yet comprehensive” (Furnham and Gunter, 1993, p3) covering all of the broad range of aspects necessary to form a true picture of employee perceptions. Additionally, the questionnaire was set up with a national and international perspective in mind therefore allowing for better comparability of results. Although this is not one of the aims of the current study, it opens up avenues for further research in the longer term.

- Organisational Culture and KM – Riberie

The other main influence in the development of the survey instrument was the questionnaire developed by Ribiere (2001) which sought to identify the relationship between organisational culture and KM. This questionnaire was



based on two previous well recognised questionnaires that deal with the measurement of culture per se.

The first is the Goffee and Jones (1998) Corporate Culture Framework which categorises organisational culture based on the two dimensions of sociability and solidarity (see section 2.4.1.1). The second basis for Ribiere's questionnaire was the survey developed by De Furia (1997) which measures organisational trust within an organisation. The combination of sociability, solidarity and trust form a picture of culture within the organisation. Both of these questionnaires are well recognised, tested and validated tools frequently used in the measurement of culture. However, it was deemed more appropriate to adopt the questionnaire developed by Ribiere (2001) as it had a specific focus on the impact of culture on KM.

Although these two questionnaires are very broad and encompass many issues, elements of other questionnaires were also incorporated to increase the reliability of the measurement tool. These included the Knowledge Management Scan developed by Van Den Hooff et al (2003) which attempts to measure the current state of play of KM in an organisation. Thus, parts of this questionnaire were used to measure knowledge sharing, reward and innovation.

Further, the work by Wright and Taylor (2003) investigated the effects of organisational structure and organisational climate on improved knowledge sharing. Thus, this was useful to examine the organisational structure variable in more depth. For the job satisfaction variable, the Job In General questionnaire (Ironson et al., 1989) was adapted. This is a well recognised global measure designed to assess a person's feelings towards their job.

It is important to note at this stage that although this research did not develop a new research tool, it also did not simply adopt previous research tools. Any surveys that were used were adapted in terms of question wording and emphasis so that they are more applicable to the target respondents. This was checked through the piloting process to ensure that there were no ambiguities in the

questionnaire. It was not felt however that these changes would affect the validity or reliability of the final instrument.

One of the criticism of the current study may be that there is an over reliance on a small number of previous questionnaires. However, the choice of survey instruments used was based on a rigorous set of criteria pertaining to validity and reliability as well as applicability to the KM area. All of the questionnaires used in the development of the survey instrument for this study were previously validated surveys that demonstrated reliability. Further, the questions were not blindly copied but were adapted to suit the target audience of this study.

Appendix 2 lists the questions related to each variable. As can be noted, the same questions can be used to analyse different variables. The analysis of the variables is discussed in greater detail in chapter 5.

#### **3.9.2.2 Categorisation Data**

The final section of the questionnaire sought classification data on the respondents. The main purpose of classification data is to allow for the development of research profiles enabling testing of results amongst different categories which may reveal interesting relationships between the categories and shed further light on the factors affecting the success of KM programmes.

For the purposes of categorisation, nominal data was sought on the majority of variables. Nominal data identifies or describes a subject and assigns a number or label to the subject but these only indicate the presence or absence of an attribute; not the amount (Hair et al., 1987).

The questions in this section moved from the general to the specific, so respondents were initially asked to identify their organisation's strategic focus, given the choice between efficiency/cost reduction, quality, innovation or customer satisfaction. An option of 'don't know' was added as a result of the interview process which highlighted that not all employees were aware of their organisation's strategic focus.

At this point, the questionnaire introduced the term 'knowledge management' and asked respondents to state whether or not their organisation ran a knowledge management programme. Again, an option of 'don't know' was added to avoid either non response or forced response which may skew the findings. This question is pertinent to the research as it divides the sample into those aware of a KM programme and those unaware of the existence of a KM programme and allows for comparison amongst the two groups. The relevance of this distinction is one of the tenets of this research and was discussed in section 2.2.1. The respondents were also asked to rate their understanding of KM as a concept ranging from 'never heard of it' to 'a great deal'.

Other questions in the questionnaire asked respondents to confirm the industry within which their organisation was operating. Although the target population was primarily organisations operating in the financial services sector, it was important to ensure that respondents in other industries aligned to this sector could be identified (e.g. IT). This would allow for comparison of the effects of industry alignment on perceptions of success.

The questionnaire then posed questions relating to the respondents' role within the organisation. Firstly, respondents were asked to confirm the department for which they worked and their job title. These were open questions and respondents were allowed to put in the exact department name and job title. This is owing to the large number of varying labels that are given to roles and departments and it was deemed more inclusive to pose an open question and collapse the answers at a later stage.

Information regarding the employment status of employees (i.e. full-time, part-time or contractor) was also sought. Although the financial services industry is not notorious for having part-time or contracting staff, it was still important to establish if there were any difference in perceptions of success between the different categories.

Within the role profile data, a question was also included relating to the respondents' level within the organisation (Executive/CEO/Director to Front line employee). This was an important element to ensure no representative bias in the sample and that results are not skewed by the over representation of one category. This is especially pertinent for research in the KM field as it is a relatively new area and therefore KM initiatives are more likely to be supported by senior managers which may have implications for their perceptions of success.

The questionnaire moved on to the more specific questions relating to respondents' gender, age, length of time with the organisation and length of time in the current role. For these questions, ratio data (in years) was collected. As ratio data is viewed as the highest form of measurement precision (Hair et al., 1987) it was important to collect exact data to enable more accurate statistical analysis, which could then be collapsed into categories or bands.

Again, the primary reason for collecting this type of data was to ensure an even spread of respondents to avoid representative bias and to allow for comparisons to be made amongst the different categories. Due to the immaturity of the KM field, there is limited research that addresses the impact of such things as gender and experience on perceptions of success, yet it is an area that has been identified as important and needs further exploration (Ong and Lai, 2007).

The final question on the questionnaire asked respondents to rate their understanding of the tasks required in their current role. This question was left until the end as it may be viewed as slightly offensive, yet it was an important question to ask in order to establish respondents' levels of understanding of their job especially for organisations that operated a KM programme.

### **3.9.3 Layout Considerations**

In developing the survey instrument, a number of layout considerations were taken into account. Primarily, Likert scales were used as the main response

format because they are quick and easy to use (Zikmund, 2003) which is key in self-administered questionnaires (Fisher, 2004).

Further, the questionnaire was divided into three sections and each of these sections was subsequently divided into sub-sections. Questions were grouped by topic area and presented in a logical order to build a sense of continuity. The same or similar topic headings were used for sections 1 and 2 ('myself within the organisation' and 'the organisation as a whole') in order to enhance the continuity element. Different fonts were used to indicate headings, sub-headings and questions in order to provide a neat and professional finish to the questionnaire.

The questionnaire started with the most important questions and sensitive questions were left until the end. This was used to encourage greater response as having made a time and effort investment to complete the questionnaire, respondents were less likely to abandon completion of the questionnaire (Frazer and Lawley, 2000). Further, the categorisation questions were left until the last section as they were the simplest of the questions to answer.

Page layout was also taken into consideration in order to make the questionnaire user friendly and easy to read. Shading was used to differentiate the questions and guide the eye across the page. Tick boxes were provided to enable easy completion of questions. As an outcome of the pilot testing, it was advised that headings for the scale be repeated at the beginning of every section. This was incorporated into the design of the questionnaire.

Blue paper was used to print the questionnaire. This was important as it added to the professional look of the questionnaire but also encouraged response as the blue paper would be evident in a pile of white papers.

Finally, messages at the beginning and end of the questionnaire were used to reconfirm the purpose behind the questionnaire, stress the confidentiality aspect, give an indication of the time it may take to complete the questionnaire and thank respondents in advance for their time and effort. Also, a return name and

address were provided in case the pre-paid envelope was lost as well to give legitimacy to the questionnaire (Frazer and Lawley, 2000).

### 3.9.4 Pilot Testing

In order to ensure the clarity, presentation, layout as well as alignment to research objectives, the questionnaire went through a number of iterations of pilot testing.

Initially, the questionnaire was pilot tested among the supervisory team. The team were tasked with fully completing the questionnaire and making comments on clarity, layout, and alignment to research objectives. They were also asked to record the time it took to complete the questionnaire. Following this exercise, a number of minor amendments were made in respect of sequencing of questions as well as clarity of wording within particular questions.

The next round of pilot testing was conducted among a sample of the target population. Convenience sampling was used to identify ten respondents as this number is considered sufficient for pilot testing purposes (Fink, 1998). Prior to the pilot exercise, the researcher spoke to each of the respondents individually and briefed them with regard to the purpose of the exercise and asked them to provide honest and critical feedback on a number of aspects including clarity, layout, presentation, timing, ease of completion as well as any other comments they may have. The results of this exercise are detailed in table 3.7 below.

Table 3.7 Results of Pilot Testing Exercise

|                        |   |
|------------------------|---|
| Language               | All language clear and easy to understand   |
| Layout                 | Easy to follow  |
| Clarity                | Clear instructions and terminology  |
| Presentations          | Professionally presented  |
| Ease of completion     | Tick boxes and shading welcomed<br>Requested to add scale at the top of every section               |
| Sequencing             | Logical order of sections   |
| Length                 | Generally viewed as being long but removal of any questions could not be justified methodologically |
| Time taken to complete | Most completed within 15-20 minutes. Covering letter changed to reflect this timing                 |
| Other                  | No other comments   |

### **3.9.5 Sampling**

Given the fact that a comprehensive sampling frame that includes all financial services institutions is not readily available, the online FAME database was used to generate a mailing list. This database allowed searches of UK organisations that operate in the financial services sector. An initial search produced 54,000 results. Within this sampling frame, a random sample of 1500 organisations was chosen. Owing to the fact that the general response rate for business research is around 10% (Jankowicz, 2000), 1500 was viewed as a sufficient number of mailings to target.

Any organisations which did not have a mailing address or a contact name were eliminated and the search continued until a complete mailing list of 1500 organisations including mailing addresses and contact names could be achieved. It was deemed necessary to send the questionnaire to a particular named person in the organisation in order to encourage response. There is obviously no guarantee that the targeted person would be the one completing the questionnaire but this does not impact on the result of the questionnaire.

A number of other distribution channels were pursued in order to increase the response rate. The first was the distribution of questionnaires by the researcher to friends and colleagues working in the financial services industry. A total of 35 questionnaires were distributed in this manner, resulting in 20 responses.

Further, the researcher gave out 150 questionnaires at the Mortgage Expo held in Manchester which is a mortgage exhibition but attracts many different organisations from the financial services sector.

The different distribution channels and resulting response rates are highlighted in table 3.8 below.

Table 3.8 Questionnaires Distributed and Resulting Responses

| Distribution Channel | No. Distributed | No. Returned | Response Rate |
|----------------------|-----------------|--------------|---------------|
| FAME                 | 1500            | 123          | 8%            |
| Mortgage Expo        | 150             | 48           | 32%           |
| Direct               | 35              | 20           | 57%           |

Analysis of the response rate indicates a modest response for those organisations identified through FAME. A number of reasons can be attributed to this. Mainly, although the use of Likert scales meant that the questionnaire was relatively easy to complete, the length of the questionnaire may have been a discouraging factor for some respondents. However, removal of any of the questions could not be justified methodologically and the trade-off between higher response rates or completeness swayed in favour of completeness. Furthermore, organisations approached through FAME, although provided with a covering letter, had no prior knowledge of the research and this is likely to have an effect on response rates (Frazer and Lawley, 2000).

The Mortgage Expo and direct distribution channels showed healthy response rates (32% and 57%) respectively owing to the fact that direct distribution is more likely to return higher responses (Fink, 1998). This is because meeting respondents face-to-face and explaining the reasons for the research is more likely to encourage respondents to complete the questionnaire. In many of these situations, the questionnaires were collected on the spot.

### **3.9.6 Features to Promote Response**

Whilst one of the major advantages of self-administered questionnaires is the relative ease with which they can be administered and the lack of influence of the researcher over the respondent, one of the major drawbacks of this method is the difficulty in achieving a high response rate (Churchill, 1979). This, coupled with the immaturity of the KM field (Moffett et al., 2003) and a limited understanding of KM as a concept which may negatively impact on the



responses to questionnaires, meant that a number of features needed to be incorporated into the questionnaire process in order to encourage response.

Firstly, all questionnaires were sent out or handed out in a pack including a covering letter, the actual questionnaire, a pre-paid envelope and the researcher's business card. The covering letter served the purpose of introducing the research, highlighting its importance and ensuring confidentiality. A copy of the covering letter can be found in appendix 3. The covering letter also served the purpose of giving respondents the opportunity to receive a copy of the findings if they wished, by attaching their business cards or providing their name and mailing address. A total of 12 respondents took up this offer and they will be provided with a copy of results upon completion of the research.

The inclusion of a pre-paid envelope was another way of promoting response and ensuring that respondents do not have to incur any costs in participating in the survey. The use of blue paper on which to print the questionnaires was deemed an innovative way of capturing respondents' attention and encouraging completion.

The final method used to boost response rates was direct distribution of questionnaires at the Mortgage Expo. Being able to meet respondents in person, explain the reasoning behind the research and formally encourage completion was deemed an effective method of encouraging response. This is reflected in the response rates in table 3.8 above.

### **3.10 Ethical Considerations**

A number of ethical issues were considered by the researcher prior to the commencement of this research and especially prior to the data collection stage. Consideration of these issues enhances the credibility of research as it improves levels of trust between the researcher and respondent (Jankowicz, 2000). This is particularly important when collecting data through interviews where trust plays a vital role.

In conducting this research, ethical codes of practise guided by Liverpool John Moores University, the researcher's affiliated institution, as well as the researcher's own moral standards were adhered to both during the design and application of the research. These codes of practise are underpinned by general ethical codes for social research which revolve around four main areas; namely, harm to participants, informed consent, invasion of privacy and deception (Bryman and Bell, 2003). Table 3.9 below outlines the Liverpool John Moores university codes of practise and its application in this research.

**Table 3.9 Ethical Principles and Application in Research**

| Ethical Principle  | Application in Research  |
|--------------------|--|
| Consent            | <ul style="list-style-type: none"> <li>• Participants were given the option of participating or not participating in the research</li> <li>• Participants have the right to withdraw from the research at any point (no such requests have been made up to the present time).</li> <li>• Written or verbal consent is sought prior to involvement in the research</li> </ul> |
| Participant Rights | <ul style="list-style-type: none"> <li>• all participants were made fully aware of the requirements for involvement in the research</li> <li>• all participants were informed of the nature of the research</li> <li>• all participants were given the option to withdraw from the research at any time</li> </ul>   |
| Confidentiality    | <ul style="list-style-type: none"> <li>• confidentiality of participants is maintained at all times.</li> </ul>  |

### **3.11 Data Management**

In order to be able to turn raw data into useable information which yields useful results, consideration needs to be given to data management (Zikmund, 2003). Data management encompasses a number of steps including data capture, input, editing, screening and coding. These steps are equally applicable to both qualitative and quantitative data.

Data analysis is contingent upon each of these steps being conducted thoroughly in order to have confidence in the ensuing results. The next sections discuss each of these steps and their application in this research.

### **3.11.1 Data Capture**

The primary method of data capture for the exploratory interview stage was tape recording. This was the most efficient method of capturing all the information from interviewees. However, immediately following the interviews taking place, the interviews were transcribed and summary documents created which highlighted the main outcomes of the interview and removed excess information (pleasantries, comments etc.)

Self-administered questionnaires were the main tool of data capture for the survey stage of the research. The design and implementation of the survey was discussed in section 3.8. Once the completed questionnaires were returned, they were numbered and dated. This allowed for analysis to be conducted establishing any differences between early and late responses.

### **3.11.2 Data Input & Coding**

Upon receipt of the first ten completed questionnaires, the data input stage of the research was started. Given the large number of items on the questionnaire, SPSS V12 was used in order to facilitate managing the data and analysis of findings.

Prior to actual input of the data, variables were created. Each variable was given a label corresponding to the question on the questionnaire. Also, each variable's possible responses were coded. The majority of items in the questionnaire utilised a 5 point Likert scale ranging from strongly agree to strongly disagree, which were coded on a 1 to 5 range. The option of don't know was coded as 6 and any missing values were coded as 99 to ensure that it lay outside the range of legitimate answers and minimised confusion (Diamantopoulos and Schlegelmilch, 1997). There were a small number of reverse-worded items in the questionnaire and the coding for these items was reversed in order to reflect the statements.

Once the variables had been set up, manual input of responses began. This was an ongoing process until all questionnaires were received.

### **3.11.3 Data Editing**

One of the most important stages of the data management process, data editing includes identifying omissions and errors in responses (Diamantopoulos and Schlegelmilch, 1997). This ensures more rigorous and reliable results.

Data was edited for consistency and completeness. Editing for consistency involved ensuring that all responses were logical and consistent with the question asked (e.g. age and years of experience). The nature of the majority of questions (no filtered or ordered questions) and response format (Likert scale) did not lend itself to this type of error. The only sections which could have encountered errors of consistency were the age and experience questions. No such errors were found.

Editing for completeness on the other hand was concerned primarily with missing responses. Three questionnaires were received where full pages had not been completed. This was assumed to be respondent error but due to the large number of unanswered questions, these questionnaires were discounted from the usable sample. Among the 191 usable responses, there were 46 missing answers on various questions. Owing to the large number of items on the questionnaire (n=187), this was judged to be mere respondent error.

### **3.12 Data Analysis Procedures**

The first step in the analysis of most research projects is the descriptive analysis of the data and sample population. This is useful as it provides an initial investigation of the data and provides an insight into the findings (Diamantopoulos and Schlegelmilch, 1997).

For the purposes of this research project, descriptive analysis was undertaken to provide respondent profiles at a number of different levels. Initially, personal respondent profiles such as age and gender were examined. The next stage was

an investigation of the roles respondents held within the organisation. Building on this, organisational profile was also examined and finally, the KM environment was analysed. This gave a comprehensive picture of the makeup of the data allowing further analyses to be undertaken. The results of the descriptive analyses are presented in chapter 4.

Data analysis procedures also included an investigation of the reliability, representative bias and validity of the data. This ensured the rigor of the ensuing results. Once reliability, representative bias and validity had been explored, the next step was to proceed with actual analysis of data.

### **3.12.1 Reliability**

Reliability is the extent to which a variable or number of variables are consistent in what they are intended to measure (Hair et al., 1987). Given that the survey instrument is based on a total of nine constructs, the reliability of these constructs is key in ensuring the rigorousness of the research.

Cronbach's alpha is the most common method of measuring reliability (Field, 2005) in social sciences. A score of 0.6 or 0.7 is deemed to be the minimum level of acceptability (Hair et al., 1987) yet it is argued that even lower levels are acceptable in exploratory research. Table 3.10 below provides details of the alpha scores for the nine constructs.

In general, the internal scores for all the constructs were strong suggesting that the constructs are a valid measure and that the constructs actually measure what they were intended to measure.

Table 3.10 Reliability of Constructs

| Construct                | $\alpha$ |
|--------------------------|----------|
| Culture                  | 0.727    |
| Climate                  | 0.704    |
| Knowledge Sharing        | 0.732    |
| Job Satisfaction         | 0.772    |
| Organisational structure | 0.664    |
| Innovation               | 0.803    |
| Reward                   | 0.736    |
| Information Technology   | 0.603    |
| Time                     | 0.821    |
| (N=191)                  |          |

### **3.12.2 Representative Bias**

In order to explore the sample further and ensure that perceptions of success are not skewed by a particular group, a number of tests were conducted.

Initially, t-tests were used to compare a number of aspects. Male versus female perceptions of success; employees in managerial roles versus employees in non-managerial roles and employees who had a good understanding of KM versus those who had a limited understanding of KM were all tested.

Further, one way ANOVA tests were used to establish whether having a different strategic focus would have any impact on perceptions of success. Details of the results of these tests are presented below.

#### **3.12.2.1 Impact of Gender on Perceptions of Success**

Males constituted 65% of the sample while females constituted 32% of the sample (remaining 3% were missing responses). Given that the population of males was twice that of females, it was important to establish if there was a difference in perceptions of success between the genders which may skew the overall results. Table 3.11 below presents the results of the independent samples t-test.

Table 3.11 T-test – Gender vs Perceptions of Success

|        | n   | Mean | Std Deviation | t     | df  | Sig (2-tailed) |
|--------|-----|------|---------------|-------|-----|----------------|
| Male   | 123 | 2.14 | 1.19          | -.135 | 182 | .893           |
| Female | 61  | 2.16 | 1.27          |       |     |                |

A comparison of means showed that there was no marked difference in the mean scores of the two samples. The *t*-test confirmed that there was no statistically significant difference in perceptions of success between the two groups (at the 5% level).

**3.12.2.2 Impact of Position in Organisation on Perceptions of Success**

The respondent’s profile indicates that 23% of the sample population held senior managerial roles while 74% were in middle management or non-management roles (remaining 3% were missing responses). It was important to establish whether there was a difference in perceptions of organisational success held by the larger proportion of middle management and non-management roles compared to perceptions of organisational success held by those in senior management roles.

Table 3.12 T-test – Position in Organisation vs Perceptions of Success

|                                | n   | Mean | Std Deviation | t    | df  | Sig (2-tailed) |
|--------------------------------|-----|------|---------------|------|-----|----------------|
| Senior Mgt                     | 43  | 1.58 | 1.07          | 3.56 | 183 | .000**         |
| Non-Senior Mgt                 | 142 | 2.31 | 1.20          |      |     |                |
| ** Significant at the 1% level |     |      |               |      |     |                |

A comparison of means indicated that those in senior managerial posts agreed, to strongly agreed with the statement that their organisations were successful (mean score 1.58) whereas those in middle management or non management roles tended to be more neutral regarding this statement (mean score 2.31). The

*t*-test revealed that there was a statistically significant difference between the two groups' perceptions of success at the 1% level.

### 3.12.2.3 Impact of Level of Understanding of KM on Perceptions of Success

To further explore the sample, it was deemed important to establish whether having a better understanding of KM had any impact on perceptions of success. Given that three-quarters of the sample had either never heard of KM or only knew a little bit about it and 23% knew a fair amount or a great deal about KM, it was necessary to identify the variance in perceptions of organisational success amongst the groups.

Table 3.13 T-Test – Understanding of KM vs Perceptions of Success

|                             | n   | Mean | Std<br>Deviation | <i>t</i> | <i>df</i> | Sig<br>(2-tailed) |
|-----------------------------|-----|------|------------------|----------|-----------|-------------------|
| High understanding of<br>KM | 43  | 1.72 | 0.85             | -2.58    | 184       | .011*             |
| Low understanding of KM     | 143 | 2.24 | 1.25             |          |           |                   |

\* Significant at the 5% level

The *t*-test revealed that there was a statistically significant difference at the 5% level regarding perceptions of success amongst the two groups. Thus, those who had a better understanding of KM seemed to perceive their organisations as being more successful (mean score = 1.72) than those that did not have any or had limited understanding of KM (mean score = 2.24).

### 3.12.2.4 Impact of Organisational Strategic Focus on Perceptions of Success

Given that the organisations in the sample varied significantly in the strategic focus they pursued, it was important to establish whether or not this had any impact on their perceptions of success.

The One Factor between Subjects (One Way) ANOVA test was used to investigate whether the mean scores between the five groups was statistically significant.



Table 3.14 ANOVA – Organisational Strategic Focus vs Perceptions of Success

|                | Sum of squares | <i>df</i> | Mean square | <i>f</i> | Sig    |
|----------------|----------------|-----------|-------------|----------|--------|
| Between groups | 53.20          | 4         | 13.30       | 11.21    | .000** |
| Within groups  | 215.91         | 182       | 1.19        |          |        |
| Total          | 269.10         | 186       |             |          |        |

\*\* Significant at the 1% level

The tests revealed that there was a statistical difference, at the 1% level, in perceptions of success amongst the groups based on their organisation's strategic focus.

Thus, as detailed above, t-tests and ANOVA tests were used to establish whether or not there was any representative bias in the sample.

Initially, male and female perceptions of success were investigated, followed by the perceptions of success for those holding senior management roles as opposed to those in middle-management or non-management roles. Further, tests were conducted to establish if the levels of understanding of KM had an impact on perceptions of organisational success, as well as whether the organisation's strategic focus impacted on perceptions of success.

Key findings from these tests indicate that:

- There is no statistically significant difference between male and female perceptions of success.
- Position in organisation had an impact on perceptions of success where those in senior management roles viewed their organisations as being more successful than those in non-senior managerial roles. This difference is statistically significant at the 1% level.
- There is a statistically significant difference at the 5% level based on level of understanding of KM. Employees who had a high understanding of KM viewed their organisations as more successful than those who had a lower level of understanding of KM.
- There is a statistically significant difference, at the 1% level, in perceptions of success amongst the different groups based on their organisation's strategic focus.

These results indicate that there may be some variance in perceptions of organisational success amongst the sample however, given that the objective of the research was to establish an overall understanding of the factors that impact on perceptions of organisational success, these variances are not deemed to affect the findings of the research. The results are however interesting and pose an avenue for future research.

### **3.12.3 Validity**

Validity is the extent to which an instrument is measuring what it was intended to measure (Coolican, 1994a, Jordan, 1988), e.g. culture. It has been argued that validity is one of the most important considerations as it represents the credibility of research (Bailey, 1991). In the theoretical development of broad concepts such as culture, validity is important because these constructs are not observable. Relationships among these unobservable constructs are therefore tested indirectly via observed variables (Coolican, 1994b). Thus, validity reflects how well a measure, or set of measures, reflects the unobservable construct.

Content validity refers to the extent to which measures represent all facets of a given concept (Hair et al., 1987). The main method of ensuring content validity for the purposes of this research was the use of well established pre-validated questionnaires. These broad multi-dimensional surveys (such as OCQ) limited the threats to validity and ensured that the instrument was actually measuring all elements of the construct.

Construct validity on the other hand refers to whether a scale measures the unobservable social construct under review (Nunnally, 1978), e.g. culture or climate. Again, the use of pre-validated questionnaires minimised the risks of lack of construct validity. Also, the mixed-methods approach used in this research ensured construct validity as key participants in the area informed the choice of constructs under investigation. Further, pilot studies at each stage with academics and practitioners also enabled the scales used to be checked.

Having established the reliability and validity of the constructs, the next stage was to develop correlation and regression analysis procedures which will yield the bulk of the quantitative results for this research. These are discussed below.

#### **3.12.4 Correlation Analysis**

One of the aims of this study is to establish the impact of individual constructs on perceptions of organisational success. Correlation analysis was deemed the most appropriate method to achieve this aim as correlation analysis tests whether a relationship exists between two variables (Field, 2005).

There is support in the KM literature for the use of correlation analysis in establishing the association between variables (e.g. Bock and Kim, 2002, Ribiere, 2001) and therefore, this research is not diverging from norms set in the KM field.

However, before embarking on testing the relationships between the constructs and perceptions of organisational success, it was important to establish if there was an overall difference in perceptions of organisational success between organisations that were aware of the existence of a KM programme and those organisations that either did not have a KM programme or did not know whether one existed. For the purposes of this thesis, the nomenclature that will be used for these two groups is “organisations operating in a KM environment” and “organisations operating in a non-KM environment”.

Correlation analysis involves initially setting up compound variables in SPSS in order to enable the testing of the association between two variables. Appropriately labelled compound variables were set up in SPSS for the nine constructs and these were then tested against the perceptions of organisational success item. The resulting correlation coefficients ( $r$  values) indicate the strength of association between each individual construct and perceptions of organisational success for each of the two groups. The results for these tests are presented in section 4.6.2.

### **3.12.5 Regression Analysis**

The final step in the analysis procedures was to use the data to predict the impact of specific variables on perceptions of organisational success. This would allow the prediction of which variables have most impact on perceptions of organisational success in the two groups of organisations. The most suitable method of establishing this relationship is through using regression analysis.

A number of regression analysis methods are available but the choice of which method to use is governed by the type of research being conducted and the outcomes sought. Hierarchical regression for example is best used when the choice of predictors can be based on previous theory and therefore the predictors are entered on the basis of their importance. The forced entry method on the other hand, allows all the predictors to be entered onto the model simultaneously but again, this needs to be based on previous theoretical research which indicates that all predictors are of equal importance (Field, 2005). Stepwise regression is different in that the variables are chosen purely based on their mathematical impact on the outcome variable. Therefore, all variables are entered into the model and the variable that has the highest simple correlation with the outcome variable is chosen first. This process is repeated until the variables entered into the model no longer make a significant impact on the model's ability to predict the outcome (Field, 2005).

For the purposes of this research and given the lack of previous empirical research which assigns priority and importance to the identified constructs, stepwise regression was deemed the most suitable method of establishing a robust model of predictors of organisational success. However, before the actual regression analysis can be carried out, a number of assumptions for regression need to be addressed. These assumptions, together with their application in this particular research are detailed below.

### 3.12.5.1 Assumptions for Regression Analysis

- *Sample size*

The sample sizes for this research are 62 organisations that operate in a KM environment and 125 organisations that operate in a non-KM environment. Following Miles and Shevlin (2001) recommendations, 60 is a reasonable sample size where there are up to 20 predictor variables.

- *Variable type*

All items in the constructs making up the predictor variables, as well as the outcome variable were quantitative, continuous and unbounded (i.e there was no constraint on the variability of the responses).

- *Non-zero variance*

No zero variance was exhibited in the sample. All construct variables showed some variance in value.

- *Independent errors*

The Durbin-Watson test is used to check whether the residual terms from any two observations are uncorrelated or independent. The outcomes of the Durbin-Watson test are detailed below.

Table 3.15 Results for Independent Errors

| Sample                | Durbin-Watson |
|-----------------------|---------------|
| KM Organisations      | 2.195         |
| Non- KM Organisations | 1.73          |

The results indicate that both values for the Durbin-Watson test are close to 2 which is generally regarded as acceptable (Field, 2005)

- ***Multicollinearity***

In order to address the multicollinearity assumption, both the VIF (Variance Inflation Factor) and tolerance statistic are investigated. The results are outlined below.

Table 3.16 Results for Multicollinearity

| Sample                | VIF  | Tolerance |
|-----------------------|------|-----------|
| KM Organisations      | 1.33 | 0.75      |
| Non- KM Organisations | 1.64 | 0.69      |

The results above show that the VIF figures are close to 1 and well below 10 which is generally accepted as an indicator of the lack of existence of collinearity. Further, the tolerance statistic for both samples is well above 0.2 allowing the conclusion to be drawn that no collinearity exists in the samples (Field, 2005).

- ***Linearity***

One of the basic assumptions of regression is that of linearity. The scatterplots below indicate that the mean values of the dependent variable for each increment of the independent variables lie along a relatively straight line for both of the samples. Thus, the assumption of linearity has been met.

Fig 3.4. Scatterplot - Organisations Operating in a KM Environment

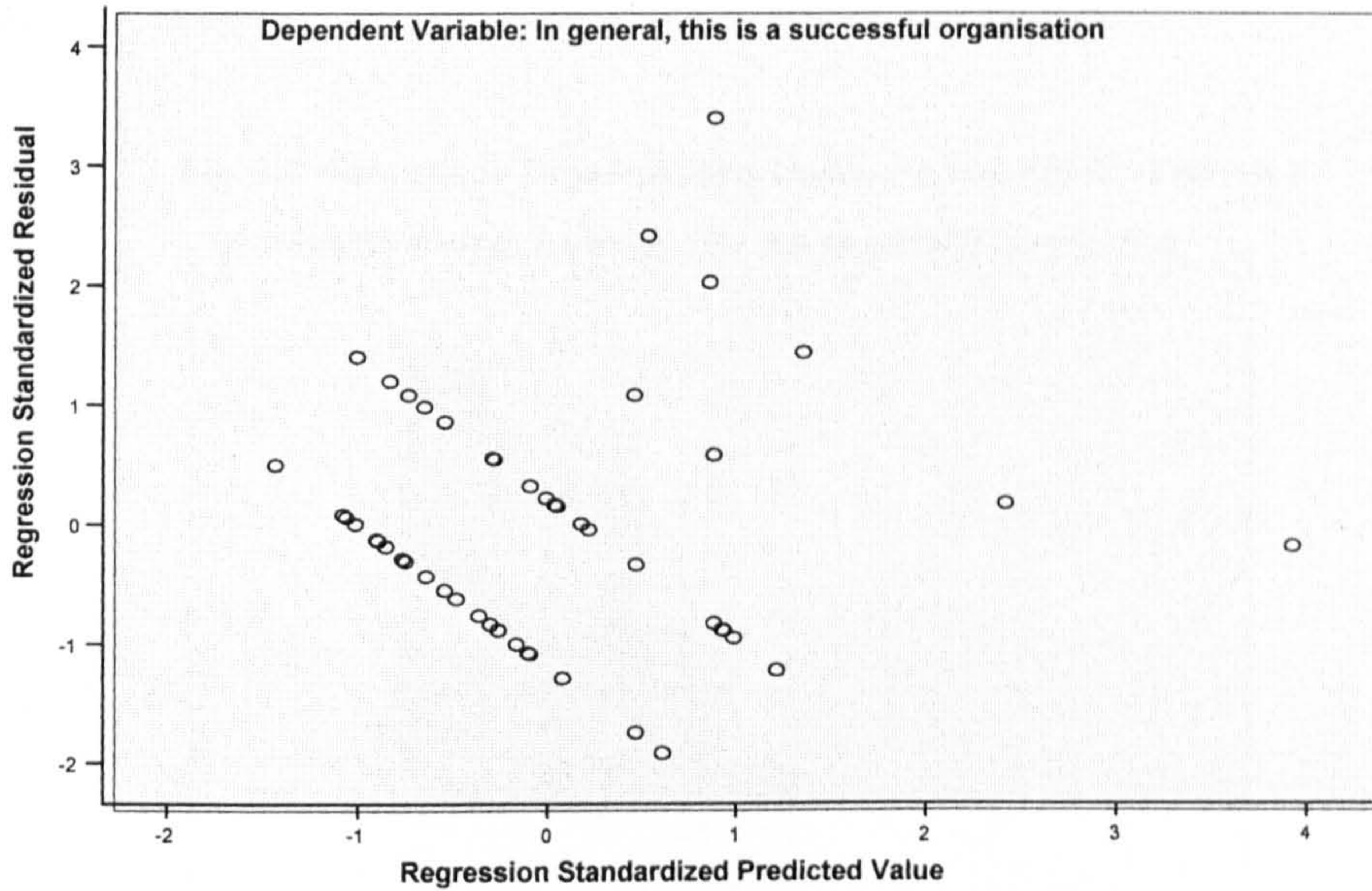
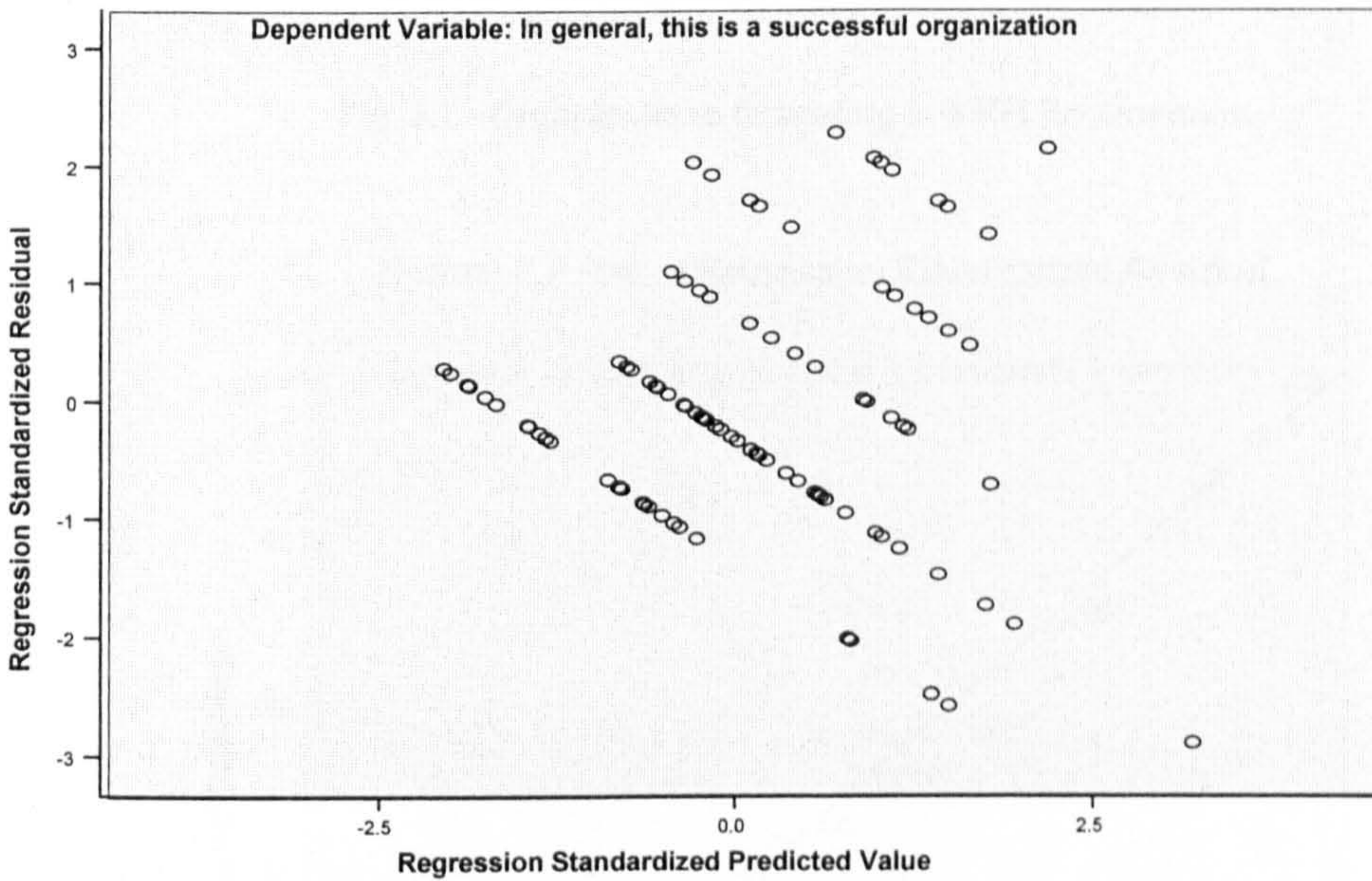


Fig 3.5. Scatterplot - Organisations Operating in a Non-KM Environment

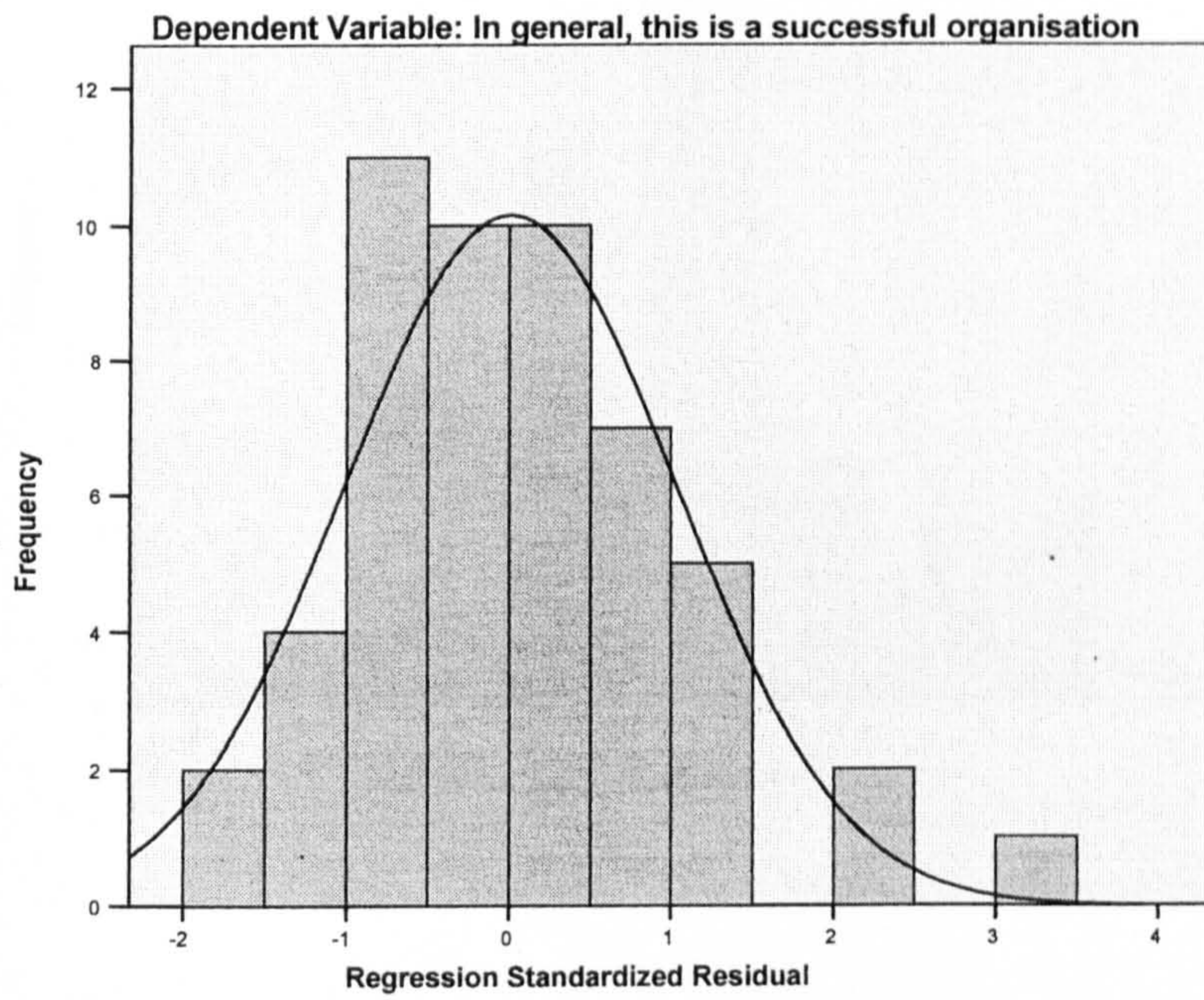


- **Normality**

In order to check for normality of the samples, histograms and probability plots are utilised. Histograms for both samples show a relatively normal distribution. Furthermore, the normal probability plots show that observed

residuals (points on the graph) lie either on the line or very close to the line for both samples.

**Fig. 3.6 Histogram - Organisations Operating in a KM Environment**



**Fig. 3.7 - Organisations Operating in a KM Environment**

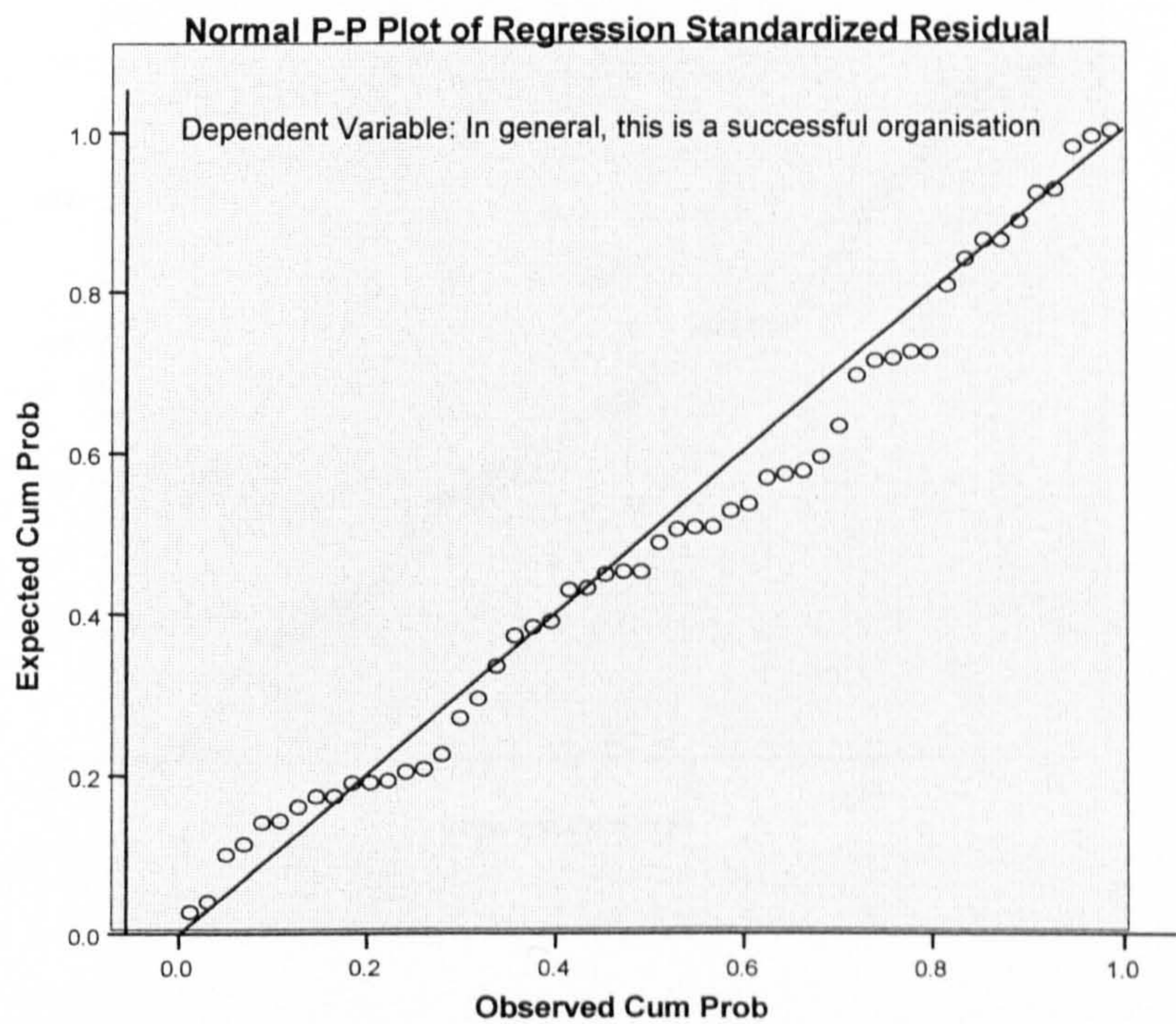




Fig. 3.8 Histogram - Organisation Operating in a Non-KM Environment

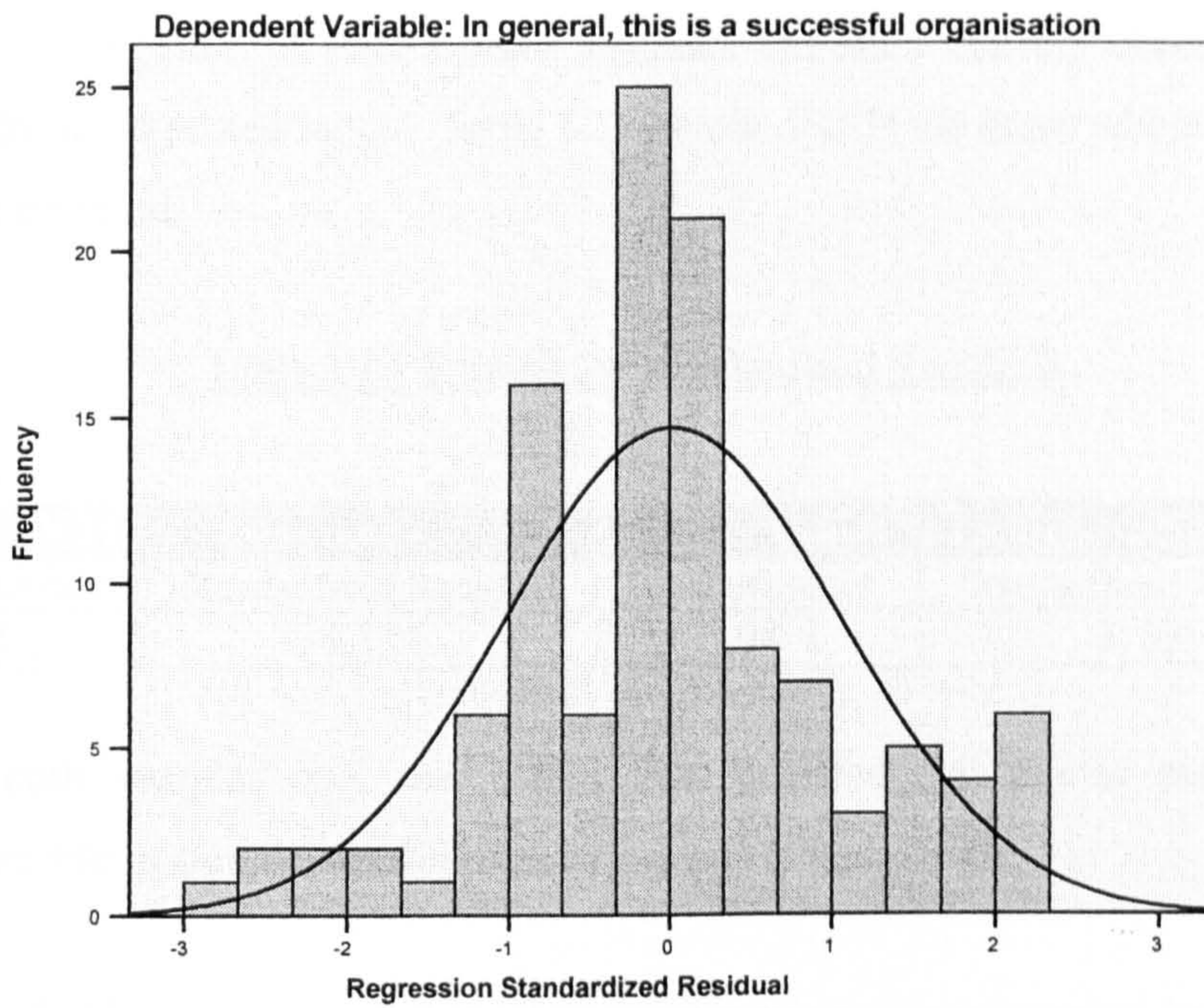
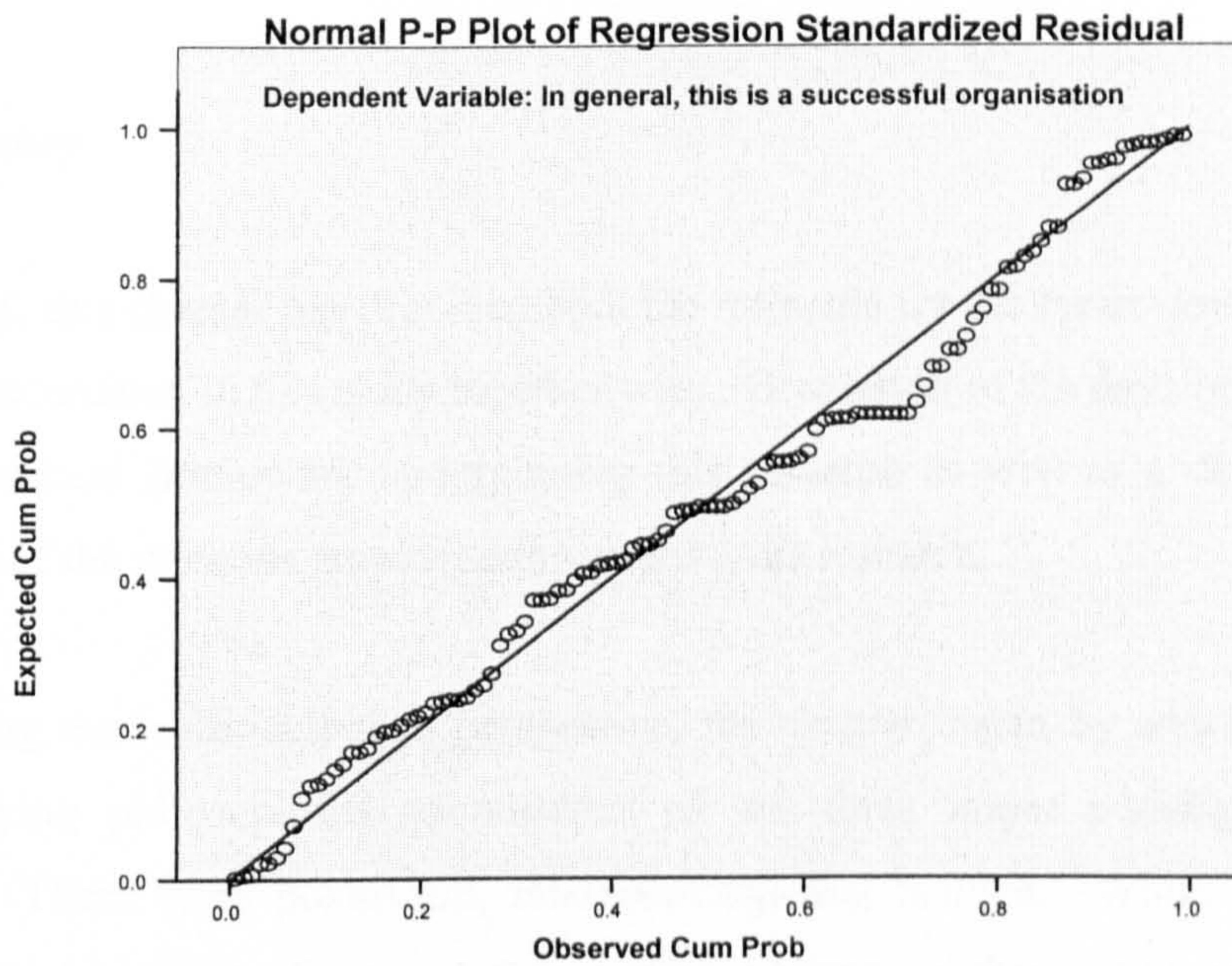


Fig. 3.9 - Organisations Operating in a Non- KM Environment



- **Outliers**

The investigation of standardised residuals indicated that the outliers were within the expected range. Table 3.17 below details the cases where outliers were detected.

Table 3.17 Results for Standardised Residuals

| <b>KM Environment</b> |                              | <b>Non-KM Environment</b> |                              |
|-----------------------|------------------------------|---------------------------|------------------------------|
| <b>Case Number</b>    | <b>Standardised Residual</b> | <b>Case Number</b>        | <b>Standardised Residual</b> |
| 126                   | -3.178                       | 94                        | 3.404                        |

For both samples only one outlier was detected and this is considered reasonable in sample sizes similar to this one (Field, 2005).

Thus, having established that all the assumptions for regression have been met, the regression models are now developed with confidence in the findings of these models. The results of the regression analysis are presented in section 5.7 in chapter 5.

### **3.13 Summary**

In summary, this chapter has provided both the rationale for the methodological approach undertaken in this study together with a discussion of the development of the theoretical framework underpinning this research as well as a detailed description of the methods employed to carry out the research.

In discussing the methodological perspective, the chapter began by addressing the underlying philosophical assumptions of the three major paradigmatic traditions. These were positivism, interpretivism and realism. While many other approaches exist, these paradigms were chosen as they represent the different, extreme views, which prevail in the management and social science disciplines. These paradigms were explored in relation to previous KM literature and specifically this project. This provided a critical review of the

methodological choices available, as well as a rationale for the choices made in this particular study.

The chapter next turned to a discussion of the theoretical framework underpinning this research highlighting how the different research stages informed the development of the research ensuring the rigorousness and robustness of the study.

The chapter moved on to a discussion of the research methods employed in the overall design of the research and specifically in each of the phases. A description of the exploratory stage of the research included a discussion of interviewee profiles as well as questions asked. The aim of the interviews was to confirm and validate findings from the literature and therefore all interview questions were related back to the relevant literature. Analysis methods for the exploratory stage were then presented.

An in-depth explanation of the development of the research instrument utilised in the survey stage then followed. This research instrument was based on previously validated surveys and these were thus presented in order to justify the scales used.

The chapter then explained and justified the remaining research methods used in the data collection process including pilot testing, sampling and ethical considerations. The chapter finished with a description of the data management methods used as well as a detailed description and justification of the data analysis methods employed.

The procedures used have followed recommended protocols and guidelines to defend the rigour of the research design and data collection methods. The next chapter presents the results of the qualitative data collected.

## **Chapter 4**

### **Qualitative Results :**

### **Refining the Theoretical Framework**

## **4.1 Introduction**

The aim of this chapter is to present the results and analyses of the qualitative primary data collected as part of this research project.

The findings from the data collection are presented based around the specific objectives of the research, which are:

- **To identify the critical success factors for KM programmes**
- **To establish which of these critical success factors has an impact on perceptions of organisational success.**

This chapter addresses the first objective by presenting findings from the interviews. This provides insight into the views of the key players in the industry regarding the critical success factors for KM thereby allowing for refinement of the theoretical framework underpinning this research by informing the development of the next stage of the research.

The aim of this chapter is to present the findings of the exploratory stage of the research and as such, makes no attempt to discuss these findings in relation to the literature or the research objectives proposed; this is dealt with in-depth in chapter 6.

## **4.2 Objective 1: Critical Success Factors for KM**

The first objective of this research is:

- **To identify the critical success factors for KM programmes**

In order to achieve this objective, primary data was collected through the use of semi-structured interviews. Details of the profile of interviewees are provided in chapter 3, section 3.7. The sections below present the findings from these interviews.

### **4.2.1 Overview of Interview Responses**

The semi-structured interviews posed at least fourteen different questions to all interviewees although the order of these questions varied from one interview to the next. The responses to each one of these questions are discussed below followed by a table summarising the responses to interview questions.

- **KM Activity**

All interviewees highlighted the importance of developing an effective and ‘user-friendly’ (R8) IT system as the basis of any KM activity. Interviewees agreed that collection of information or knowledge onto one single database was the first step for effective KM as was highlighted by one of the respondents (R2) who confirmed “you can’t even begin to think about KM unless you have a good and usable IT system”. Some interviewees however (R1, R3 & R7), viewed IT as only the first stage of KM with an expectation to focus on knowledge sharing activities as the KM programme developed. For others, good IT systems were seen as the desired outcome of these programmes; “the better your IT facilities, the better your KM will be” (R4).

The terms ‘knowledge’ and ‘information’ were used interchangeably by the majority of interviewees. One interviewee (R8) however, made the specific distinction between ‘information’ and ‘knowledge’ stating that “the first stage of a KM programme should be the initial collection and management of information and only then can you move to managing knowledge”.

- **Timeliness of KM programme launch**

A number of reasons were cited for the initiation of KM programmes across the different organisations. The first of these reasons was that market conditions are such that more efficient use of knowledge and information is required to remain competitive as explained by a Knowledge and Communications Manager (R6) who said “in a business like ours, unless you can stay on top of

your knowledge base, you can't stay in business". Another reason was the requirement to use resources more efficiently and this could only be achieved if "everyone knows what everyone else is doing" (R7).

Two interviewees (R8 & R9) commented on the importance of remaining at the "forefront of technology" and keeping abreast of new methods of managing work.

The final reason for the uptake of KM programmes was that the public sector was trying to catch up with the private sector. Initiatives pursued in the private sector are seen as beneficial and the public sector always "lags behind" (R5) in utilising these initiatives.

- **Identification of the need for KM**

Five out of the nine interviewees stated that their organisations identified the need for KM around five years previously. One interviewee (R8) stated that KM was not a new concept for their organisation and that the need for this programme had been identified and initiated around 10 years previously. Another interviewee (R4) explained that although their organisation had identified the need for KM around 10 years ago, "very little has been done to take the programme off the ground".

Just one out of the nine interviewees cited a systematic process of conducting an audit of organisational information which led to the need for KM being identified. R2, a Marketing and Business Analyst commented that "only while going through an audit of organisational knowledge with the purpose of assessing currency and validity, was the need for KM recognized".

- **Adoption of KM across organisation**

Over half of the interviewees stated that, at this stage, KM was still not adopted by the organisation as a whole. For these organisations, KM was being piloted

in some departments with a view to it being rolled out to the rest of the organisation depending on its success in these departments and “the financial situation” (R4).

Four of the interviewees commented that KM was in operation across the whole of their organisation. Further, one of the interviewees, a Knowledge Manager (R8) felt that “you cannot get the full return of KM unless everyone is doing it”. It is interesting to note that all these organisations were private sector.

- **Aims of KM**

Cost reduction and improved efficiency were the main reasons cited as the short-term aims of KM for most organisations. Among the other aims of KM was “improved customer satisfaction” (R3), since KM is seen as a means of delivering a more efficient service, therefore leading to higher levels of customer satisfaction. Two interviewees (R5 & R8) highlighted “better trained employees” as a major aim of their KM programme. In these organisations, there was still the underlying aim of improved efficiency and cost reduction but this was seen as a result of more adequately trained and better informed employees.

- **Contribution of KM to long-term organisational aims**

All interviewees seemed to answer this question as an extension of the previous question and struggled to provide higher level long-term aims of KM to the organisation as a whole.

Of the answers provided, the majority (R1, R3, R4, R5, R7, R8 & R9) cited savings in time and cost as the prime long-term contribution of KM to the organisation. Other contributions of KM were a more friendly working environment making it a “better place to work” (R2) and improved customer satisfaction leading to higher profits and fewer complaints (R6).



- **Achievements through KM**

A variety of responses were provided for this question with no one specific theme emerging. Some interviewees (R1 & R4) viewed an improved service to customers as the main desired achievement of their KM programme as explained by R4, a Clinical Knowledge Manager who said “at the end of the day, the availability of this knowledge directly affects the speed and accuracy of doctors’ decisions and therefore has a real impact on patient lives”.

Others (R2 & R6) saw the ability to access all information easily and quickly as the main achievement of KM commenting that “all the information is there, but we just can’t always get to it” (R2).

A further achievement of KM identified was the collection of all knowledge and information into one place facilitating easier access. Also, reduced repetition of work (R3) and greater sharing of experiences (R9) were identified as achievements of KM. These two elements were reported independently and were not viewed as a consequence of each other.

- **Measurement of KM programme success**

All responses to this question followed a similar theme in that the majority of interviewees were unclear of a specific measurement system for KM success. Given this underlying theme, responses varied from having no system at all to having a basic system of measuring the number of hits on a website etc.

Six out of the nine interviewees confirmed that there was no formal system of measuring the success of KM programmes per se or linking it to organisational success, and that any measurement conducted was based on informal verbal feedback. These comments are at odds with previous comments regarding the main aim of KM being improved cost and time efficiency.

Other interviewees (R4 & R7) stated that their organisation used the number of hits on websites and number of retrieved documents as an indicator of the success of these programmes. A comment was made that “these may not be ideal measures and may not really indicate how much of this information is actually used, but you need to start somewhere” (R4).

One of the interviewees (R3) indicated that their organisation had made an attempt to link the effect of using KM on length of training but this measurement system was in its infancy and no conclusions had been drawn as yet.

- **CSFs for KM in the organisation**

A wide range of factors were believed to be critical in the success of KM programmes across the different organisations. The majority of interviewees believed that having good, reliable and efficient IT systems were a pre-requisite for success. Some of the interviewees cited this as the “main factor for success” (R1 & R4) while others believed this was necessary but not the main requirement.

Other critical success factors suggested were knowledge sharing activities and a “conducive KM culture” (R1 – Corporate Services Manager). This was viewed as very important but also very difficult to achieve as it needs to come from the employees themselves and cannot be instigated by the organisation. Examples of the characteristics of a conducive KM culture given were “trust among employees” (R6), “an appreciation of each unit’s contribution to organisational aims” (R4) and “team spirit in the organisation” (R8) and a knowledge friendly culture in general.

Other factors believed to have an impact on the success of KM within the organisation was senior management commitment and the availability of time to fully utilise the IT systems developed. These two factors were seen as inter-related since a senior management body that was committed to making KM work would make the time available for employees to use the IT systems fully;

“management need to realise that these things take time and if they want them to succeed, they need to put their money where their mouth is” (R9). Further, availability of time also leads to greater employee interaction and the development of “stronger relationships” (R3).

- **Problems in pursuing KM programmes**

Many of the critical factors for success cited were in themselves the factors that posed problems in pursuing these KM programmes.

Initially, updating of IT systems and in particular ensuring that all data held on these systems is current and valid was viewed by many (R3, R4, R5, R6 & R9) as the major challenge for KM programmes. The reality of this situation is reflected in the comment by R4: “if you leave it open, anybody can post anything they like on these websites, it can be right or wrong but if you police it, you take away from the spirit of sharing which you are trying to build”. Related to this matter is the time and resources necessary to manage and maintain these websites which was again viewed as a major problem for KM programmes.

Another key challenge for KM programmes identified by four of the nine interviewees was that of funding. There was an awareness of the importance of regular financial investment in these programmes if they were to have any chance of success and this was not always forthcoming. “Whether you get the money or not depends on whether or not KM is ‘flavour of the month’” (R4). Support from senior management was seen as the critical ingredient in overcoming this problem as a CEO who is interested in KM is likely to fund it while one who has other priorities is less likely to make the necessary investments in these programmes. This is reflected in the comment made by R7, a Library Manager in the NHS, who said “it is very hard if you invest a lot of time and effort into a project such as this one and then all of a sudden the plug is pulled because it is not seen as important or worthwhile by people at the top”.

Another problem identified, which is also related to funding, is that of time. Time was considered a major factor for success but it is also a major challenge in the pursuit of these programmes. Time to actually invest in training staff, time allocated to search for information, time to use retrieved information, time to share information and time to develop meaningful and trusting relationships amongst employees were all cited as major hurdles to overcome given that these organisations operate in very dynamic markets and “time is money” (R9).

- **Expected long term achievements from KM**

The general consensus on this question was that KM would enable easy access to all organisational knowledge. This was cited by six of the nine interviewees as the main achievement for the organisation through KM. One interviewee (R3 – Corporate Manager) commented: “a lot of money is being spent and we need to ensure that we get to a situation where all the disparate knowledge is integrated into one system and everyone can access it”.

Another achievement of KM was viewed to be customer satisfaction although it was unclear how managing knowledge was to be translated into customer satisfaction.

One interviewee (R4) concurred that KM could provide many achievements for the organisation including customer satisfaction, increased efficiency and a centralised database of knowledge but this was all dependent on continued investment into the programme.

- **Employees perceptions of KM**

There was a clear divide in interviewees’ views about KM as a whole. Four of the interviewees confirmed that KM was accepted by the employees in their organisation and that it was seen as beneficial to the firm and to the working environment in which they operated. One comment was that “KM and knowledge sharing in particular was one of the major positive characteristics of

the organisational culture and it helped to retain staff” (R8 – Knowledge Manager).

Others however felt that employees still felt that KM was a new concept and a new way of working and were therefore having trouble accepting this new method. Two interviewees (R2 & R5) commented that older employees still had a sense of ‘phobia’ of this new concept but younger employees were more willing to accept it. R5, a Head of Business Relations confirmed that “this is a real change for people – people are not used to working in this way and it takes a very long time to change attitudes. It doesn’t happen overnight”.

- **Responsibility for KM**

Responsibility for KM initiatives lay with designated knowledge managers in five of the organisations interviewed. Other interviewees commented that responsibility for KM was placed with senior managers of the organisation (CEO or Senior Partners or Department Heads). Only one interviewee (R7) described a fluid structure where KM responsibility varied depending on the set-up of each department. In this situation, there was no defined role but responsibility for KM initiatives was assigned by the CEO to different people.

- **Reward for KM activity**

Answers to this question varied considerably amongst interviewees. Four of the interviewees confirmed that there was a formal system for rewarding KM activities such as knowledge sharing or retrieval of knowledge from organisational resources. Rewards varied from career progression to financial rewards, physical rewards (e.g. bottles of wine) or ego rewards (e.g. employee of the month). This is explained by R8 who says “sharing is at the hub of what we do – people need to see that it is a positive thing and positive things are always rewarded in our organisation”.

Other organisations were less defined in how KM was to be rewarded if at all. Some interviewees claimed that although KM was not necessarily rewarded, it was looked upon “favourably” (R2). R7 and R9 both agreed that although it was not rewarded currently, KM was encouraged at all levels of the organisation commenting that “people know that actively participating in the KM project ticks the right boxes. It may not be physically rewarded but not everything is about physical rewards” (R9 – a Compliance Manager).

Table 4.1 Summary of Interview Responses

|  | R1<br>(Corporate Services Manager)  | R2<br>(Marketing & Business Analyst)                   | R3<br>(Corporate Manager)   | R4<br>(Clinical Knowledge Manager)                   | R5<br>(Head of Business Relations)                     | R6<br>(Knowledge & Comm Manager)                         | R7<br>(Library Manager)   | R8<br>(Knowledge Manager)   | R9<br>(Compliance Manager)                                |
|--|---|--|---|--|--|--|---|---|---|
| <b>KM Activity</b>                               | 1 <sup>st</sup> stage: focus on setting up good IT systems<br>2 <sup>nd</sup> stage: focus on knowledge sharing | Good IT systems  | Strong emphasis on sharing knowledge and using existing knowledge | Move procedures / best practise to electronic format | Good management / lessons learnt                       | Collection of knowledge / more use of existing knowledge | 1 <sup>st</sup> stage: managing info<br>2 <sup>nd</sup> stage: managing expertise | Delivery of user-friendly intra & extranets                               | Collecting all regulations & procedures onto one database |
| <b>Why now</b>                                   | Need to remain competitive  | All info held tacitly – need to store info centrally   | Need in the market to better manage info                          | NHS trying to grasp it as very beneficial            | Public sector trying to catch up with private sector   | Market demands   | Necessary due to increased pressure on resources                                  | Not a new concept – need to be at the forefront of technology             | Constantly changing regulations – customer needs          |
| <b>Need for KM Identified</b>                    | Approx 5 years ago  | Following an audit of info held (approx 18 months ago) | 6 – 7 years ago   | 10 years ago but slow in initiating programme        | 4 - 5 years ago (following report on importance of KM) | Approx 5 years ago                                       | 5 – 6 years ago   | 10 – 12 years ago   | Approx 4 years ago  |
| <b>Is KM organisation wide</b>                   | Not yet – pilot in some depts.  | Yes  | Yes   | No – pilot in certain trusts                         | Not yet – will be in the future                        | Yes  | No  | Yes   | No  |
| <b>Aims of KM</b>                                | Greater efficiency  | Cost reduction / improved efficiency                   | Customer satisfaction / savings                                   | Better / more reliable service to customers          | Better trained employees                               | Efficiency / customer satisfaction                       | Improved service to customers   | No repetition of work / new employees benefiting from previous experience | Quicker response to customers                             |
| <b>Contribution of KM to organisational aims</b> | Long term savings in time and money   | Higher profits & better place to work for staff        | Efficiency & better service                                       | Cost & time efficiency                               | Cost & time savings                                    | Happier customers = higher profits                       | Savings in time & cost  | More efficient working methods  | Greater efficiency  |
| <b>Achievements through KM</b>                   | Improved service for customers  | Greater shared info – easier access to info            | No repetition of work – bigger bank of stored info                | Better working service                               | Collection of all knowledge in one place               | Instant access to any info required                      | More efficient ways of working  | Saving time & cost  | More sharing of experience                                |

|                                     | R1<br>(Corporate Services Manager)            | R2<br>(Marketing & Business Analyst)                               | R3<br>(Corporate Manager)   | R4<br>(Clinical Knowledge Manager)                     | R5<br>(Head of Business Relations)   | R6<br>(Knowledge & Comm Manager)  | R7<br>(Library Manager)  | R8<br>(Knowledge Manager)                            | R9<br>(Compliance Manager)   |
|-------------------------------------|---|--|---|--|--|---|--|--|--|
| <b>Measuring KM success</b>         | No defined system as yet                      | Informal feedback  | Some attempt to link KM with length of training – still in trial period | No. of hits / no. of sites used etc                    | No hard measures – still “touchy – feely”  | Still in early stages – no formal system                                  | No. of hits  | No hard systems                                      | No formal measures   |
| <b>CSFs for KM</b>                  | IT systems & right environment for KM to grow | Good working environment / good systems                            | Knowledge sharing activities help improve KM                            | Good IT systems for tracking existing knowledge        | Commitment from senior management  | Knowledge sharing & trust among employees                                 | Awareness of importance of KM – making time for it & knowledge sharing | Needs to be embedded in all organisational processes | Time necessary component for KM systems to work                      |
| <b>Problems in pursuing KM</b>      | Lack of funding                               | Time & resource intensive  | Dynamic market – needs are constantly changing                          | Funding – NHS is always short of money                 | Updating websites & open plan offices reduce the need for KM systems                 | Managing databases & ensuring all people participate in sharing knowledge | Funding – KM not viewed as priority for org.                           | Time   | New ways of working so difficult to adapt. Constant updating of info |
| <b>Long term achievements of KM</b> | Customer satisfaction                         | Move to a situation where all information is stored electronically | Integration of knowledge from all different geographic locations        | Depends on whether there is continued investment in KM | Easy access to all organisational knowledge  | Integrated company-wide knowledge bank                                    | Mobilised knowledge that better serves customers                       | Saving time & money                                  | Easy access to all knowledge   |
| <b>Employee feelings on KM</b>      | Still new concept so unable to tell           | Not all employees accepting KM – some “phobia”                     | See the benefit – therefore accept                                      | Difficult to accept change in culture                  | Broadly accepted by new employees as part of induction – less so for older employees | Generally accepted as the way forward                                     | Different way of working so takes time to adjust                       | Positive – part of organisational culture            | Still new therefore some difficulties                                |
| <b>Responsibility for KM</b>        | Knowledge managers                            | All 6 partners   | Knowledge managers  | CEO  | Knowledge managers   | Knowledge managers  | Depending on structure of SHA  | Knowledge managers                                   | Department heads   |
| <b>Reward for KM</b>                | Better ways of working                        | No formal system but well looked upon                              | Career progression in company   | Limited reward but seen as useful                      | Part of appraisal system   | Basic part of appraisal system  | Encouraged but no formal reward  | Ego rewards & physical / financial rewards           | No formal system but encouraged                                      |



### **4.2.2 Outcomes of Qualitative Analysis**

The objective of the interviews was to refine the theoretical framework underpinning this research by establishing the critical success factors for KM from the perspective of key players in the KM domain. The interviews also served the purpose of confirming findings from the literature, identifying key issues in the KM field as well as contextualising these issues from key informants in the industry. Furthermore, findings from the interviews were used to inform the development of the survey tool which is integral to the next stage of the research process.

Latent content analysis was used to analyse the interview responses. Four specific themes were identified. These are detailed below:

- **Lack of a unified definition of KM**

Each one of the interviewees portrayed a different view and understanding of what KM is. The majority (R1, R2, R4, R7, R8 & R9) tended to focus on the technological aspect of KM as a way of capturing, storing and disseminating knowledge. However, even within this general perception of KM, there were differences in the type of knowledge that was expected to be stored and the potential use of this captured knowledge.

Some organisations (e.g. NHS) had a very clear understanding of KM as something that develops overtime and employees need to be “trained” to the benefits of this programme. Other organisations however were less sure of what KM was, the long term prospects of KM or how the organisation would develop the programme over time. This was particularly the case with organisations that had just started their KM programme.

The two varying views of KM are outlined in the quotes below:

*“KM is all about enabling easy access to crucial information. Therefore simple front-end user friendly systems with links to useful information are key to our KM programme”* (R2)

*“Really good KM is about good management. Learning from other people’s experience and lessons learnt is crucial for any KM programme.”* (R5)

- **Specific factors are necessary for the success of any KM programme**

There was almost complete consensus amongst the key informants with regard to the necessary presence of certain variables in order to make KM successful. Primarily, culture, knowledge sharing, IT and time were viewed as the most important ‘ingredients’ for a successful KM programme. Despite the different perceptions of what KM is, the majority of interviewees highlighted the same factors, though under different labels, as being important for KM.

Interestingly, these same factors were also viewed as barriers to the success of KM programmes.

Examples of the factors perceived to be of critical relevance to KM include:

*“KM needs to be culturally embedded if it is to have any hope of success.”* (R8)

*“An open-plan office, coffee area and water coolers all help in the effort to increase the flow of knowledge between employees which is a basic requirement for our KM programme.”* (R3)

*“Having a fast, efficient and reliable system of tracking who knows what and who has dealt with which cases allows for easy access of information for GPs, Consultants as well as junior doctors.”* (R4)

*“Our biggest problem is time. Time taken to actually set-up these wonderful systems and then time taken to train staff to use them effectively. As a manager, there is a trade-off to be considered between time spent searching for information in case somebody else has dealt with something similar and actually getting on and doing it. Unfortunately, the first doesn't always win!”*  
(R9)

- **Lack of a clear method of measuring the effect of KM**

It was evident from the analysis that none of the organisations seemed to have a rigorous method for measuring KM activity and effect on performance. There was an obvious continuum of approaches to measuring KM where, on one end, some organisations relied purely on verbal feedback (e.g. R2) from staff while others measured number of ‘hits’ on a webpage (e.g. R4 & R7). Others still attempted to draw links between the introduction of KM and the time taken to train new employees (R3). However, this was a very basic effort as other factors contributing to training times (e.g. qualifications, past experience etc) were not taken into consideration.

The discussion of measurement was the least comfortable topic for most interviewees. Reasons cited as to the lack of development of this area included the relative newness of the programme together with limited funding dedicated to this subject.

An example of one of the approaches to measuring KM is:

*“We have done all the easy things such as checking the number of hits on a site, top 10 sites etc..... however, we do not measure how effective this information is to doctors or how much time it saves them...”*  
(R7)

- **Expected organisational outcomes and employee rewards for KM.**

The final theme arising from the analysis of the interviews was the expected outcomes of the KM initiatives (either planned or undertaken) as well as expected rewards.

The primary expected outcome of KM from an organisational perspective was improved efficiency through cost and time reductions. This was viewed as key to the investment in these programmes. There is a clear and understandable logic behind these expectations as explained below:

*“By having all the information and expertise stored in a central location, work can be pushed lower down the ladder and you avoid re-inventing the wheel. This ultimately saves time and money.”* (R8)

From an employee perspective, there was a general realisation of the importance of reward for buying into KM. However, not all organisations had formalised the reward system. Some organisations chose to encourage employees to become involved in KM as a method of improving their work (e.g. R1, R2 & R7) with a view to providing rewards at a later stage. Other organisations made efforts to share knowledge an integral part of the appraisal system (R3 & R6) and a necessary component in order to climb up the corporate ladder.

The quotes below explain the different approaches to rewarding KM.

*“We have had some problems with getting the ‘older’ employees to get involved in knowledge sharing. It might be a phobia of technology or a power thing but we are not sure how we entice them.”* (R2)

*“KM is rewarded in terms of ‘ego’ rewards (praising people who share), physical or financial rewards (bottles of wine, bonuses) and it is one of the five*

*cornerstones of the appraisal system. You are part of a team and as such you are rewarded for developing others – not just yourself.”* (R6)

### **4.3 Key Findings: Objective 1**

The first objective of this research is:

- **To identify the critical success factors for KM programmes**

Through interviews with key players in the KM domain, a number of factors were identified as being critical to the success of any KM programme, irrespective of whether it was in a public sector or private sector organisation. Four factors were viewed as critical ‘ingredients’ for any successful KM programme. These are outlined below.

#### **4.3.1 Culture**

A positive organisational culture was highlighted as a key component necessary for any successful KM programme. Varying examples of a ‘positive’ culture were identified but the general consensus was centred on a knowledge-friendly culture where employees felt comfortable and could trust fellow colleagues.

#### **4.3.2 Knowledge Sharing**

The ability to routinely share and receive knowledge was also identified by key informants as a critical success factor for any KM programme. The routine sharing of information and knowledge was not only viewed as a critical factor for success but was perceived as one of the main achievements organisations expected as a result of pursuing KM.

### **4.3.3 Information Technology**

The availability of effective IT systems was identified as a chief component of any KM programme. IT systems enable the operation of KM programmes in that they are a means for storing and tracking knowledge and information, they allow the transfer of knowledge and information as well as providing a means of measuring KM. Thus effective IT systems were viewed as a pre-requisite for any KM programme.

### **4.3.4 Time**

The availability of time to invest in learning to use KM systems, and the time taken to share knowledge and retrieve available knowledge were all identified as critical factors for the success of a KM programme. Lack of time was also identified as a main barrier to the success of KM programmes due to the dynamic nature of knowledge and the need to invest a lot of time to update and manage shared knowledge.

## **4.4 Development of Research Hypotheses**

The latent content analysis, outlined above, confirmed four out of the nine factors identified as part of the literature review stage. Informants from industry enabled the crystallisation of these constructs and confirmation of what is meant by these factors. These four factors were viewed by key players in industry as critical to KM success and as being associated with organisational success.

However, the other five factors were not confirmed, through the qualitative analysis, as being critical to KM success although they were identified in the literature. This raises the question of whether these factors should be included in the next stage of the research.

Given that the factors were identified as recurrent themes in the literature and for inclusivity purposes, all nine factors will be carried forward into the next stage of the research. This allows for confirmation of the four factors identified in the exploratory stage and allows for the other five factors to be confirmed or disconfirmed through the large scale survey. This approach further refines the findings and gives greater confidence in the ensuing results.

Thus, in order to test the association between the nine factors and KM success and perceptions of organisational success, the following hypotheses have been developed:

*Hypothesis 1:* There is no relationship between a knowledge-friendly culture and perceptions of organisational success.

*Hypothesis 2:* There is no relationship between a high-trust climate and perceptions of organisational success.

*Hypothesis 3:* There is no relationship between routine knowledge sharing and perceptions of organisational success.

*Hypothesis 4:* There is no relationship between high levels of job satisfaction and perceptions of organisational success.

*Hypothesis 5:* There is no relationship between a flexible organisational structure and perceptions of organisational success.

*Hypothesis 6:* There is no relationship between routine innovation and perceptions of organisational success.

*Hypothesis 7:* There is no relationship between knowledge-sharing based reward and perceptions of organisational success.

*Hypothesis 8:* There is no relationship between effective information technology and perceptions of organisational success.

*Hypothesis 9:* There is no relationship between availability of time and perceptions of organisational success.

These hypotheses will be tested through a large scale survey in the next stage of the research.

## 4.5 Summary

This chapter has presented the findings from the exploratory interview stage in line with the first objective for this research. Qualitative data was used to answer this objective.

In answering the first objective, interviews with key informants were used to refine the theoretical framework underpinning this research by establishing the critical success factors for KM. Analyses of interview results were also used to confirm findings from the literature and contextualise key issues in the area. The four factors of a knowledge-friendly culture, routine knowledge sharing, effective IT and availability of time were identified as critical factors for success.

The other five factors were not confirmed as a result of the exploratory interview stage. However, given that these factors were identified in the literature, these factors were not eliminated and will be tested in the final stage of the research.

The next chapter presents the results from the large scale survey utilised to address the second objective of the research.



**Chapter 5:**

**Quantitative Results**

## **5.1 Introduction**

The aim of this chapter is to present the quantitative results of the large scale survey undertaken as part of this research project. The findings from the data collection are presented based around the specific objectives of the research, which are:

- **To identify the critical success factors for KM programmes**
- **To establish which of these critical success factors has an impact on perceptions of organisational success.**

This chapter addresses the second objective by presenting findings from the survey.

This, the final stage of the three staged research process, allows for the confirmation of factors impacting on KM success and perceptions of organisational success. This chapter establishes the relationship between the critical success factors and perceptions of success in organisations operating in a KM environment versus organisations operating in a non-KM environment.

The chapter begins by providing an overview of the profile of respondents followed by an overview of responses to survey questions. The chapter then moves on to presenting a profile of respondents to the survey as well as an overview of how survey the questions were answered. This provides a general idea of the sample population as well as a general feeling of responses to survey questions.

Using correlation and regression analysis, the chapter then establishes the association between the nine constructs and KM success and perceptions of organisational success as well as identifying the predictors of success for organisations aware of KM and those unaware of KM.

## **5.2 Overview of Sample**

Of the 1500 questionnaires sent out, 191 usable responses were received. This equates to a 12.7% response rate which is considered acceptable in management research (Jankowicz, 2000) and is consistent with other studies in the KM field (Moffett et al., 2003).

The sections below provide an overview of the respondents, providing personal, role, organisational and KM environment profiles.

### **5.2.1 Respondents' Profile**

This section outlines the profile of the respondent population in terms of age, gender and experience, as detailed in table 5.1.

There is a broad age span amongst respondents and the standard deviation is reasonable at only 14 years. Given the sensitivity of the question, only 2.5% of respondents failed to answer this question which was deemed acceptable.

The sample is comprised of two-thirds male and one third female, which is reflective of the industry as a whole. Further there were only 6 missing responses which represent only 3% of the sample population.

As well as addressing the age and gender of the sample population, the survey also sought to establish the relative experience of the respondents, both within the specific role and within the organisation as a whole. Table 5.1 below details the experience of respondents within their role (6.4 years) and within the organisation as a whole (12.5 years). Interestingly, the standard deviation for both categories was almost exactly the same indicating an overall similar trend in the number of years spent in a particular role and in the organisation in general.

**Table 5.1 Respondents' Personal Profile**

| <b>Respondents' Personal Profile</b> |          |  |                   |                 |          |
|--------------------------------------|----------|--|-------------------|-----------------|----------|
| <b>Age</b>                           | <b>n</b> |  | <b>Gender</b>     | <b>n</b>        | <b>%</b> |
| Min age                              | 16       |  | Males             | 123             | 65       |
| Max age                              | 60       |  | Females           | 62              | 32       |
| Mean age                             | 41       |  | Missing           | 6               | 3        |
| sd                                   | 14       |  |                   |                 |          |
| <b>Experience</b>                    |          |  | <b>Mean (yrs)</b> | <b>sd (yrs)</b> |          |
| Length of service in organisation    |          |  | 12.5              | 14.1            |          |
| Length of time in current role       |          |  | 6.4               | 14.4            |          |
| <b>(n = 191)</b>                     |          |  |                   |                 |          |

### **5.2.2 Role Profile**

This next section addresses the different aspects of the role profile of respondents.

Details regarding respondents' position within the organisation, understanding of the requirements of their role and employment status are presented in table 5.2 below. Further, job title and departmental affiliation details are provided in table 5.3.

The sample showed a fairly even split between executive/senior management (23%), middle management (38%) and front-line employees (37%) which indicates a non-biased sample.

The results show that over 97% of the respondents rated their understanding of the requirements of their role as either high or medium even if they had only been in post for relatively short periods of time. Only 1 person rated their understanding of their job as low.

The majority of the population (88%) were employed on a full-time basis which is reflective of the industry as a whole and does not deem the sample biased.

**Table 5.2 Respondents' Role Profile**

| <b>Position in Organisation</b> |          |          |                          |          |          |
|---------------------------------|----------|----------|--------------------------|----------|----------|
|                                 | <b>n</b> | <b>%</b> |                          | <b>n</b> | <b>%</b> |
| Executive/CEO/Director          | 32       | 16.8     | Supervisor               | 17       | 8.9      |
| Senior Manager                  | 11       | 5.8      | Front Line Employee      | 53       | 27.7     |
| Middle Manager                  | 35       | 18.3     | Other                    | 17       | 8.9      |
| Junior Manager                  | 21       | 11       | Missing                  | 5        | 2.6      |
| <b>Understanding of Role</b>    |          |          |                          |          |          |
|                                 | <b>n</b> | <b>%</b> | <b>Employment Status</b> |          |          |
| High                            | 146      | 76.5     | Full time                | 168      | 88       |
| Medium                          | 40       | 21       | Part time                | 13       | 7        |
| Low                             | 1        | 0.5      | Contractor               | 5        | 2.5      |
| Missing                         | 4        | 2        | Missing                  | 5        | 2.5      |
| <b>(n = 191)</b>                |          |          |                          |          |          |

As part of developing a full picture of respondents' role profile, respondents were asked to provide their job title and the department for which they worked. The sample showed a broad range of jobs and departments which indicates a representative sample. As can be expected, some job titles and departments feature more frequently than others but this again reflects the nature of the organisations in which the study was carried out.

**Table 5.3 Respondents' Employment Profile**

| <b>Job Title</b>                |          |          |  |                    |          |          |
|---------------------------------|----------|----------|--|--------------------|----------|----------|
|                                 | <b>n</b> | <b>%</b> |  |                    | <b>n</b> | <b>%</b> |
| Manager                         | 38       | 19       |  | HR Manager         | 6        | 3        |
| Director                        | 26       | 14       |  | Operations Manager | 6        | 3        |
| Consultant                      | 23       | 12       |  | Auditor            | 5        | 2.5      |
| Administrator                   | 19       | 10       |  | Knowledge Manager  | 4        | 2        |
| Technical Support               | 17       | 9        |  | Project Manager    | 3        | 1.5      |
| Customer Services               | 13       | 7        |  | PR Manager         | 1        | 0.5      |
| Credit Analyst                  | 11       | 6        |  | Missing            | 11       | 6        |
| Office Manager                  | 8        | 4        |  |                    |          |          |
| <b>Departmental Affiliation</b> |          |          |  |                    |          |          |
|                                 | <b>n</b> | <b>%</b> |  |                    | <b>n</b> | <b>%</b> |
| Banking & Finance               | 31       | 17       |  | Projects           | 2        | 1        |
| Customer Services               | 19       | 10       |  | Branch Network     | 2        | 1        |
| Facilities Management           | 19       | 10       |  | Shipping           | 2        | 1        |
| Sales                           | 15       | 8        |  | Central            | 2        | 1        |
| HR                              | 15       | 8        |  | Purchasing         | 1        | 0.5      |
| Risk & Credit                   | 14       | 7        |  | Public Relations   | 1        | 0.5      |
| IT & Engineering                | 14       | 7        |  | Operations         | 1        | 0.5      |
| Insurance                       | 11       | 6        |  | Travel             | 1        | 0.5      |
| Change & Knowledge Mgt          | 8        | 4        |  | Miscellaneous      | 6        | 3        |
| Auditing                        | 7        | 3.6      |  | Missing            | 17       | 9        |
| Marketing                       | 3        | 1.5      |  |                    |          |          |
| <b>(n = 191)</b>                |          |          |  |                    |          |          |

### 5.2.3 Organisational Profile

Table 5.4 below details the industry profile as well as the strategic focus of the respondents' employing organisation.

The results indicate that the majority of respondents (82%) were direct employees of the target sector. Whilst a smaller minority of respondents (17%) were not directly employed in financial services, they were all employees of either related or supporting industries such as IT or project management and as such were deemed suitable respondents for the purposes of the survey.

With regard to strategic focus, the results show that there is a strong orientation towards efficiency/cost reduction and customer satisfaction (75%) whereas there are only a small number of organisations focused on quality (15%). Interestingly, only 4% of the sample was pursuing innovation as a strategic focus.

Table 5.4 Organisational Profile

| <b>Industry Profile</b>           |          |          |            |          |          |
|-----------------------------------|----------|----------|------------|----------|----------|
|                                   | <b>n</b> |          | <b>%</b>   |          |          |
| Banking/Finance/Insurance/Law     | 157      |          | 82         |          |          |
| Non Banking/Finance/Insurance/Law | 33       |          | 17         |          |          |
| Missing                           | 1        |          | 0.5        |          |          |
| <b>Strategic Focus</b>            |          |          |            |          |          |
|                                   | <b>n</b> | <b>%</b> |            | <b>n</b> | <b>%</b> |
| Efficiency/Cost Reduction         | 84       | 44       | Innovation | 7        | 4        |
| Customer Satisfaction             | 60       | 31       | Don't Know | 7        | 4        |
| Quality                           | 29       | 15       | Missing    | 4        | 2        |
| <b>(n = 191)</b>                  |          |          |            |          |          |

#### **5.2.4 Organisational KM Environment Profile**

One third (n=62) of the organisations in the sample population possessed a KM programme while the rest either did not have a KM programme or were unaware of the existence of a KM programme, as detailed in table 5.5 below. This number is deemed sufficient allowing for reasonable comparisons to be made between the two groups.

The questionnaire also sought to establish respondents' level of understanding of KM in general. Over 60% of the sample population had some sort of understanding of KM (n=120) although this was not necessarily related to the employing organisation. Given the newness of this area, this is very high.

Table 5.5 KM Profile

| <b>KM Environment</b>  |          |          |  |                            |          |          |
|------------------------|----------|----------|--|----------------------------|----------|----------|
| <b>Awareness of KM</b> | <b>n</b> | <b>%</b> |  | <b>Understanding of KM</b> | <b>n</b> | <b>%</b> |
| KM Programme           | 62       | 32       |  | Never heard of it          | 67       | 35       |
| No KM Programme        | 45       | 24       |  | A little bit               | 77       | 40       |
| Don't Know             | 80       | 42       |  | A fair amount              | 31       | 16       |
| Missing                | 4        | 2        |  | A great deal               | 12       | 7        |
| <b>(n = 191)</b>       |          |          |  |                            |          |          |

### **5.3 Overview of Survey Responses**

This section provides details relating to how the survey questions were answered by the respondents. Items in each of the nine constructs have been grouped together and details of mean, standard deviation and frequency of responses are provided in the tables below. This gives a general feeling of respondents' attitudes towards items in the different constructs.

#### **5.3.1 Knowledge-Friendly Culture**

The means of responses to items in the knowledge-friendly culture construct ranged from 'strongly agree' to 'neutral' (SA = 16%, A = 79%, N = 5%). The standard deviations ranged from 0.69 to 1.41 but were generally very close to 1.

At least 60% of respondents either strongly agreed or slightly agreed with half of the items in the construct, and at least 50% strongly agreed or slightly agreed with 52 out of the 70 items in the construct.



**Table 5.6 Knowledge-Friendly Culture Construct: Mean, Standard Deviation & Frequency**

| Mean  | sd   | Frequency   |            |            |             |              |             |
|---|------|-------------|------------|------------|-------------|--------------|-------------|
|   |      | SA<br>n (%) | A<br>n (%) | N<br>n (%) | DA<br>n (%) | SDA<br>n (%) | DK<br>n (%) |
| <b>The commitment of staff is an important asset for any organisation</b>                         |      |             |            |            |             |              |             |
| 1.52  | 0.80 | 119 (62.3)  | 51 (26.7)  | 13 (6.8)   | 6 (3.1)     | 1 (0.5)      | 1 (0.5)     |
| <b>Sharing knowledge makes it easier for us to achieve our goals</b>                              |      |             |            |            |             |              |             |
| 1.61  | 0.69 | 93 (48.7)   | 79 (41.4)  | 14 (7.3)   | 3 (1.6)     | 0 (0)        | 0 (0)       |
| <b>I am very clear about my role in helping the organisation achieve its goals</b>                |      |             |            |            |             |              |             |
| 1.62  | 0.95 | 113 (59.2)  | 53 (27.7)  | 13 (6.8)   | 7 (3.7)     | 5 (2.6)      | 0 (0)       |
| <b>I am clear about my work priorities</b>  |      |             |            |            |             |              |             |
| 1.64  | 0.94 | 111 (58.1)  | 53 (27.7)  | 13 (6.8)   | 13 (6.8)    | 1 (0.5)      | 1 (0.5)     |
| <b>I value colleagues in my department</b>  |      |             |            |            |             |              |             |
| 1.68  | 0.86 | 90 (47.1)   | 83 (43.5)  | 13 (6.8)   | 2 (1)       | 0 (0)        | 3 (1.6)     |
| <b>I feel valued by the organisation as a whole</b>   |      |             |            |            |             |              |             |
| 1.70  | 0.91 | 102 (53.4)  | 56 (29.3)  | 22 (11.5)  | 10 (5.2)    | 1 (0.5)      | 0 (0)       |
| <b>I know exactly what is expected of me</b>  |      |             |            |            |             |              |             |
| 1.80  | 0.98 | 86 (45)     | 74 (38.7)  | 19 (9.9)   | 6 (3.1)     | 3 (1.6)      | 2 (1)       |
| <b>We are proud of the quality provided by our department</b>                                     |      |             |            |            |             |              |             |
| 1.85  | 0.75 | 63 (33)     | 98 (51.3)  | 24 (12.6)  | 4 (2.1)     | 1 (0.5)      | 0 (0)       |
| <b>Overall I value my work colleagues in the organisation</b>                                     |      |             |            |            |             |              |             |
| 1.88  | 1.04 | 81 (42.4)   | 70 (36.6)  | 22 (11.5)  | 9 (4.7)     | 2 (1)        | 3 (1.6)     |
| <b>I am a valued member of the department</b>   |      |             |            |            |             |              |             |
| 1.95  | 0.96 | 64 (33.5)   | 93 (48.7)  | 21 (11)    | 7 (3.7)     | 5 (2.6)      | 1 (0.5)     |
| <b>Colleagues outside my dept. share information when I ask them</b>                              |      |             |            |            |             |              |             |
| 1.98  | 1.03 | 71 (37.2)   | 75 (39.3)  | 22 (11.5)  | 15 (7.9)    | 5 (2.6)      | 0 (0)       |
| <b>I am kept informed about significant issues in the org.</b>                                    |      |             |            |            |             |              |             |
| 2.05  | 0.85 | 48 (25.1)   | 98 (51.3)  | 28 (14.7)  | 13 (6.8)    | 1 (0.5)      | 3 (1.6)     |
| <b>The people in my department cooperate well with other departments</b>                          |      |             |            |            |             |              |             |
| 2.06  | 1.07 | 70 (36.6)   | 65 (34.0)  | 32 (16.8)  | 18 (9.4)    | 3 (1.6)      | 1 (0.5)     |
| <b>Achieving business goals is the organisation's most important aim</b>                          |      |             |            |            |             |              |             |
| 2.06  | 1.19 | 72 (37.7)   | 72 (37.7)  | 20 (10.5)  | 12 (6.3)    | 11 (5.8)     | 2 (1)       |
| <b>I use my skills to support colleagues outside the dept.</b>                                    |      |             |            |            |             |              |             |
| 2.06  | 1.01 | 61 (31.9)   | 72 (37.7)  | 37 (19.4)  | 11 (5.8)    | 2 (1)        | 2 (1)       |
| <b>My line manager clarifies what he or she expects from me</b>                                   |      |             |            |            |             |              |             |
| 2.06  | 0.99 | 54 (28.3)   | 93 (48.7)  | 26 (13.6)  | 9 (4.7)     | 6 (3.1)      | 1 (0.5)     |
| <b>Colleagues outside my dept. share their skills when I ask them</b>                             |      |             |            |            |             |              |             |
| 2.07  | 1.18 | 75 (39.3)   | 62 (32.5)  | 28 (14.7)  | 14 (7.3)    | 10 (5.2)     | 1 (0.5)     |
| <b>With regards to the organisation's products/ services, only the best will do</b>               |      |             |            |            |             |              |             |
| 2.12  | 1.25 | 74 (38.7)   | 60 (31.4)  | 22 (11.5)  | 9 (9.9)     | 10 (5.2)     | 2 (1)       |
| <b>I am proud to be part of the organisation</b>  |      |             |            |            |             |              |             |
| 2.19  | 1.16 | 63 (33)     | 68 (35.6)  | 29 (15.2)  | 22 (11.5)   | 9 (4.7)      | 0 (0)       |
| <b>I am aware of the role most people play in the organisation</b>                                |      |             |            |            |             |              |             |
| 2.22  | 1.15 | 53 (27.7)   | 80 (41.9)  | 29 (15.2)  | 16 (8.4)    | 7 (3.7)      | 3 (1.6)     |
| <b>Employees are encouraged to participate in formulating their performance objectives</b>        |      |             |            |            |             |              |             |
| 2.23  | 0.97 | 44 (23)     | 82 (42.9)  | 42 (22)    | 19 (9.9)    | 3 (1.6)      | 0 (0)       |
| <b>The organisational grapevine keeps me well informed</b>  |      |             |            |            |             |              |             |
| 2.25  | 1.41 | 68 (35.6)   | 66 (34.6)  | 28 (14.7)  | 10 (5.2)    | 5 (2.6)      | 13 (6.8)    |
| <b>My department has quality standards that are higher than those of its external competitors</b> |      |             |            |            |             |              |             |
| 2.28  | 1.14 | 55 (28.8)   | 62 (32.5)  | 44 (23)    | 18 (9.4)    | 8 (4.2)      | 1 (0.5)     |
| <b>The organisation has a strong determination to beat clearly defined competitors</b>            |      |             |            |            |             |              |             |
| 2.31  | 1.06 | 38 (19.9)   | 90 (47.1)  | 32 (16.8)  | 20 (10.5)   | 7 (3.7)      | 1 (0.5)     |
| <b>The organisation's strategic goals are openly shared</b>                                       |      |             |            |            |             |              |             |
| 2.34  | 1.00 | 30 (15.7)   | 100 (52.4) | 33 (17.3)  | 23 (12)     | 3 (1.6)      | 2 (1)       |

| Mean   | sd   | Frequency   |            |            |             |              |             |
|--|------|-------------|------------|------------|-------------|--------------|-------------|
|  |      | SA<br>n (%) | A<br>n (%) | N<br>n (%) | DA<br>n (%) | SDA<br>n (%) | DK<br>n (%) |
| <b>In general, people pull their weight in the organisation</b>                                  |      |             |            |            |             |              |             |
| 2.38   | 1.37 | 63 (33)     | 49 (25.7)  | 42 (22)    | 15 (7.9)    | 13 (6.8)     | 6 (3.1)     |
| <b>The next five years are likely to be better for the organisation than the last five years</b> |      |             |            |            |             |              |             |
| 2.39   | 1.09 | 38 (19.9)   | 81 (42.4)  | 38 (19.9)  | 27 (14.1)   | 6 (3.1)      | 1 (0.5)     |
| <b>People here strongly support each other</b>   |      |             |            |            |             |              |             |
| 2.41   | 1.12 | 35 (18.3)   | 82 (42.9)  | 45 (23.6)  | 14 (7.3)    | 9 (4.7)      | 3 (1.6)     |
| <b>Employees are generally encouraged to resolve conflicts quickly</b>                           |      |             |            |            |             |              |             |
| 2.41   | 1.29 | 53 (27.7)   | 65 (34)    | 28 (14.7)  | 26 (13.6)   | 16 (8.4)     | 1 (0.5)     |
| <b>I share the information I have with colleagues outside the dept.</b>                          |      |             |            |            |             |              |             |
| 2.44   | 1.17 | 42 (22)     | 69 (36.1)  | 36 (18.8)  | 30 (15.7)   | 7 (3.7)      | 2 (1)       |
| <b>Reviews of my work are strongly related to my personal development</b>                        |      |             |            |            |             |              |             |
| 2.45   | 1.22 | 44 (23)     | 73 (38.2)  | 37 (17.8)  | 25 (13.1)   | 13 (6.8)     | 2 (1)       |
| <b>I feel valued by the organisation as a whole</b>  |      |             |            |            |             |              |             |
| 2.45   | 1.12 | 53 (27.7)   | 65 (34)    | 28 (14.7)  | 26 (13.6)   | 16 (8.4)     | 1 (0.5)     |
| <b>Overall, organisational communication is effective</b>  |      |             |            |            |             |              |             |
| 2.46   | 1.19 | 42 (22)     | 71 (37.2)  | 37 (19.4)  | 26 (13.6)   | 12 (6.3)     | 1 (0.5)     |
| <b>Once a project has been started it is usually seen through to completion</b>                  |      |             |            |            |             |              |             |
| 2.46   | 1.25 | 47 (24.6)   | 64 (33.5)  | 39 (20.4)  | 25 (13.1)   | 11 (5.8)     | 3 (1.6)     |
| <b>I feel as sense of belonging to the organisation</b>  |      |             |            |            |             |              |             |
| 2.46   | 1.31 | 50 (26.2)   | 64 (33.5)  | 31 (16.2)  | 23 (12)     | 17 (8.9)     | 2 (1)       |
| <b>My department respects the contribution made by other departments</b>                         |      |             |            |            |             |              |             |
| 2.47   | 1.08 | 27 (14.1)   | 87 (45.5)  | 47 (24.6)  | 21 (11)     | 3 (1.6)      | 5 (2.6)     |
| <b>My work would improve with more training</b>  |      |             |            |            |             |              |             |
| 2.47   | 1.15 | 35 (18.3)   | 73 (38.2)  | 46 (24.1)  | 14 (7.3)    | 15 (7.9)     | 1 (0.5)     |
| <b>In general, this is a caring organisation</b>   |      |             |            |            |             |              |             |
| 2.49   | 1.33 | 49 (25.7)   | 70 (36.6)  | 26 (13.6)  | 25 (13.1)   | 18 (9.4)     | 3 (1.6)     |
| <b>The organisation encourages all employees to openly share information</b>                     |      |             |            |            |             |              |             |
| 2.49   | 1.14 | 35 (18.3)   | 76 (39.8)  | 37 (19.4)  | 32 (16.8)   | 6 (3.1)      | 2 (1)       |
| <b>The organisation encourages employees to pass information upwards to managers</b>             |      |             |            |            |             |              |             |
| 2.49   | 1.16 | 31 (16.2)   | 86 (45)    | 36 (18.8)  | 20 (10.5)   | 13 (6.8)     | 2 (1)       |
| <b>The organisation effectively solves most of its important problems</b>                        |      |             |            |            |             |              |             |
| 2.51   | 1.16 | 36 (18.8)   | 71 (37.2)  | 48 (25.1)  | 27 (14.1)   | 4 (2.1)      | 5 (2.6)     |
| <b>Employees are committed to helping each other learn about their work</b>                      |      |             |            |            |             |              |             |
| 2.56   | 1.09 | 26 (13.6)   | 84 (44)    | 42 (22)    | 29 (15.2)   | 8 (4.2)      | 2 (1)       |
| <b>Within the organisation everyone is clearly held responsible for their performance</b>        |      |             |            |            |             |              |             |
| 2.59   | 1.15 | 28 (14.7)   | 80 (41.9)  | 37 (19.4)  | 32 (16.8)   | 12 (6.3)     | 1 (0.5)     |
| <b>The organisational "grapevine" is a strong source of knowledge</b>                            |      |             |            |            |             |              |             |
| 2.59   | 1.11 | 29 (15.2)   | 70 (36.6)  | 50 (26.2)  | 28 (14.7)   | 10 (5.2)     | 1 (0.5)     |
| <b>In general, decision making in the organisation is effective</b>                              |      |             |            |            |             |              |             |
| 2.65   | 1.21 | 32 (16.8)   | 68 (35.6)  | 40 (20.9)  | 36 (18.8)   | 12 (6.3)     | 2 (1.0)     |
| <b>I would happily work for this organisation until retirement age</b>                           |      |             |            |            |             |              |             |
| 2.66   | 1.47 | 59 (30.9)   | 34 (17.8)  | 38 (19.9)  | 26 (13.6)   | 28 (14.7)    | 2 (1)       |
| <b>The organisation regularly reviews work procedures</b>  |      |             |            |            |             |              |             |
| 2.66   | 1.18 | 27 (14.1)   | 75 (39.3)  | 40 (20.9)  | 32 (16.8)   | 15 (7.9)     | 1 (0.5)     |
| <b>Sharing knowledge is one of the core values of the organisation</b>                           |      |             |            |            |             |              |             |
| 2.66   | 1.17 | 24 (12.6)   | 77 (40.3)  | 41 (21.5)  | 35 (18.3)   | 6 (3.1)      | 5 (2.6)     |
| <b>The organisation's strategic goals are understood by all employees</b>                        |      |             |            |            |             |              |             |
| 2.68   | 1.24 | 32 (16.8)   | 65 (34)    | 43 (22.5)  | 34 (17.8)   | 11 (5.8)     | 4 (2.1)     |
| <b>Employees are protective about their work</b>   |      |             |            |            |             |              |             |
| 2.68   | 1.20 | 24 (12.6)   | 75 (39.3)  | 46 (24.1)  | 30 (15.7)   | 6 (3.1)      | 7 (3.7)     |
| <b>The organisation makes the best use of people's experience</b>                                |      |             |            |            |             |              |             |
| 2.69   | 1.01 | 16 (8.4)    | 76 (39.8)  | 52 (27.2)  | 37 (19.4)   | 5 (2.6)      | 1 (0.5)     |
| <b>The organisation is too tolerant of poor performers</b>                                       |      |             |            |            |             |              |             |
| 2.71   | 1.26 | 30 (15.7)   | 74 (38.7)  | 24 (12.6)  | 46 (24.1)   | 12 (6.3)     | 3 (1.6)     |
| <b>The work of the organisation is coordinated effectively</b>                                   |      |             |            |            |             |              |             |
| 2.72   | 1.27 | 29 (15.2)   | 69 (36.1)  | 39 (20.4)  | 30 (15.7)   | 17 (8.9)     | 4 (2.1)     |

| Mean  | sd   | Frequency   |            |            |             |              |             |
|---|------|-------------|------------|------------|-------------|--------------|-------------|
|   |      | SA<br>n (%) | A<br>n (%) | N<br>n (%) | DA<br>n (%) | SDA<br>n (%) | DK<br>n (%) |
| <b>Employees in this organisation are enthusiastic about learning from their work</b>                     |      |             |            |            |             |              |             |
| 2.74  | 1.15 | 21 (11)     | 73 (38.2)  | 47 (24.6)  | 37 (19.4)   | 9 (4.7)      | 4 (2.1)     |
| <b>In general conflict is managed effectively by the organisation</b>                                     |      |             |            |            |             |              |             |
| 2.74  | 1.13 | 22 (11.5)   | 65 (34)    | 60 (31.4)  | 31 (16.2)   | 9 (4.7)      | 4 (2.1)     |
| <b>Senior management lives up to its responsibilities to the workers</b>                                  |      |             |            |            |             |              |             |
| 2.75  | 1.23 | 27 (14.1)   | 62 (32.5)  | 54 (28.3)  | 33 (17.3)   | 6 (3.1)      | 8 (4.2)     |
| <b>My current job makes full use of my abilities</b>  |      |             |            |            |             |              |             |
| 2.77  | 1.21 | 28 (14.7)   | 61 (31.9)  | 43 (22.5)  | 41 (21.5)   | 15 (7.9)     | 1 (0.5)     |
| <b>The organisation is good at sharing good practice</b>  |      |             |            |            |             |              |             |
| 2.79  | 1.39 | 43 (22.5)   | 44 (23)    | 38 (19.9)  | 35 (18.3)   | 25 (13.1)    | 2 (1)       |
| <b>Planning is carried out appropriately in the organisation</b>  |      |             |            |            |             |              |             |
| 2.79  | 1.18 | 27 (14.1)   | 55 (28.8)  | 54 (28.3)  | 36 (18.8)   | 15 (7.9)     | 1 (0.5)     |
| <b>There is little conflict between departments</b>   |      |             |            |            |             |              |             |
| 2.82  | 1.30 | 21 (11)     | 82 (42.9)  | 25 (13.1)  | 43 (22.5)   | 11 (5.8)     | 8 (4.2)     |
| <b>The organisation is good at learning from things that do not go well</b>                               |      |             |            |            |             |              |             |
| 2.86  | 1.28 | 28 (14.7)   | 53 (27.7)  | 50 (26.2)  | 37 (19.4)   | 16 (8.4)     | 5 (2.6)     |
| <b>The training offered by the organisation is of a high quality</b>                                      |      |             |            |            |             |              |             |
| 2.86  | 1.25 | 28 (14.7)   | 52 (27.2)  | 51 (26.7)  | 38 (19.9)   | 17 (8.9)     | 3 (1.6)     |
| <b>Procedures are in place for employees to clarify their expectations of line managers</b>               |      |             |            |            |             |              |             |
| 2.89  | 1.40 | 36 (18.8)   | 46 (24.1)  | 40 (20.9)  | 32 (16.8)   | 29 (15.2)    | 3 (1.6)     |
| <b>The organisation has measures in place that reduce the number of conflicts</b>                         |      |             |            |            |             |              |             |
| 2.90  | 1.34 | 26 (13.6)   | 64 (33.5)  | 34 (17.8)  | 38 (19.9)   | 22 (11.5)    | 5 (2.6)     |
| <b>Consequences of poor performance are clear for all to see</b>  |      |             |            |            |             |              |             |
| 2.92  | 1.30 | 19 (9.9)    | 64 (33.5)  | 53 (37.7)  | 32 (16.8)   | 8 (4.2)      | 13 (6.8)    |
| <b>It is rare that new projects are started without it being decided in advance how they will proceed</b> |      |             |            |            |             |              |             |
| 2.95  | 1.41 | 31 (16.2)   | 55 (28.8)  | 36 (18.8)  | 37 (19.4)   | 25 (13.1)    | 7 (3.7)     |
| <b>The organisation's induction procedures are effective</b>  |      |             |            |            |             |              |             |
| 3.02  | 1.41 | 22 (11.5)   | 67 (35.1)  | 31 (16.2)  | 38 (19.9)   | 22 (11.5)    | 11 (5.8)    |
| <b>Workers can get what they need from other departments without being hampered by procedures</b>         |      |             |            |            |             |              |             |
| 3.02  | 1.37 | 23 (12)     | 51 (26.7)  | 62 (32.5)  | 23 (12)     | 19 (9.9)     | 13 (6.8)    |
| <b>In taking an initiative, my colleagues sometimes ignore rules</b>                                      |      |             |            |            |             |              |             |
| 3.03  | 1.27 | 23 (12)     | 55 (28.8)  | 32 (16.8)  | 55 (28.8)   | 24 (12.6)    | 1 (0.5)     |
| <b>Suggestions made by employees are usually ignored</b>  |      |             |            |            |             |              |             |
| 3.19  | 1.27 | 11 (5.8)    | 52 (27.2)  | 55 (28.8)  | 32 (16.8)   | 27 (14.1)    | 8 (4.2)     |
| <b>CONSTRUCT RELIABILITY = 0.727</b>  |      |             |            |            |             |              |             |

Sample size = 191  
sd = Standard Deviation  
SA = Strongly Agree (1)  
A = Slightly Agree (2)

N = Neutral (3)  
DA = Slightly Disagree (4)  
SDA = Strongly Disagree (5)  
DK = Don't Know (6)

### 5.3.2 High-Trust Climate

Responses to items in the high-trust climate construct showed a broad range of means varying between 'strongly agree' to 'neutral' (SA =22 %, A = 73%, N = 5%).

At least 60% of respondents either strongly agreed or slightly agreed with 17 out of the 60 items in the construct, and at least 50% strongly agreed or slightly agreed with over half of the items in the construct.

Table 5.7 High-Trust Climate Construct: Mean, Standard Deviation & Frequency

| Mean  | sd   | Frequency   |            |            |             |              |             |
|---|------|-------------|------------|------------|-------------|--------------|-------------|
|   |      | SA<br>n (%) | A<br>n (%) | N<br>n (%) | DA<br>n (%) | SDA<br>n (%) | DK<br>n (%) |
| <b>Employees are generally encouraged to resolve conflicts quickly</b>                  |      |             |            |            |             |              |             |
| 1.41  | 1.12 | 35 (18.3)   | 82 (42.9)  | 45 (23.6)  | 14 (7.3)    | 9 (4.7)      | 3 (1.6)     |
| <b>I fully understand what my responsibilities are</b>                                  |      |             |            |            |             |              |             |
| 1.57  | 0.87 | 115 (60.2)  | 57 (29.8)  | 6 (3.1)    | 12 (6.3)    | 1 (0.5)      | 0 (0)       |
| <b>I think that it is important to discuss my appraisal report with my line manager</b> |      |             |            |            |             |              |             |
| 1.59  | 0.96 | 114 (59.7)  | 44 (23)    | 15 (7.9)   | 4 (2.1)     | 4 (2.1)      | 1 (0.5)     |
| <b>Sharing knowledge makes it easier for us to achieve our goals</b>                    |      |             |            |            |             |              |             |
| 1.61  | 0.69 | 93 (48.7)   | 79 (41.4)  | 14 (7.3)   | 3 (1.6)     | 0 (0)        | 0 (0)       |
| <b>I am very clear about my role in helping the organisation achieve its goals</b>      |      |             |            |            |             |              |             |
| 1.63  | 0.95 | 113 (59.2)  | 53 (27.7)  | 13 (6.8)   | 7 (3.7)     | 5 (2.6)      | 0 (0)       |
| <b>I am clear about my work priorities</b>  |      |             |            |            |             |              |             |
| 1.64  | 0.94 | 111 (58.1)  | 53 (27.7)  | 13 (6.8)   | 13 (6.8)    | 0 (0)        | 1 (0.5)     |
| <b>I value colleagues in my department</b>  |      |             |            |            |             |              |             |
| 1.68  | 0.86 | 90 (47.1)   | 83 (43.5)  | 13 (6.8)   | 2 (1)       | 0 (0)        | 3 (1.6)     |
| <b>I know exactly what is expected of me</b>  |      |             |            |            |             |              |             |
| 1.70  | 0.91 | 102 (53.4)  | 56 (29.3)  | 22 (11.5)  | 10 (5.2)    | 1 (0.5)      | 0 (0)       |
| <b>The sharing of information makes this a better place to work</b>                     |      |             |            |            |             |              |             |
| 1.77  | 0.92 | 94 (49.2)   | 58 (30.4)  | 30 (15.7)  | 8 (4.2)     | 0 (0)        | 1 (0.5)     |
| <b>Overall I value my work colleagues in the organisation</b>                           |      |             |            |            |             |              |             |
| 1.85  | 0.76 | 63 (33)     | 98 (51.3)  | 24 (12.6)  | 4 (2.1)     | 1 (0.5)      | 0 (0)       |
| <b>I have adequate opportunity to express my views in my dept.</b>                      |      |             |            |            |             |              |             |
| 1.90  | 1.10 | 92 (48.2)   | 49 (25.7)  | 25 (13.1)  | 17 (8.9)    | 5 (2.6)      | 0 (0)       |
| <b>Colleagues in my department value me</b>   |      |             |            |            |             |              |             |
| 1.91  | 0.98 | 69 (36.1)   | 89 (46.6)  | 23 (12)    | 5 (2.6)     | 1 (0.5)      | 4 (2.1)     |
| <b>Colleagues outside my dept. share information when I ask them</b>                    |      |             |            |            |             |              |             |
| 1.95  | 0.96 | 64 (33.5)   | 93 (48.7)  | 21 (11)    | 7 (3.7)     | 5 (2.6)      | 1 (0.5)     |
| <b>The people in my department cooperate well with other departments</b>                |      |             |            |            |             |              |             |
| 2.05  | 0.85 | 48 (25.1)   | 98 (51.3)  | 28 (14.7)  | 13 (6.8)    | 1 (0.5)      | 0 (0)       |
| <b>My line manager clarifies what he or she expects from me</b>                         |      |             |            |            |             |              |             |
| 2.06  | 1.02 | 61 (31.9)   | 72 (37.7)  | 37 (19.4)  | 11 (5.8)    | 2 (1)        | 2 (1)       |
| <b>Colleagues outside my dept. share their skills when I ask them</b>                   |      |             |            |            |             |              |             |
| 2.06  | 0.99 | 54 (28.3)   | 93 (48.7)  | 26 (13.6)  | 9 (4.7)     | 6 (3.1)      | 1 (0.5)     |

| Mean   | sd   | Frequency   |            |            |             |              |             |
|--|------|-------------|------------|------------|-------------|--------------|-------------|
|  |      | SA<br>n (%) | A<br>n (%) | N<br>n (%) | DA<br>n (%) | SDA<br>n (%) | DK<br>n (%) |
| <b>I use my skills to support colleagues outside the dept.</b>                                   |      |             |            |            |             |              |             |
| 2.07   | 1.19 | 72 (37.7)   | 72 (37.7)  | 20 (10.5)  | 12 (6.3)    | 11 (5.8)     | 2 (1)       |
| <b>I am proud to be part of the organisation</b>   |      |             |            |            |             |              |             |
| 2.12   | 1.25 | 74 (38.7)   | 60 (31.4)  | 22 (11.5)  | 19 (9.9)    | 10 (5.2)     | 2 (1)       |
| <b>I am aware of the role most people play in the organisation</b>                               |      |             |            |            |             |              |             |
| 2.19   | 1.16 | 63 (33)     | 68 (35.6)  | 29 (15.2)  | 22 (11.5)   | 9 (4.7)      | 0 (0)       |
| <b>My colleagues live up to my expectations of them</b>  |      |             |            |            |             |              |             |
| 2.21   | 0.84 | 34 (17.8)   | 98 (51.3)  | 41 (21.5)  | 17 (8.9)    | 0 (0)        | 0 (0)       |
| <b>I know what contribution most departments make</b>  |      |             |            |            |             |              |             |
| 2.31   | 1.22 | 57 (29.8)   | 70 (36.6)  | 23 (12)    | 30 (15.7)   | 11 (5.8)     | 0 (0)       |
| <b>In my organisation there is a real will to succeed</b>  |      |             |            |            |             |              |             |
| 2.34   | 1.19 | 57 (29.8)   | 56 (29.3)  | 40 (20.9)  | 29 (15.2)   | 5 (2.6)      | 2 (1)       |
| <b>My line manager lives up to my expectations of him/her</b>                                    |      |             |            |            |             |              |             |
| 2.35   | 1.18 | 53 (27.7)   | 55 (28.8)  | 49 (25.7)  | 19 (9.9)    | 6 (3.1)      | 3 (1.6)     |
| <b>In general, people pull their weight in the organisation</b>                                  |      |             |            |            |             |              |             |
| 2.35   | 1.00 | 30 (15.7)   | 100 (52.4) | 33 (17.3)  | 23 (12)     | 3 (1.6)      | 2 (1)       |
| <b>The next five years are likely to be better for the organisation than the last five years</b> |      |             |            |            |             |              |             |
| 2.38   | 1.37 | 63 (33)     | 49 (25.7)  | 42 (22)    | 15 (7.9)    | 13 (6.8)     | 6 (3.1)     |
| <b>People here strongly support each other</b>   |      |             |            |            |             |              |             |
| 2.39   | 1.09 | 38 (19.9)   | 81 (42.4)  | 38 (19.9)  | 27 (14.1)   | 6 (3.1)      | 1 (0.5)     |
| <b>I share the information I have with colleagues outside the dept.</b>                          |      |             |            |            |             |              |             |
| 2.41   | 1.29 | 53 (27.7)   | 65 (34)    | 28 (14.7)  | 26 (13.6)   | 16 (8.4)     | 1 (0.5)     |
| <b>Overall, the organisation is flexible in meeting my needs</b>                                 |      |             |            |            |             |              |             |
| 2.45   | 1.25 | 48 (25.1)   | 59 (30.9)  | 46 (24.1)  | 18 (9.4)    | 13 (6.8)     | 3 (1.6)     |
| <b>I feel valued by the organisation as a whole</b>  |      |             |            |            |             |              |             |
| 2.46   | 1.23 | 44 (23)     | 73 (38.2)  | 34 (17.8)  | 25 (13.1)   | 13 (6.8)     | 2 (1)       |
| <b>Once a project has been started it is usually seen through to completion</b>                  |      |             |            |            |             |              |             |
| 2.46   | 1.25 | 47 (24.6)   | 64 (33.5)  | 39 (20.4)  | 25 (13.1)   | 11 (5.8)     | 3 (1.6)     |
| <b>I feel as sense of belonging to the organisation</b>  |      |             |            |            |             |              |             |
| 2.46   | 1.31 | 50 (26.2)   | 64 (33.5)  | 31 (16.2)  | 23 (12)     | 17 (8.9)     | 2 (1)       |
| <b>My department respects the contribution made by other departments</b>                         |      |             |            |            |             |              |             |
| 2.48   | 1.08 | 27 (14.1)   | 87 (45.5)  | 47 (24.6)  | 21 (11)     | 3 (1.6)      | 5 (2.6)     |
| <b>In general, this is a caring organisation</b>   |      |             |            |            |             |              |             |
| 2.49   | 1.33 | 49 (25.7)   | 70 (36.6)  | 26 (13.6)  | 25 (13.1)   | 18 (9.4)     | 3 (1.6)     |
| <b>My department is respected by the other departments in the organisation</b>                   |      |             |            |            |             |              |             |
| 2.50   | 1.24 | 34 (17.8)   | 81 (42.4)  | 44 (23)    | 16 (8.4)    | 6 (3.1)      | 9 (4.7)     |
| <b>The organisation encourages all employees to openly share information</b>                     |      |             |            |            |             |              |             |
| 2.50   | 1.14 | 35 (18.3)   | 76 (39.8)  | 37 (19.4)  | 32 (16.8)   | 6 (3.1)      | 2 (1.0)     |
| <b>The organisation encourages employees to pass information upwards to managers</b>             |      |             |            |            |             |              |             |
| 2.50   | 1.16 | 31 (16.2)   | 86 (45)    | 36 (18.8)  | 20 (10.5)   | 13 (6.8)     | 2 (1)       |
| <b>The organisation effectively solves most of its important problems</b>                        |      |             |            |            |             |              |             |
| 2.51   | 1.16 | 36 (18.8)   | 71 (37.2)  | 48 (25.1)  | 27 (14.1)   | 4 (2.1)      | 5 (2.6)     |
| <b>The organisation respects my needs, even though they cannot always meet them</b>              |      |             |            |            |             |              |             |
| 2.52   | 1.32 | 44 (23)     | 65 (34)    | 39 (20.4)  | 19 (9.9)    | 15 (7.9)     | 5 (2.6)     |
| <b>Within the organisation everyone is clearly held responsible for their performance</b>        |      |             |            |            |             |              |             |
| 2.59   | 1.15 | 28 (14.7)   | 80 (41.9)  | 37 (19.4)  | 32 (16.8)   | 12 (6.3)     | 1 (0.5)     |
| <b>The organisational "grapevine" is a strong source of knowledge</b>                            |      |             |            |            |             |              |             |
| 2.59   | 1.11 | 29 (15.2)   | 70 (36.6)  | 50 (26.2)  | 28 (14.7)   | 10 (5.2)     | 1 (0.5)     |
| <b>In general, decision making in the organisation is effective</b>                              |      |             |            |            |             |              |             |
| 2.65   | 1.21 | 32 (16.8)   | 68 (35.6)  | 40 (20.9)  | 36 (18.8)   | 12 (6.3)     | 2 (1)       |
| <b>I would happily work for this organisation until retirement age</b>                           |      |             |            |            |             |              |             |
| 2.66   | 1.47 | 59 (30.9)   | 34 (17.8)  | 38 (19.9)  | 26 (13.6)   | 28 (14.7)    | 2 (1)       |
| <b>The organisation regularly reviews work procedures</b>  |      |             |            |            |             |              |             |
| 2.66   | 1.18 | 27 (14.1)   | 75 (39.3)  | 40 (20.9)  | 32 (16.8)   | 15 (7.9)     | 1 (0.5)     |
| <b>Sharing knowledge is one of the core values of the organisation</b>                           |      |             |            |            |             |              |             |
| 2.66   | 1.17 | 24 (12.6)   | 77 (40.3)  | 41 (21.5)  | 35 (18.3)   | 6 (3.1)      | 5 (2.6)     |

| Mean  | sd   | Frequency   |            |            |             |              |             |
|---|------|-------------|------------|------------|-------------|--------------|-------------|
|   |      | SA<br>n (%) | A<br>n (%) | N<br>n (%) | DA<br>n (%) | SDA<br>n (%) | DK<br>n (%) |
| <b>In this organisation conflicts tend to be resolved constructively</b>                          |      |             |            |            |             |              |             |
| 2.68  | 1.20 | 24 (12.6)   | 75 (39.3)  | 46 (24.1)  | 30 (15.7)   | 6 (3.1)      | 7 (3.7)     |
| <b>The organisation is too tolerant of poor performers</b>  |      |             |            |            |             |              |             |
| 2.72  | 1.28 | 29 (15.2)   | 69 (36.1)  | 39 (20.4)  | 30 (15.7)   | 17 (8.9)     | 4 (2.1)     |
| <b>The work of the organisation is coordinated effectively</b>                                    |      |             |            |            |             |              |             |
| 2.75  | 1.16 | 21 (11)     | 73 (38.2)  | 47 (24.6)  | 37 (19.4)   | 9 (4.7)      | 4 (2.1)     |
| <b>In general conflict is managed effectively by the organisation</b>                             |      |             |            |            |             |              |             |
| 2.75  | 1.23 | 27 (14.1)   | 62 (32.5)  | 54 (28.3)  | 33 (17.3)   | 6 (3.1)      | 8 (4.2)     |
| <b>Senior management lives up to its responsibilities to the workers</b>                          |      |             |            |            |             |              |             |
| 2.77  | 2.21 | 28 (14.7)   | 61 (31.9)  | 43 (22.5)  | 41 (21.5)   | 15 (7.9)     | 1 (0.5)     |
| <b>My current job makes full use of my abilities</b>  |      |             |            |            |             |              |             |
| 2.79  | 1.39 | 43 (22.5)   | 44 (23)    | 38 (19.9)  | 35 (18.3)   | 25 (13.1)    | 2 (1)       |
| <b>The organisation is good at sharing good practice</b>  |      |             |            |            |             |              |             |
| 2.79  | 1.18 | 27 (14.1)   | 55 (28.8)  | 54 (28.3)  | 36 (18.8)   | 15 (7.9)     | 1 (0.5)     |
| <b>Planning is carried out appropriately in the organisation</b>                                  |      |             |            |            |             |              |             |
| 2.82  | 1.30 | 21 (11)     | 82 (42.9)  | 25 (13.1)  | 43 (22.5)   | 11 (5.8)     | 8 (4.2)     |
| <b>The organisation is good at learning from things that do not go well</b>                       |      |             |            |            |             |              |             |
| 2.86  | 1.25 | 28 (14.7)   | 52 (27.2)  | 51 (26.7)  | 38 (19.9)   | 17 (8.9)     | 3 (1.6)     |
| <b>There is little conflict between departments</b>   |      |             |            |            |             |              |             |
| 2.87  | 1.28 | 28 (14.7)   | 53 (27.7)  | 50 (26.2)  | 37 (19.4)   | 16 (8.4)     | 5 (2.6)     |
| <b>Procedures are in place for employees to clarify their expectations of line managers</b>       |      |             |            |            |             |              |             |
| 2.90  | 1.34 | 26 (13.6)   | 64 (33.5)  | 34 (17.8)  | 38 (19.9)   | 22 (11.5)    | 2 (1)       |
| <b>The organisation has measures in place that reduce the number of conflicts</b>                 |      |             |            |            |             |              |             |
| 2.92  | 1.30 | 19 (9.9)    | 64 (33.5)  | 53 (27.7)  | 32 (16.8)   | 8 (4.2)      | 13 (6.8)    |
| <b>I am unlikely to leave the organisation to develop my career</b>                               |      |             |            |            |             |              |             |
| 2.94  | 1.58 | 52 (27.2)   | 28 (14.7)  | 34 (17.8)  | 26 (13.6)   | 41 (21.5)    | 4 (2.1)     |
| <b>The organisation's induction procedures are effective</b>                                      |      |             |            |            |             |              |             |
| 3.01  | 1.37 | 23 (12)     | 51 (26.7)  | 62 (32.5)  | 23 (12)     | 19 (9.9)     | 13 (6.8)    |
| <b>Workers can get what they need from other departments without being hampered by procedures</b> |      |             |            |            |             |              |             |
| 3.02  | 1.41 | 22 (11.5)   | 67 (35.1)  | 31 (16.2)  | 38 (19.9)   | 22 (11.5)    | 11 (5.8)    |
| <b>Suggestions made by employees are usually ignored</b>  |      |             |            |            |             |              |             |
| 3.03  | 1.27 | 23 (12)     | 55 (28.8)  | 32 (16.8)  | 55 (28.8)   | 24 (12.6)    | 1 (0.5)     |
| <b>CONSTRUCT RELIABILITY = 0.704</b>  |      |             |            |            |             |              |             |

Sample size = 191  
sd = Standard Deviation  
SA = Strongly Agree (1)  
A = Slightly Agree (2)

N = Neutral (3)  
DA = Slightly Disagree (4)  
SDA = Strongly Disagree (5)  
DK = Don't Know (6)

### 5.3.3 Routine Knowledge Sharing

Responses to items in the routine knowledge sharing construct showed a similar pattern of means to previous constructs with means varying between 'strongly agree' to 'neutral' (SA = 23%, A = 69%, N = 8%).

At least 60% of respondents either strongly agreed or slightly agreed with half of the items in the construct. Interestingly, 90% of respondents strongly agreed or slightly agreed with the statement '*sharing knowledge makes it easier for us to achieve our goals*'.

**Table 5.8 Routine Knowledge Sharing: Mean, Standard Deviation & Frequency**

| Mean  | sd   | Frequency   |            |            |             |              |             |
|---|------|-------------|------------|------------|-------------|--------------|-------------|
|   |      | SA<br>n (%) | A<br>n (%) | N<br>n (%) | DA<br>n (%) | SDA<br>n (%) | DK<br>n (%) |
| <b>I think that it is important to discuss my appraisal report with my line manager</b> |      |             |            |            |             |              |             |
| 1.59  | 0.96 | 114 (59.7)  | 44 (23)    | 15 (7.9)   | 4 (2.1)     | 4 (2.1)      | 1 (0.5)     |
| <b>Sharing knowledge makes it easier for us to achieve our goals</b>                    |      |             |            |            |             |              |             |
| 1.61  | 0.69 | 93 (48.7)   | 79 (41.4)  | 14 (7.3)   | 3 (1.6)     | 0 (0)        | 0 (0)       |
| <b>The sharing of information makes this a better place to work</b>                     |      |             |            |            |             |              |             |
| 1.77  | 0.92 | 94 (49.2)   | 58 (30.4)  | 30 (15.7)  | 8 (4.2)     | 0 (0)        | 1 (0.5)     |
| <b>When I've learnt something new, I pass it on to my colleagues</b>                    |      |             |            |            |             |              |             |
| 1.92  | 0.82 | 57 (29.8)   | 98 (51.3)  | 24 (12.6)  | 7 (3.7)     | 0 (0)        | 1 (0.5)     |
| <b>Colleagues outside my dept. share information when I ask them</b>                    |      |             |            |            |             |              |             |
| 1.94  | 0.96 | 64 (33.5)   | 93 (48.7)  | 21 (11)    | 7 (3.7)     | 5 (2.6)      | 1 (0.5)     |
| <b>I receive all the information needed to carry out my work</b>                        |      |             |            |            |             |              |             |
| 1.96  | 1.02 | 74 (38.7)   | 75 (39.3)  | 21 (11)    | 17 (8.9)    | 4 (2.1)      | 0 (0)       |
| <b>I am kept informed about significant issues in the org.</b>                          |      |             |            |            |             |              |             |
| 1.98  | 1.03 | 71 (37.2)   | 75 (39.3)  | 22 (11.5)  | 15 (7.9)    | 5 (2.6)      | 0 (0)       |
| <b>My colleagues are generally keen to discuss work matters with me</b>                 |      |             |            |            |             |              |             |
| 1.99  | 0.90 | 55 (28.8)   | 95 (49.7)  | 22 (11.5)  | 12 (6.3)    | 1 (0.5)      | 1 (0.5)     |
| <b>My supervisor keeps me informed about what is happening</b>                          |      |             |            |            |             |              |             |
| 2.01  | 1.05 | 70 (36.6)   | 73 (38.2)  | 19 (9.9)   | 22 (11.5)   | 3 (1.6)      | 0 (0)       |
| <b>Colleagues outside my dept. share their skills when I ask them</b>                   |      |             |            |            |             |              |             |
| 2.06  | 1.01 | 54 (28.3)   | 93 (48.7)  | 26 (13.6)  | 9 (4.7)     | 6 (3.1)      | 1 (0.5)     |
| <b>Colleagues in my department share information about what is happening</b>            |      |             |            |            |             |              |             |
| 2.07  | 0.93 | 48 (25.1)   | 102 (53.4) | 21 (11)    | 15 (7.9)    | 2 (1)        | 1 (0.5)     |
| <b>I am aware of the role most people play in the organisation</b>                      |      |             |            |            |             |              |             |
| 2.19  | 1.16 | 63 (33)     | 68 (35.6)  | 29 (15.2)  | 22 (11.5)   | 9 (4.7)      | 0 (0)       |
| <b>The organisational grapevine keeps me well informed</b>                              |      |             |            |            |             |              |             |
| 2.24  | 0.97 | 44 (23)     | 82 (42.9)  | 42 (22)    | 19 (9.9)    | 3 (1.6)      | 0 (0)       |
| <b>The organisation's strategic goals are openly shared</b>                             |      |             |            |            |             |              |             |
| 2.31  | 1.06 | 38 (19.9)   | 90 (47.1)  | 32 (16.8)  | 20 (10.5)   | 7 (3.7)      | 1 (0.5)     |
| <b>The department is fully informed about significant organisational issues</b>         |      |             |            |            |             |              |             |
| 2.35  | 1.15 | 48 (25.1)   | 70 (36.6)  | 35 (18.3)  | 27 (14.1)   | 7 (3.7)      | 1 (0.5)     |
| <b>I share the information I have with colleagues outside the dept.</b>                 |      |             |            |            |             |              |             |
| 2.42  | 1.29 | 53 (27.7)   | 65 (34)    | 28 (14.7)  | 26 (13.6)   | 16 (8.4)     | 1 (0.5)     |

| Mean  | sd   | Frequency   |            |            |             |              |             |
|---|------|-------------|------------|------------|-------------|--------------|-------------|
|   |      | SA<br>n (%) | A<br>n (%) | N<br>n (%) | DA<br>n (%) | SDA<br>n (%) | DK<br>n (%) |
| <b>My colleagues openly discuss what they need of each another</b>                            |      |             |            |            |             |              |             |
| 2.47  | 1.13 | 32 (16.8)   | 86 (45)    | 34 (17.8)  | 25 (13.1)   | 11 (5.8)     | 1 (0.5)     |
| <b>The organisation encourages all employees to openly share information</b>                  |      |             |            |            |             |              |             |
| 2.49  | 1.14 | 35 (18.3)   | 76 (39.8)  | 37 (19.4)  | 32 (16.8)   | 6 (3.1)      | 2 (1)       |
| <b>The organisation encourages employees to pass information upwards to managers</b>          |      |             |            |            |             |              |             |
| 2.49  | 1.16 | 31 (16.2)   | 86 (45)    | 36 (18.8)  | 20 (10.5)   | 13 (6.8)     | 2 (1)       |
| <b>The department receives all the information it needs to function effectively</b>           |      |             |            |            |             |              |             |
| 2.55  | 1.14 | 36 (18.8)   | 62 (32.5)  | 49 (25.7)  | 35 (18.3)   | 3 (1.6)      | 3 (1.6)     |
| <b>Employees are committed to helping each other learn about their work</b>                   |      |             |            |            |             |              |             |
| 2.55  | 1.09 | 26 (13.6)   | 84 (44)    | 42 (22)    | 29 (15.2)   | 8 (4.2)      | 2 (1)       |
| <b>The organisational "grapevine" is a strong source of knowledge</b>                         |      |             |            |            |             |              |             |
| 2.59  | 1.11 | 29 (15.2)   | 70 (36.6)  | 50 (26.6)  | 28 (14.7)   | 10 (5.2)     | 1 (0.5)     |
| <b>I would work more effectively if the other employees shared their ideas</b>                |      |             |            |            |             |              |             |
| 2.59  | 1.04 | 25 (13.1)   | 66 (34.6)  | 69 (36.1)  | 17 (8.9)    | 8 (4.2)      | 2 (1)       |
| <b>Senior management keeps everyone in the organisation informed about current activities</b> |      |             |            |            |             |              |             |
| 2.65  | 1.25 | 34 (17.8)   | 70 (36.6)  | 29 (15.2)  | 38 (19.9)   | 16 (8.4)     | 1 (0.5)     |
| <b>Sharing knowledge is one of the core values of the organisation</b>                        |      |             |            |            |             |              |             |
| 2.66  | 1.17 | 24 (12.6)   | 77 (40.3)  | 41 (21.5)  | 35 (18.3)   | 6 (3.1)      | 5 (2.6)     |
| <b>Future plans for the organisation are clearly communicated to employees</b>                |      |             |            |            |             |              |             |
| 2.71  | 1.21 | 27 (14.1)   | 73 (38.2)  | 37 (19.4)  | 32 (16.8)   | 20 (10.5)    | 2 (1)       |
| <b>Sharing knowledge is taken into consideration in my performance appraisal</b>              |      |             |            |            |             |              |             |
| 2.77  | 1.38 | 44 (23)     | 39 (20.4)  | 41 (21.5)  | 39 (20.4)   | 15 (7.9)     | 5 (2.6)     |
| <b>The organisation is good at sharing good practice</b>                                      |      |             |            |            |             |              |             |
| 2.79  | 1.78 | 27 (14.1)   | 55 (28.8)  | 54 (28.3)  | 36 (18.8)   | 15 (7.9)     | 1 (0.5)     |
| <b>The organisation is good at learning from things that do not go well</b>                   |      |             |            |            |             |              |             |
| 2.85  | 1.25 | 28 (14.7)   | 52 (27.2)  | 51 (26.7)  | 38 (19.9)   | 17 (8.9)     | 3 (1.6)     |
| <b>Procedures are in place for employees to clarify their expectations of line managers</b>   |      |             |            |            |             |              |             |
| 2.90  | 1.34 | 26 (13.6)   | 64 (33.5)  | 34 (17.8)  | 38 (19.9)   | 22 (11.5)    | 5 (2.6)     |
| <b>There is open sharing of information across organisational departments</b>                 |      |             |            |            |             |              |             |
| 2.94  | 1.17 | 22 (11.5)   | 49 (25.7)  | 53 (27.7)  | 47 (24.6)   | 16 (8.4)     | 1 (0.5)     |
| <b>Employees influence senior management in their making of policy decisions</b>              |      |             |            |            |             |              |             |
| 2.99  | 1.27 | 20 (10.5)   | 55 (28.8)  | 52 (27.2)  | 34 (17.8)   | 24 (12.6)    | 4 (2.1)     |
| <b>Departments clarify what they expect from each other</b>                                   |      |             |            |            |             |              |             |
| 3.07  | 1.17 | 17 (8.9)    | 50 (26.2)  | 43 (22.5)  | 61 (31.9)   | 15 (7.9)     | 2 (1)       |
| <b>Suggestions for improvements are rarely sought by my line manager</b>                      |      |             |            |            |             |              |             |
| 3.10  | 1.23 | 16 (8.4)    | 49 (25.7)  | 52 (27.2)  | 36 (18.8)   | 30 (15.7)    | 1 (0.5)     |
| <b>Suggestions made by employees are usually ignored</b>                                      |      |             |            |            |             |              |             |
| 3.40  | 1.16 | 10 (5.2)    | 34 (17.8)  | 53 (27.7)  | 54 (28.3)   | 36 (18.8)    | 1 (0.5)     |
| <b>CONSTRUCT RELIABILITY = 0.732</b>  |      |             |            |            |             |              |             |

Sample size = 191  
sd = Standard Deviation  
SA = Strongly Agree (1)  
A = Slightly Agree (2)

N = Neutral (3)  
DA = Slightly Disagree (4)  
SDA = Strongly Disagree (5)  
DK = Don't Know (6)



### 5.3.4 High Levels of Job Satisfaction

The means of responses to items in the high levels of job satisfaction construct showed a broad range varying between 'strongly agree' to 'neutral' (SA = 23%, A = 69%, N = 8%).

Furthermore, at least 50% of respondents either strongly agreed or slightly agreed with 25 out of the 35 (71%) items in the construct.

**Table 5.9 High Levels of Job Satisfaction Construct: Mean, Standard Deviation & Frequency**

| Mean  | sd   | Frequency    |            |            |             |              |             |
|---|------|--------------|------------|------------|-------------|--------------|-------------|
|   |      | SA<br>n (%)  | A<br>n (%) | N<br>n (%) | DA<br>n (%) | SDA<br>n (%) | DK<br>n (%) |
| <b>I think that it is important to discuss my appraisal report with my line manager</b> |      |              |            |            |             |              |             |
| 1.59  | 0.96 | 114<br>59.70 | 44 (23)    | 15 (7.9)   | 49 (2.1)    | 4 (2.1)      | 1 (0.5)     |
| <b>Sharing knowledge makes it easier for us to achieve our goals</b>                    |      |              |            |            |             |              |             |
| 1.61  | 0.69 | 93 (48.7)    | 79 (41.4)  | 14 (7.3)   | 3 (1.6)     | 0 (0)        | 0 (0)       |
| <b>The sharing of information makes this a better place to work</b>                     |      |              |            |            |             |              |             |
| 1.77  | 0.92 | 64 (49.2)    | 58 (30.4)  | 30 (15.7)  | 8 (4.2)     | 0 (0)        | 1 (0.5)     |
| <b>When I've learnt something new, I pass it on to my colleagues</b>                    |      |              |            |            |             |              |             |
| 1.92  | 0.82 | 57 (29.8)    | 98 (51.3)  | 24 (12.6)  | 7 (3.7)     | 0 (0)        | 1 (0.5)     |
| <b>Colleagues outside my dept. share information when I ask them</b>                    |      |              |            |            |             |              |             |
| 1.95  | 0.96 | 64 (33.5)    | 93 (48.7)  | 21 (11)    | 7 (3.7)     | 5 (2.6)      | 1 (0.5)     |
| <b>I receive all the information needed to carry out my work</b>                        |      |              |            |            |             |              |             |
| 1.96  | 1.02 | 74 (38.7)    | 75 (39.3)  | 21 (11)    | 17 (8.9)    | 4 (2.1)      | 0 (0)       |
| <b>I am kept informed about significant issues in the org.</b>                          |      |              |            |            |             |              |             |
| 1.98  | 1.03 | 71 (37.2)    | 75 (39.3)  | 22 (11.5)  | 15 (7.9)    | 5 (2.6)      | 0 (0)       |
| <b>My colleagues are generally keen to discuss work matters with me</b>                 |      |              |            |            |             |              |             |
| 1.99  | 0.90 | 55 (28.8)    | 95 (49.7)  | 22 (11.5)  | 12 (6.3)    | 1 (0.5)      | 1 (0.5)     |
| <b>My supervisor keeps me informed about what is happening</b>                          |      |              |            |            |             |              |             |
| 2.01  | 1.05 | 70 (36.6)    | 73 (38.2)  | 19 (9.9)   | 22 (11.5)   | 3 (1.6)      | 0 (0)       |
| <b>Colleagues outside my dept. share their skills when I ask them</b>                   |      |              |            |            |             |              |             |
| 2.06  | 0.99 | 54 (28.3)    | 93 (48.7)  | 26 (13.6)  | 9 (4.7)     | 6 (3.1)      | 1 (0.5)     |
| <b>Colleagues in my department share information about what is happening</b>            |      |              |            |            |             |              |             |
| 2.07  | 0.93 | 48 (25.1)    | 102 (53.4) | 21 (11)    | 15 (7.9)    | 2 (1)        | 1 (0.5)     |
| <b>I am aware of the role most people play in the organisation</b>                      |      |              |            |            |             |              |             |
| 2.19  | 1.16 | 63 (33)      | 68 (35.6)  | 29 (15.2)  | 22 (11.5)   | 9 (4.7)      | 0 (0)       |
| <b>The organisational grapevine keeps me well informed</b>                              |      |              |            |            |             |              |             |
| 2.24  | 0.97 | 44 (23)      | 82 (42.9)  | 42 (22)    | 19 (9.9)    | 3 (1.6)      | 0 (0)       |
| <b>The organisation's strategic goals are openly shared</b>                             |      |              |            |            |             |              |             |
| 2.31  | 1.06 | 38 (19.9)    | 90 (47.1)  | 32 (16.8)  | 20 (10.5)   | 7 (3.7)      | 1 (0.5)     |
| <b>The department is fully informed about significant organisational issues</b>         |      |              |            |            |             |              |             |
| 2.35  | 1.15 | 48 (25.1)    | 70 (36.6)  | 35 (18.3)  | 27 (14.1)   | 7 (3.7)      | 1 (0.5)     |
| <b>I share the information I have with colleagues outside the dept.</b>                 |      |              |            |            |             |              |             |
| 2.42  | 1.29 | 53 (27.7)    | 65 (34)    | 28 (14.7)  | 26 (13.6)   | 16 (8.4)     | 1 (0.5)     |
| <b>My colleagues openly discuss what they need of each another</b>                      |      |              |            |            |             |              |             |

| Mean  | sd   | Frequency   |            |            |             |              |             |
|---|------|-------------|------------|------------|-------------|--------------|-------------|
|   |      | SA<br>n (%) | A<br>n (%) | N<br>n (%) | DA<br>n (%) | SDA<br>n (%) | DK<br>n (%) |
| 2.47  | 1.13 | 32 (16.8)   | 86 (45)    | 34 (17.8)  | 25 (13.1)   | 11 (5.8)     | 1 (0.5)     |
| <b>The organisation encourages all employees to openly share information</b>                  |      |             |            |            |             |              |             |
| 2.49  | 1.14 | 35 (18.3)   | 76 (39.8)  | 37 (19.4)  | 32 (16.8)   | 6 (3.1)      | 2 (1)       |
| <b>The organisation encourages employees to pass information upwards to managers</b>          |      |             |            |            |             |              |             |
| 2.50  | 1.16 | 31 (16.2)   | 86 (45)    | 36 (18.8)  | 20 (10.5)   | 13 (6.8)     | 2 (1)       |
| <b>The department receives all the information it needs to function effectively</b>           |      |             |            |            |             |              |             |
| 2.55  | 1.14 | 36 (18.8)   | 62 (32.5)  | 49 (25.7)  | 35 (18.3)   | 3 (1.6)      | 3 (1.6)     |
| <b>Employees are committed to helping each other learn about their work</b>                   |      |             |            |            |             |              |             |
| 2.56  | 1.10 | 26 (13.6)   | 84 (44)    | 42 (22)    | 29 (15.2)   | 8 (4.2)      | 2 (1)       |
| <b>The organisational "grapevine" is a strong source of knowledge</b>                         |      |             |            |            |             |              |             |
| 2.59  | 1.11 | 29 (15.2)   | 70 (36.6)  | 50 (26.2)  | 28 (14.7)   | 10 (5.2)     | 1 (0.5)     |
| <b>I would work more effectively if the other employees shared their ideas</b>                |      |             |            |            |             |              |             |
| 2.59  | 1.04 | 25 (13.1)   | 66 (34.6)  | 69 (36.1)  | 17 (8.9)    | 8 (4.2)      | 2 (1)       |
| <b>Senior management keeps everyone in the organisation informed about current activities</b> |      |             |            |            |             |              |             |
| 2.65  | 1.25 | 34 (17.8)   | 70 (36.6)  | 29 (15.2)  | 38 (19.9)   | 16 (8.4)     | 1 (0.5)     |
| <b>Sharing knowledge is one of the core values of the organisation</b>                        |      |             |            |            |             |              |             |
| 2.66  | 1.17 | 24 (12.6)   | 77 (40.3)  | 41 (21.5)  | 35 (18.3)   | 6 (3.1)      | 5 (2.6)     |
| <b>Future plans for the organisation are clearly communicated to employees</b>                |      |             |            |            |             |              |             |
| 2.71  | 1.21 | 27 (14.1)   | 73 (38.2)  | 37 (19.4)  | 32 (16.8)   | 20 (10.5)    | 0 (0)       |
| <b>Sharing knowledge is taken into consideration in my performance appraisal</b>              |      |             |            |            |             |              |             |
| 2.77  | 1.38 | 44 (23)     | 39 (20.4)  | 41 (21.5)  | 39 (20.4)   | 15 (7.9)     | 5 (2.6)     |
| <b>The organisation is good at sharing good practice</b>                                      |      |             |            |            |             |              |             |
| 2.79  | 1.18 | 27 (14.1)   | 55 (28.8)  | 54 (28.3)  | 36 (18.8)   | 15 (7.9)     | 1 (0.5)     |
| <b>The organisation is good at learning from things that do not go well</b>                   |      |             |            |            |             |              |             |
| 2.86  | 1.25 | 28 (14.7)   | 52 (27.2)  | 51 (26.7)  | 38 (19.9)   | 17 (8.9)     | 3 (1.6)     |
| <b>Procedures are in place for employees to clarify their expectations of line managers</b>   |      |             |            |            |             |              |             |
| 2.90  | 1.34 | 26 (13.6)   | 64 (33.5)  | 34 (17.8)  | 38 (19.9)   | 22 (11.5)    | 5 (2.6)     |
| <b>There is open sharing of information across organisational departments</b>                 |      |             |            |            |             |              |             |
| 2.94  | 1.17 | 22 (11.5)   | 49 (25.7)  | 53 (27.7)  | 47 (24.6)   | 16 (8.4)     | 1 (0.5)     |
| <b>Employees influence senior management in their making of policy decisions</b>              |      |             |            |            |             |              |             |
| 2.99  | 1.27 | 20 (10.5)   | 55 (28.8)  | 52 (27.2)  | 34 (17.8)   | 24 (12.6)    | 4 (2.1)     |
| <b>Departments clarify what they expect from each other</b>                                   |      |             |            |            |             |              |             |
| 3.07  | 1.17 | 17 (8.9)    | 50 (26.2)  | 43 (22.5)  | 61 (31.9)   | 15 (7.9)     | 2 (1)       |
| <b>Suggestions for improvements are rarely sought by my line manager</b>                      |      |             |            |            |             |              |             |
| 3.10  | 1.23 | 16 (8.4)    | 49 (25.7)  | 52 (27.2)  | 36 (18.8)   | 30 (15.7)    | 1 (0.5)     |
| <b>Suggestions made by employees are usually ignored</b>                                      |      |             |            |            |             |              |             |
| 3.40  | 1.16 | 10 (5.2)    | 34 (17.8)  | 53 (27.7)  | 54 (28.3)   | 36 (18.8)    | 1 (0.5)     |

**CONSTRUCT RELIABILITY = 0.772**

Sample size = 191

sd = Standard Deviation

SA = Strongly Agree (1)

A = Slightly Agree (2)

N = Neutral (3)

DA = Slightly Disagree (4)

SDA = Strongly Disagree (5)

DK = Don't Know (6)

### 5.3.5 Flexible Organisational Structure

All items in the flexible organisational structure construct were answered in a similar pattern in that the balance of frequencies leaned more towards the 'strongly agree' and 'slightly agree' categories. The only exception to this was the final item (*My line manager likes me to consult him/her before I take action*) where those who strongly disagreed or slightly disagreed with this statement (44.5%) were more than those who strongly disagreed or slightly agreed with this statement (29.3%).

**Table 5.10 Flexible Organisational Structure Construct: Mean, Standard Deviation & Frequency**

| Mean  | sd   | Frequency   |            |            |             |              |             |
|---|------|-------------|------------|------------|-------------|--------------|-------------|
|   |      | SA<br>n (%) | A<br>n (%) | N<br>n (%) | DA<br>n (%) | SDA<br>n (%) | DK<br>n (%) |
| <b>People in my department fully understand the business objectives</b>                               |      |             |            |            |             |              |             |
| 2.06  | 0.98 | 55 (28.5)   | 89 (46.6)  | 26 (13.6)  | 14 (7.3)    | 3 (1.6)      | 1 (0.5)     |
| <b>My line manager does not try to control my work activities</b>                                     |      |             |            |            |             |              |             |
| 2.18  | 1.27 | 71 (37.2)   | 54 (28.3)  | 23 (12)    | 20 (10.5)   | 12 (6.3)     | 1 (0.5)     |
| <b>I fully participate in decisions which directly affect my work</b>                                 |      |             |            |            |             |              |             |
| 2.21  | 1.13 | 59 (30.9)   | 63 (33)    | 37 (19.4)  | 17 (8.9)    | 9 (4.7)      | 0 (0)       |
| <b>I am kept well enough informed for me to take appropriate decisions</b>                            |      |             |            |            |             |              |             |
| 2.37  | 1.13 | 42 (22)     | 77 (40.3)  | 34 (17.8)  | 25 (13.1)   | 8 (4.2)      | 1 (0.5)     |
| <b>Most employees share a clear understanding of what it is the organisation is trying to achieve</b> |      |             |            |            |             |              |             |
| 2.39  | 1.17 | 43 (22.5)   | 77 (40.3)  | 33 (17.3)  | 28 (14.7)   | 4 (2.1)      | 4 (2.1)     |
| <b>My department respects the contribution made by other departments</b>                              |      |             |            |            |             |              |             |
| 2.48  | 1.08 | 27 (14.1)   | 87 (45.5)  | 47 (24.6)  | 21 (11)     | 3 (1.6)      | 5 (2.6)     |
| <b>Work is delegated to me according to my level of experience</b>                                    |      |             |            |            |             |              |             |
| 2.49  | 1.22 | 37 (19.4)   | 75 (39.3)  | 31 (16.2)  | 22 (11.5)   | 16 (8.4)     | 1 (0.5)     |
| <b>The organisation undertakes adequate planning for the future</b>                                   |      |             |            |            |             |              |             |
| 2.50  | 1.28 | 42 (22)     | 73 (38.2)  | 31 (16.2)  | 28 (14.7)   | 10 (5.2)     | 5 (2.6)     |
| <b>My department is respected by the other departments in the organisation</b>                        |      |             |            |            |             |              |             |
| 2.51  | 1.24 | 34 (17.8)   | 81 (42.4)  | 44 (23)    | 16 (8.4)    | 6 (3.1)      | 9 (4.7)     |
| <b>Departments meet their responsibilities to other departments</b>                                   |      |             |            |            |             |              |             |
| 2.55  | 1.09 | 22 (11.5)   | 88 (46.1)  | 47 (24.6)  | 24 (12.6)   | 4 (2.1)      | 5 (2.6)     |
| <b>I am only held responsible for those things I can influence</b>                                    |      |             |            |            |             |              |             |
| 2.64  | 1.20 | 25 (13.1)   | 80 (41.9)  | 34 (17.8)  | 29 (15.2)   | 13 (6.8)     | 3 (1.6)     |
| <b>Senior management keeps everyone in the organisation informed about current activities</b>         |      |             |            |            |             |              |             |
| 2.65  | 1.25 | 34 (17.8)   | 70 (36.6)  | 29 (15.2)  | 38 (19.9)   | 16 (8.4)     | 1 (0.5)     |
| <b>Future plans for the organisation are clearly communicated to employees</b>                        |      |             |            |            |             |              |             |
| 2.71  | 1.21 | 27 (14.1)   | 73 (38.2)  | 37 (19.4)  | 32 (16.8)   | 20 (10.5)    | 0 (0)       |
| <b>I have full confidence in the process by which important organisational decisions are made</b>     |      |             |            |            |             |              |             |
| 2.79  | 1.27 | 25 (13.1)   | 68 (35.6)  | 44 (23)    | 22 (11.5)   | 27 (14.1)    | 1 (0.5)     |
| <b>It is clear where one person's job ends and another person's begins</b>                            |      |             |            |            |             |              |             |
| 2.95  | 1.22 | 24 (12.6)   | 49 (25.7)  | 49 (25.7)  | 48 (25.1)   | 17 (8.9)     | 2 (1)       |
| <b>Employees influence senior management in their making of policy decisions</b>                      |      |             |            |            |             |              |             |
| 2.99  | 1.27 | 20 (10.5)   | 55 (28.8)  | 52 (27.2)  | 34 (17.8)   | 24 (12.6)    | 4 (2.1)     |

| Mean  | sd   | Frequency   |            |            |             |              |             |
|---|------|-------------|------------|------------|-------------|--------------|-------------|
|   |      | SA<br>n (%) | A<br>n (%) | N<br>n (%) | DA<br>n (%) | SDA<br>n (%) | DK<br>n (%) |
| <b>In taking an initiative, my colleagues sometimes ignore rules</b>    |      |             |            |            |             |              |             |
| 3.19  | 1.28 | 11 (5.8)    | 52 (27.2)  | 55 (28.8)  | 32 (16.8)   | 27 (14.1)    | 8 (4.2)     |
| <b>My line manager likes me to consult him/her before I take action</b> |      |             |            |            |             |              |             |
| 3.23  | 1.25 | 18 (9.4)    | 38 (19.9)  | 38 (19.9)  | 57 (29.8)   | 28 (14.7)    | 1 (0.5)     |
| <b>CONSTRUCT RELIABILITY = 0.664</b>                                    |      |             |            |            |             |              |             |

**Sample size = 191**  
**sd = Standard Deviation**  
**SA = Strongly Agree (1)**  
**A = Slightly Agree (2)**

**N = Neutral (3)**  
**DA = Slightly Disagree (4)**  
**SDA = Strongly Disagree (5)**  
**DK = Don't Know (6)**

### 5.3.6 Routine Innovation

Most items in this construct presented a similar pattern in the distribution of frequencies leaning more towards the 'strongly agree' and 'slightly agree' categories except for the final item (*in taking an initiative, my colleagues sometimes ignore rules*) where there was a more even spread of frequencies.

Eight out of the nine items in the construct had a mean in the 'slightly agree' category and only one item had a mean in the 'neutral' category.

**Table 5.11 Routine Innovation Construct: Mean, Standard Deviation & Frequency**

| Mean  | sd   | Frequency   |            |            |             |              |             |
|---|------|-------------|------------|------------|-------------|--------------|-------------|
|   |      | SA<br>n (%) | A<br>n (%) | N<br>n (%) | DA<br>n (%) | SDA<br>n (%) | DK<br>n (%) |
| <b>I am encouraged to be innovative in my work</b>  |      |             |            |            |             |              |             |
| 2.07  | 1.14 | 72 (37.7)   | 58 (30.4)  | 27 (14.1)  | 18 (9.4)    | 7 (3.7)      | 0 (0)       |
| <b>When business opportunities arise, people make an extra effort to capitalise on them</b>     |      |             |            |            |             |              |             |
| 2.38  | 1.14 | 49 (25.7)   | 59 (30.9)  | 49 (25.7)  | 26 (13.6)   | 4 (2.1)      | 2 (1)       |
| <b>My department is encouraged to innovate</b>  |      |             |            |            |             |              |             |
| 2.38  | 1.16 | 46 (24.1)   | 72 (37.7)  | 36 (18.8)  | 27 (14.1)   | 5 (2.6)      | 3 (1.6)     |
| <b>My colleagues often take the initiative in solving problems</b>                              |      |             |            |            |             |              |             |
| 2.40  | 1.10 | 40 (20.9)   | 76 (39.8)  | 29 (15.2)  | 35 (18.3)   | 5 (2.6)      | 0 (0)       |
| <b>Senior management encourages workers to use their initiative when procedures are unclear</b> |      |             |            |            |             |              |             |
| 2.65  | 1.27 | 37 (19.4)   | 63 (33)    | 40 (20.9)  | 31 (16.2)   | 17 (8.9)     | 2 (1)       |
| <b>The organisation responds promptly to new market innovations</b>                             |      |             |            |            |             |              |             |
| 2.66  | 1.16 | 31 (16.2)   | 57 (29.8)  | 58 (30.4)  | 32 (16.8)   | 6 (3.1)      | 4 (2.1)     |
| <b>In general, the organisation encourages employees to make their own decisions</b>            |      |             |            |            |             |              |             |
| 2.70  | 1.26 | 31 (16.2)   | 70 (36.6)  | 38 (19.9)  | 32 (16.8)   | 17 (8.9)     | 3 (1.6)     |
| <b>Work methods are quickly changed to meet new conditions</b>                                  |      |             |            |            |             |              |             |
| 2.78  | 1.20 | 26 (13.6)   | 61 (31.6)  | 50 (26.2)  | 37 (19.4)   | 11 (5.8)     | 4 (2.1)     |
| <b>In taking an initiative, my colleagues sometimes ignore rules</b>                            |      |             |            |            |             |              |             |
| 3.19  | 1.28 | 11 (5.8)    | 52 (27.2)  | 55 (28.8)  | 32 (16.8)   | 27 (14.1)    | 8 (4.2)     |
| <b>CONSTRUCT RELIABILITY = 0.803</b>  |      |             |            |            |             |              |             |

Sample size = 191

sd = Standard Deviation

SA = Strongly Agree (1)

A = Slightly Agree (2)

N = Neutral (3)

DA = Slightly Disagree (4)

SDA = Strongly Disagree (5)

DK = Don't Know (6)

### 5.3.7 Knowledge-Sharing Based Reward

There was a broad range of means in responses to the knowledge-sharing based reward construct varying from 'strongly agree' to 'neutral' (SA = 7%, A = 72%, N = 21%). One item (*promotion within the organisation is clearly based on merit*) shows a distinctively different response pattern from the rest of the items as the percentage of people strongly disagreeing with this statement was higher (17.3%) than those who strongly agreed (11.5%).

**Table 5.12 Knowledge-Sharing Based Reward Construct: Mean, Standard Deviation & Frequency**

| Mean   | sd   | Frequency   |            |            |             |              |             |
|--|------|-------------|------------|------------|-------------|--------------|-------------|
|  |      | SA<br>n (%) | A<br>n (%) | N<br>n (%) | DA<br>n (%) | SDA<br>n (%) | DK<br>n (%) |
| <b>Colleagues in my department value me</b>  |      |             |            |            |             |              |             |
| 1.91   | 0.98 | 69 (36.1)   | 89 (46.6)  | 23 (12)    | 5 (2.6)     | 1 (0.5)      | 4 (2.1)     |
| <b>There are appropriate systems for appraising my performance</b>                   |      |             |            |            |             |              |             |
| 2.21   | 1.28 | 73 (38.2)   | 48 (25.1)  | 28 (14.7)  | 24 (12.6)   | 9 (4.7)      | 2 (1)       |
| <b>In the main, the organisation meets my needs</b>                                  |      |             |            |            |             |              |             |
| 2.27   | 1.34 | 54 (28.3)   | 67 (35.1)  | 36 (18.8)  | 21 (11)     | 9 (4.7)      | 0 (0)       |
| <b>I receive appropriate benefits</b>  |      |             |            |            |             |              |             |
| 2.52   | 1.31 | 58 (30.4)   | 40 (20.9)  | 42 (22)    | 35 (18.3)   | 15 (7.9)     | 0 (0)       |
| <b>The organisation takes career development seriously</b>                           |      |             |            |            |             |              |             |
| 2.56   | 1.31 | 43 (22.5)   | 70 (36.6)  | 29 (15.2)  | 28 (14.7)   | 19 (9.9)     | 2 (1)       |
| <b>Employees who work hard are appropriately recognised</b>                          |      |             |            |            |             |              |             |
| 2.72   | 1.42 | 44 (23)     | 54 (28.3)  | 29 (15.2)  | 34 (17.8)   | 22 (11.5)    | 4 (2.1)     |
| <b>In general, the organisation appropriately rewards employees</b>                  |      |             |            |            |             |              |             |
| 2.75   | 1.31 | 33 (17.3)   | 59 (30.9)  | 44 (23)    | 28 (14.7)   | 19 (9.9)     | 4 (2.1)     |
| <b>I receive a salary appropriate to the work I undertake</b>                        |      |             |            |            |             |              |             |
| 2.76   | 1.38 | 43 (22.5)   | 50 (26.2)  | 34 (17.8)  | 37 (19.4)   | 24 (12.6)    | 2 (1)       |
| <b>Sharing knowledge is taken into consideration in my performance appraisal</b>     |      |             |            |            |             |              |             |
| 2.77   | 1.38 | 44 (23)     | 39 (20.4)  | 41 (21.5)  | 39 (20.4)   | 15 (7.9)     | 5 (2.6)     |
| <b>There are clear differences in pay awards made to good and bad performers</b>     |      |             |            |            |             |              |             |
| 2.89   | 1.49 | 37 (19.4)   | 56 (29.3)  | 32 (16.8)  | 33 (17.3)   | 22 (11.5)    | 11 (5.8)    |
| <b>Consequences of poor performance are clear for all to see</b>                     |      |             |            |            |             |              |             |
| 2.96   | 1.41 | 31 (16.2)   | 55 (28.8)  | 36 (18.8)  | 37 (19.4)   | 25 (13.1)    | 7 (3.7)     |
| <b>Motivation in the organisation is currently at a high level</b>                   |      |             |            |            |             |              |             |
| 3.02   | 1.40 | 33 (17.3)   | 42 (22)    | 43 (22.5)  | 40 (20.9)   | 28 (14.7)    | 5 (2.6)     |
| <b>Promotion within the organisation is clearly based on merit</b>                   |      |             |            |            |             |              |             |
| 3.02   | 1.40 | 22 (11.5)   | 59 (30.9)  | 42 (22)    | 32 (16.8)   | 33 (17.3)    | 3 (1.6)     |
| <b>Employees whose work is not of the highest order are dealt with appropriately</b> |      |             |            |            |             |              |             |
| 3.10   | 1.29 | 23 (12)     | 40 (20.9)  | 51 (26.7)  | 49 (25.7)   | 17 (8.9)     | 7 (3.7)     |
| <b>CONSTRUCT RELIABILITY = 0.736</b>   |      |             |            |            |             |              |             |

Sample size = 191  
sd = Standard Deviation  
SA = Strongly Agree (1)  
A = Slightly Agree (2)

N = Neutral (3)  
DA = Slightly Disagree (4)  
SDA = Strongly Disagree (5)  
DK = Don't Know (6)

### 5.3.8 Effective Information Technology

All responses to items in the effective IT construct had a mean in the 'slightly agree' category but there was a distinct difference in the distribution of frequencies where the responses to the first two items leaned more towards slightly agree or strongly agree and the last two items showed a more even spread of frequencies.

**Table 5.13 Effective IT Construct: Mean, Standard Deviation & Frequency**

| Mean   | sd   | Frequency   |            |            |             |              |             |
|--|------|-------------|------------|------------|-------------|--------------|-------------|
|  |      | SA<br>n (%) | A<br>n (%) | N<br>n (%) | DA<br>n (%) | SDA<br>n (%) | DK<br>n (%) |
| <b>My department receives sufficient information to enable it to achieve its goals</b> |      |             |            |            |             |              |             |
| 2.17   | 0.99 | 51 (26.7)   | 77 (40.3)  | 40 (20.9)  | 16 (8.4)    | 2 (1)        | 1 (0.5)     |
| <b>Organisational information is well presented</b>                                    |      |             |            |            |             |              |             |
| 2.42   | 1.17 | 44 (23)     | 65 (34)    | 44 (23)    | 23 (12)     | 8 (4.2)      | 2 (1)       |
| <b>My department suffers from information overload</b>                                 |      |             |            |            |             |              |             |
| 2.77   | 1.20 | 25 (13.1)   | 63 (33)    | 46 (24.1)  | 32 (16.8)   | 18 (9.4)     | 1(0.5)      |
| <b>Information is always available when it is needed</b>                               |      |             |            |            |             |              |             |
| 2.80   | 1.18 | 29 (15.2)   | 53 (27.7)  | 45 (23.6)  | 48 (25.1)   | 11 (5.8)     | 1 (0.5)     |
| <b>CONSTRUCT RELIABILITY = 0.603</b>   |      |             |            |            |             |              |             |

Sample size = 191  
 sd = Standard Deviation  
 SA = Strongly Agree (1)  
 A = Slightly Agree (2)

N = Neutral (3)  
 DA = Slightly Disagree (4)  
 SDA = Strongly Disagree (5)  
 DK = Don't Know (6)

### 5.3.9 Availability of Time

Responses to items in the availability of time construct showed consistent means all within the 'slightly agree' category. Further, the distribution of responses was similar with at least 40% of all respondents either slightly agreeing or strongly agreeing with all the statements in the construct.

**Table 5.14 Availability of Time Construct: Mean, Standard Deviation & Frequency**

| Mean   | sd   | Frequency   |            |            |             |              |             |
|--|------|-------------|------------|------------|-------------|--------------|-------------|
|  |      | SA<br>n (%) | A<br>n (%) | N<br>n (%) | DA<br>n (%) | SDA<br>n (%) | DK<br>n (%) |
| <b>I do not have time to read all the documentation that is passed to me</b> |      |             |            |            |             |              |             |
| 2.54   | 1.28 | 40 (20.9)   | 76 (39.8)  | 19 (9.9)   | 35 (18.3)   | 16 (8.4)     | 1 (0.5)     |
| <b>I have to put in long hours to achieve my work targets</b>                |      |             |            |            |             |              |             |
| 2.58   | 1.34 | 52 (27.2)   | 55 (28.8)  | 25 (13.1)  | 31 (16.2)   | 23 (12)      | 1 (0.5)     |
| <b>There is often too much work to do in the time allocated</b>              |      |             |            |            |             |              |             |
| 2.73   | 1.34 | 36 (18.8)   | 65 (34)    | 25 (13.1)  | 37 (19.4)   | 23 (12)      | 1 (0.5)     |
| <b>I often feel that the pressure of work is excessive</b>                   |      |             |            |            |             |              |             |
| 2.89   | 1.29 | 29 (15.2)   | 50 (26.2)  | 44 (23)    | 36 (18.8)   | 24 (12.6)    | 1 (0.5)     |
| <b>Work piles up faster than I can complete it</b>                           |      |             |            |            |             |              |             |
| 2.95   | 1.33 | 30 (15.7)   | 51 (26.7)  | 32 (16.8)  | 47 (24.6)   | 26 (13.6)    | 1 (0.5)     |
| <b>CONSTRUCT RELIABILITY = 0.821</b>   |      |             |            |            |             |              |             |

Sample size = 191

sd = Standard Deviation

SA = Strongly Agree (1)

A = Slightly Agree (2)

N = Neutral (3)

DA = Slightly Disagree (4)

SDA = Strongly Disagree (5)

DK = Don't Know (6)

### 5.3.10 Overall Frequency of Responses to Items in Constructs

The table below provides a summary of frequency of responses to items in each of the individual constructs. There is a clear pattern of responses with responses in the 'slightly agree' category being most popular followed by responses in the 'strongly agree' category. Very few responses fell into the 'strongly disagree' and 'don't know' categories.

The only construct where there was a very slight variation in weightings of responses was the knowledge-sharing based reward construct where fewer responses fell in the 'slightly agree' category and more responses fell in the 'strongly disagree' category than the rest of the constructs.



**Table 5.15: Average Frequency of Responses to Items in Constructs**

| <b>Construct</b>                  | <b>Strongly Agree (%)</b> | <b>Slightly Agree (%)</b> | <b>Neutral (%)</b> | <b>Slightly Disagree (%)</b> | <b>Strongly Disagree (%)</b> | <b>Don't Know (%)</b> |
|-----------------------------------|---------------------------|---------------------------|--------------------|------------------------------|------------------------------|-----------------------|
| Knowledge-Friendly Culture        | 24                        | 36                        | 18                 | 13                           | 6                            | 3                     |
| High Trust Climate                | 26                        | 36                        | 18                 | 12                           | 6                            | 2                     |
| Routine Knowledge Sharing         | 23                        | 37                        | 19                 | 14                           | 6                            | 1                     |
| High Levels of Job satisfaction   | 24                        | 36                        | 19                 | 13                           | 6                            | 2                     |
| Flexible Organisational Structure | 18                        | 37                        | 20                 | 15                           | 8                            | 2                     |
| Routine Innovation                | 18                        | 37                        | 20                 | 15                           | 8                            | 2                     |
| Knowledge-Sharing Based Reward    | 23                        | 29                        | 19                 | 17                           | 10                           | 2                     |
| Effective IT                      | 20                        | 34                        | 23                 | 16                           | 5.5                          | 0.5                   |
| Availability of Time              | 20                        | 31                        | 16                 | 20                           | 12                           | 1                     |

#### **5.4 Objective 2: Relationship between Critical Success Factors and Perceptions of Organisational Success**

The second objective for this research is:

- **To establish which of the critical success factors has an impact on perceptions of organisational success.**

In order to address this objective, primary data was collected through the use of self-completed postal questionnaires. Details of the profile of respondents to the survey are provided in section 5.2. Analyses of the results of this questionnaire are presented below. All analyses presented in these sections were conducted using SPSS for Windows, Version 14.

Further, a number of hypotheses were developed in order to answer this objective. For ease of reference, these hypotheses are listed below.

**H1:** *There is no relationship between a knowledge-friendly culture and perceptions of organisational success.*

**H2:** *There is no relationship between a high-trust climate and perceptions of organisational success.*

**H3:** *There is no relationship between routine knowledge sharing and perceptions of organisational success.*

**H4:** *There is no relationship between high levels of job satisfaction and perceptions of organisational success.*

**H5:** *There is no relationship between a flexible organisational structure and perceptions of organisational success.*

**H6:** *There is no relationship between routine innovation and perceptions of organisational success.*

**H7:** *There is no relationship between knowledge-sharing based reward and perceptions of organisational success.*

**H8:** *There is no relationship between effective IT and perceptions of organisational success.*

**H9:** *There is no relationship between availability of time and perceptions of organisational success.*

In addressing the second objective, the next section begins by establishing the relationship between awareness of KM programme and perceptions of organisational success. Following that, the relationships between individual constructs and perceptions of organisational success for the two groups of organisations are explored. Finally, predictors of success for the two groups are

investigated identifying which of the critical success factors account for the variance in perceptions of organisational success.

#### **5.4.1 Relationship between Awareness of KM Programme and Organisational Success**

In order to address the second objective for the research, i.e. establish the impact of the critical success factors on perceptions of organisational success and establish whether the research hypotheses are supported or not; it was important to ascertain if there was a difference in perceptions of success between the two different groups of organisations within the sample (i.e. those who operate in a KM environment and those who do not - as discussed in section 3.12.4). Details of the t-test conducted to determine this are provided in table 5.16 below.

Table 5.16 T-test – Awareness of KM vs Perceptions of Organisational Success

|                               | n   | Mean | Std Deviation | t     | df  | Sig (2-tailed) |
|-------------------------------|-----|------|---------------|-------|-----|----------------|
| KM Environment                | 62  | 1.85 | 1.08          | -2.35 | 184 | .020*          |
| Non-KM Environment            | 125 | 2.29 | 1.26          |       |     |                |
| * Significant at the 5% level |     |      |               |       |     |                |

The t-test shows that there is a statistically significant difference, at the 5% level, between the perceptions of success among those who operate in a KM environment compared with those who operate in a non-KM environment. Thus, those who operate in a KM environment have a different perception of success compared to those operating in a non-KM environment.

#### **5.4.2 Relationship between Individual Constructs and Perceptions of Organisational Success**

Having established that there is a difference in perceptions of success between the two groups of organisations, this next section presents the findings in

respect of the relationship between the individual constructs and perceptions of organisational success for the two groups.

#### 5.4.2.1 Knowledge-Friendly Culture

Table 5.17 Correlation Coefficients – Knowledge-Friendly Culture vs Perceptions of Organisational Success

| Construct                     | KM Environment<br>(N = 62) | Non-KM Environment<br>(N = 125) |
|-------------------------------|----------------------------|---------------------------------|
| Knowledge-Friendly Culture    | $r = .330^*$               | $r = .534^*$                    |
| * Significant at the 5% level |                            |                                 |

The results show that there is a statistically significant relationship, at the 5% level, between a knowledge-friendly culture and organisational success for both groups.

#### 5.4.2.2 High-Trust Climate

Table 5.18 Correlation Coefficients – High-Trust Climate vs Perceptions of Organisational Success

| Construct                     | KM Environment<br>(N = 62) | Non-KM Environment<br>(N = 125) |
|-------------------------------|----------------------------|---------------------------------|
| High-Trust Climate            | $r = .353^*$               | $r = .542^*$                    |
| * Significant at the 5% level |                            |                                 |

Similar to knowledge-friendly culture, a high-trust climate also showed a statistically significant relationship with perceptions of organisational success for organisations operating in a KM environment and those operating in a non-KM environment.

### 5.4.2.3 Routine Knowledge Sharing

Table 5.19 Correlation Coefficients – Routine Knowledge Sharing vs Perceptions of Organisational Success

| Construct                     | KM Environment<br>(N = 62) | Non-KM Environment<br>(N = 125) |
|-------------------------------|----------------------------|---------------------------------|
| Routine Knowledge Sharing     | $r = .702^*$               | $r = .031$                      |
| * Significant at the 5% level |                            |                                 |

The relationship between routine knowledge sharing and organisational success was different from the previous two constructs in that routine knowledge sharing was statistically significant, at the 5% level, for organisations which operated in a KM environment whereas for those organisations operating in a non-KM environment, there was no statistically significant relationship between routine knowledge sharing and perceptions of organisational success.

### 5.4.2.4 High Levels of Job Satisfaction

Table 5.20 Correlation Coefficients – High Levels of Job Satisfaction vs Perceptions of Organisational Success

| Construct                       | KM Environment<br>(N = 62) | Non-KM Environment<br>(N = 125) |
|---------------------------------|----------------------------|---------------------------------|
| High Levels of Job Satisfaction | $r = .548^*$               | $r = -.056$                     |
| * Significant at the 5% level   |                            |                                 |

High levels of job satisfaction was statistically significantly related to organisational success in an environment where there was a KM programme ( $r = .548, p < .05$ ). For organisations in a non-KM environment, the results show no significant relationship between high levels of job satisfaction and organisational success.

#### 5.4.2.5 Flexible Organisational Structure

Table 5.21 Correlation Coefficients – Flexible Organisational Structure vs Perceptions of Organisational Success

| Construct                         | KM Environment<br>(N = 62) | Non-KM Environment<br>(N = 125) |
|-----------------------------------|----------------------------|---------------------------------|
| Flexible Organisational Structure | $r = .638^*$               | $r = .508^*$                    |
| * Significant at the 5% level     |                            |                                 |

The results show a statistically significant relationship between a flexible organisational structure and perceptions of organisational success for both organisations that operate in a KM environment and those that do not.

#### 5.4.2.6 Routine Innovation

Table 5.22 Correlation Coefficients – Routine Innovation vs Perceptions of Organisational Success

| Construct                     | KM Environment<br>(N = 62) | Non-KM Environment<br>(N = 125) |
|-------------------------------|----------------------------|---------------------------------|
| Routine Innovation            | $r = .102$                 | $r = .344^*$                    |
| * Significant at the 5% level |                            |                                 |

The results show that there is no significant relationship between routine innovation and organisational success for organisations which have a KM programme. Organisations which operate in a non-KM environment however, showed a statistically significant relationship between routine innovation and perceptions of organisational success ( $r = .344, p < .05$ ).

#### 5.4.2.7 Knowledge-Sharing Based Reward

Table 5.23 Correlation Coefficients – Knowledge-Sharing Based Reward vs Perceptions of Organisational Success

| Construct                      | KM Environment<br>(N = 62) | Non-KM Environment<br>(N = 125) |
|--------------------------------|----------------------------|---------------------------------|
| Knowledge-Sharing Based Reward | $r = .545^*$               | $r = -.007$                     |
| * Significant at the 5% level  |                            |                                 |

Table 5.23 shows that there is a statistically significant relationship between knowledge-sharing based reward and perceptions of organisational success for organisations operating a KM programme ( $r = .545, p < .05$ ). This was not the case for organisations not operating a KM programme as there was no significant relationship between knowledge-sharing based reward and perceptions of organisational success.

#### 5.4.2.8 Effective Information Technology

Table 5.24 Correlation Coefficients – Effective IT vs Perceptions of Organisational Success

| Construct                        | KM Programme<br>(N = 62) | No KM Programme<br>(N = 125) |
|----------------------------------|--------------------------|------------------------------|
| Effective Information Technology | $r = .524^*$             | $r = .578^*$                 |
| * Significant at the 5% level    |                          |                              |

The relationship between effective IT and perceptions of organisational success was statistically significant for both groups of organisations.

#### 5.4.2.9 Availability of Time

Table 5.25 Correlation Coefficients – Availability of Time vs Perceptions of Organisational Success

| Construct                     | KM Environment<br>(N = 62) | Non-KM Environment<br>(N = 125) |
|-------------------------------|----------------------------|---------------------------------|
| Availability of Time          | r = -.025                  | r = .064                        |
| * Significant at the 5% level |                            |                                 |

The results show that there was no statistically significant relationship between availability of time and perceptions of organisational success for both organisations that were operating in a KM environment and those that were operating in a non-KM environment.

#### 5.4.3 Summary of Relationships

The results from the analysis of correlations above, point towards a pattern of significant relationships between the different constructs and the sub-samples.

Table 5.26 below outlines whether the hypotheses (developed as part of answering this research objective) were supported or not supported for each of the sub-samples and the findings are discussed in the sections below.



Table 5.26 Result of Research Hypothesis Testing in Sub-samples

| <b>Hypothesis</b>   | <b>KM Environment</b> | <b>Non- KM Environment</b> |
|---|-----------------------|----------------------------|
| There is no relationship between a <b>knowledge-friendly culture</b> and perceptions of organisational success        | No                    | No                         |
| There is no relationship between a <b>high-trust climate</b> and perceptions of organisational success                | No                    | No                         |
| There is no relationship between <b>routine knowledge sharing</b> and perceptions of organisational success           | No                    | Yes                        |
| There is no relationship between <b>high levels of job satisfaction</b> and perceptions of organisational success.    | No                    | Yes                        |
| There is no relationship between a <b>flexible organisational structure</b> and perceptions of organisational success | No                    | No                         |
| There is no relationship between <b>routine innovation</b> and perceptions of organisational success                  | Yes                   | No                         |
| There is no relationship between <b>knowledge-sharing based reward</b> and perceptions of organisational success      | No                    | Yes                        |
| There is no relationship between <b>effective IT</b> and perceptions of organisational success                        | No                    | No                         |
| There is no relationship between <b>availability of time</b> and perceptions of organisational success                | Yes                   | Yes                        |
| <b>Yes = Hypothesis supported No = Hypothesis not supported</b>   |                       |                            |

#### **5.4.3.1 Factors Influencing Success for Organisations Operating a KM Programme**

In the sample where organisations were operating a KM programme (n=62), there was a distinctive difference from the other sample as in these organisations, perceptions of organisational success showed a statistically significant relationship with seven of the nine constructs.

Knowledge-friendly culture, high-trust climate, routine knowledge sharing, high levels of job satisfaction, flexible organisational structure, knowledge-sharing based reward and effective IT were all correlated with perceptions of organisational success.

The two factors that showed no statistically significant relationship with perceptions of organisational success were routine innovation and availability of time.

#### **5.4.3.2 Factors Influencing Success for Organisations Not Operating a KM Programme**

For organisations which did not pursue a KM programme (n=125), organisational success was statistically significant with only five of the nine constructs.

Knowledge-friendly culture, high-trust climate, flexible organisational structure, routine innovation and effective IT were all significantly correlated with organisational success. The factors that showed no relationship with perceptions of organisational success in this sample were routine knowledge sharing, high levels of job satisfaction, knowledge-sharing based reward and availability of time.

Thus, the results show that there is a distinct difference between the factors affecting perceptions of organisational success in firms that operate in a KM environment and those that do not.

### **5.5 Predictors of Success**

Having established which of the constructs is correlated with perceptions of organisational success for each of the groups; this section presents the results of

the regression analysis which was used to identify how accountable each of these constructs is for perceptions of organisational success, within each of the sub-samples.

### **5.5.1 Predictors of Success for Organisations Operating in a KM Environment**

For organisations that operate a KM programme, the results (table 5.27 below) show that out of the seven constructs that were significantly correlated with organisational success, the two constructs that most influence organisational success in this sample are routine knowledge sharing and knowledge-sharing based reward.

The model suggests that the combination of routine knowledge sharing and knowledge-sharing based reward account for 59% of the variance in perceptions of organisational success. The t-statistic indicates that routine knowledge sharing makes almost double the contribution to the model than reward. Nonetheless, both routine knowledge sharing and knowledge-sharing based reward are statistically significant at the 5% level.

The Stepwise method in regression only adds variables that make a significant contribution to the model ( $> .05$ ). In this case, the remaining five constructs, although significantly correlated with success for this sample were not added as they did not make a significant contribution to the model.

Furthermore, the model can be used to generalise as there is only 2% ( $.59 - .57 = .02$ ) less variance should the model be derived from the total population as opposed to the sample.

**Table 5.27 Stepwise Regression Model for Organisations Operating a KM Programme**

| Model |                                | B     | SE B | $\beta$ | t     | sig   |
|-------|--------------------------------|-------|------|---------|-------|-------|
| 1     | Constant                       | -0.80 | 0.39 |         | -2.03 | .049  |
|       | Routine Knowledge Sharing      | 0.07  | 0.01 | .73     | 7.01  | .000* |
| 2     | Constant                       | -0.54 | 0.39 |         | -1.41 | .166  |
|       | Routine Knowledge Sharing      | 0.06  | 0.01 | .59     | 5.18  | .000* |
|       | Knowledge-Sharing Based Reward | 0.01  | 0.00 | .28     | 2.47  | .018* |

Note:  $R^2 = .53$ ,  $\Delta R^2 = .52$  for step 1,  $R^2 = .59$ ,  $\Delta R^2 = .57$  for step 2  
\* Significant at the 5% Level

1= Routine Knowledge Sharing

2= Routine Knowledge Sharing, Knowledge-sharing Based Reward

### 5.5.2 Predictors of Success for Organisations Operating in a Non-KM Environment

For organisations operating in a non-KM environment, the two constructs of effective IT and high-trust climate accounted for 40% of the variance in perceptions of organisational success for that sample. The remaining three constructs that were significantly correlated with success for this sample were not added as they did not make a significant contribution to the model.

The t-statistic indicates that both effective IT and high-trust climate make relatively similar contributions (4.10 & 3.86 respectively) to the model in a situation where all other variables are held constant. Furthermore, both constructs are highly significant at the 5% level.

The table below provides details of the coefficients for this regression model, and shows that there is only 1% (.40 - .39 = .01) less variance should the model be derived from the total population as opposed to the actual sample.

**Table 5.28 Stepwise Regression Model for Organisations Operating in a  
Non-KM Environment**

| Model |                    | B     | SE B | $\beta$ | t     | sig   |
|-------|--------------------|-------|------|---------|-------|-------|
| 1     | Constant           | 0.34  | 0.29 |         | 1.15  | .252  |
|       | Effective IT       | 0.26  | 0.04 | .56     | 7.05  | .000* |
| 2     | Constant           | -0.48 | 0.35 |         | -1.38 | .170  |
|       | Effective IT       | 0.17  | 0.04 | .37     | 4.10  | .000* |
|       | High-trust Climate | 0.01  | 0.00 | .35     | 3.86  | .000* |

Note:  $R^2 = .31$ ,  $\Delta R^2 = .31$  for step 1,  $R^2 = .40$ ,  $\Delta R^2 = .39$  for step 2  
\* Significant at the 5% level

1= Effective IT

2= Effective IT, High-Trust Climate

## 5.6 Key Findings: Objective 2

The second objective of this research is:

- To establish which of the critical success factors has an impact on perceptions of organisational success.

Through the analysis of findings from a large scale postal survey, this research was able to establish which of the critical success factors had an impact on perceptions of organisational success in organisations that operate in a KM environment and those that do not. Further, the findings also determined which of those factors made a significant contribution to perceptions of organisational success in the two groups. These findings are summarised below.

### 5.6.1 Critical Success Factors

For organisations operating a KM programme, the factors that influenced perceptions of success were knowledge-friendly culture, high-trust climate, routine knowledge sharing, high levels of job satisfaction, flexible organisational structure, knowledge-sharing based reward and effective IT. All

these seven factors showed a statistically significant relationship with perceptions of organisational success.

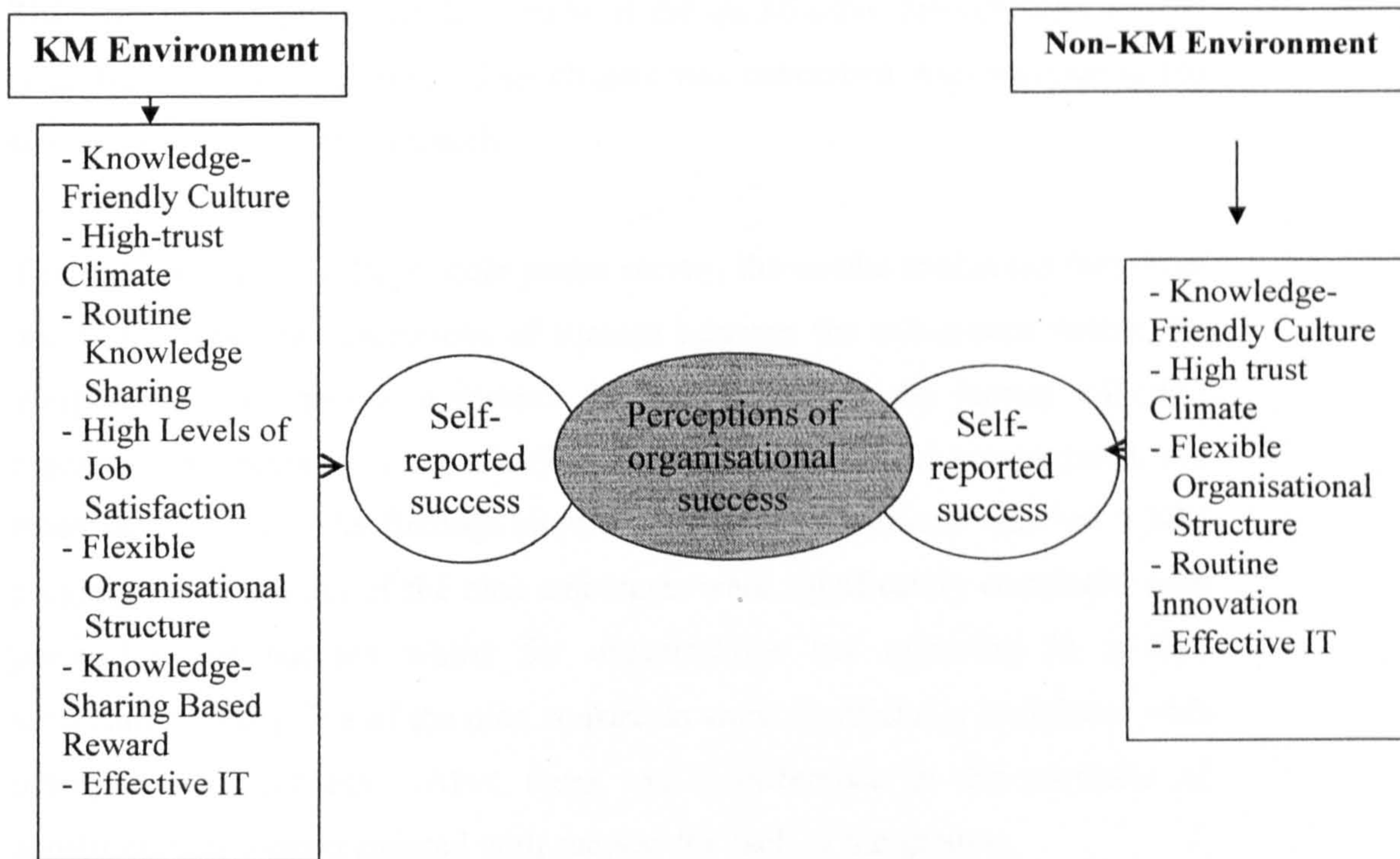
The two factors that showed no statistically significant relationship with perceptions of organisational success were routine innovation and availability of time.

For those organisations not operating in a KM environment, five factors showed a statistically significant relationship with perceptions of organisational success. These were knowledge-friendly culture, high-trust climate, flexible organisational structure, routine innovation and effective IT.

The factors that showed no relationship with perceptions of organisational success in this sample were routine knowledge sharing, high levels of job satisfaction, knowledge-sharing based reward and availability of time.

The model below depicts the factors that are associated with perceptions of organisational success for organisations operating in a KM environment compared with organisations operating in a non-KM environment.

Fig. 5.1: Factors Associated with Perceptions of Organisational Success



### 5.6.2 Predictors of Success

For organisations that operate in a KM environment, out of the seven factors that showed a significant relationship with perceptions of organisational success, two factors made the most influence on perceptions of organisational success. These were routine knowledge sharing and knowledge-sharing based reward. The combination of these two factors accounted for 59% of the variance in perceptions of organisational success for this group of organisations.

In organisations that operate in a non-KM environment, two out of the five factors that showed a significant relationship with perceptions of organisational success made the most influence on perceptions of organisational success. These were effective IT and high-trust climate which accounted for 40% of the variance in perceptions of organisational success.

## **5.7 Summary**

This chapter has presented the results of the quantitative primary data in line with the research objectives. This chapter was concerned with addressing the second objective for the research.

Through analysis of a large scale postal survey, the results confirmed that there was a difference in perceptions of success between the sub-groups within the sample and that there is a distinct difference between the factors affecting organisational success in organisations that operate in a KM environment and those that do not. The findings showed that for organisations that had a KM programme, seven out of the nine constructs were significantly correlated with perceptions of success whilst for organisations not operating in a KM environment, only five of the nine constructs were significantly correlated with perceptions of success. Also, there was a difference in the portfolio of constructs that were correlated with success for each of the groups.

Further, findings indicated that the two main constructs that account for variance in perceptions of success for organisations that operate a KM programme were routine knowledge sharing and knowledge-sharing based reward. For organisations that operated in a non-KM environment, the two constructs that significantly impacted on the variance in perceptions of success were effective IT and high-trust climate.

Thus, this answered all of the research questions set for this study. All findings emerging from this research will be evaluated in line with the research objectives and the extant literature in the next chapter.



## **Chapter 6**

### **Discussion of Results**

## **6.1 Introduction**

The aim of this chapter is to discuss the results in line with the research objectives. The previous two chapters presented the results of the research and this chapter now builds on this by evaluating these results with respect to both the objectives of the research as well as the extant literature on KM. This will allow the research to be positioned in terms of its contribution to knowledge.

The chapter addresses each of the research objectives in turn, analysing the results for that particular objective and evaluating them with respect to the extant literature.

The specific objectives for this research are:

- **To identify the critical success factors for KM programmes.**
- **To establish which of these critical success factors has an impact on perceptions of organisational success.**

## **6.2 Critical Success Factors for KM**

This section is divided into two parts. The first discusses the factors that were confirmed as critical to the success of KM programmes, and the second discusses the factors which were not viewed as critical to KM success.

### **6.2.1 Factors Critical to the Success of KM Programmes**

#### **6.2.1.1 Knowledge-Friendly Culture**

In line with previous KM literature, interviewees confirmed a knowledge-friendly culture as one of the critical success factors for KM. KM research identifies culture as one of the main preconditions for a successful KM

programme (Chase, 1997, Davenport et al., 1998, McDermott and O'Dell, 2001) and this was corroborated by many of the interviewees.

Interviewees cited many different facets of a knowledge-friendly culture such as trust, a good working environment and team spirit. This is in support of the literature with regard to taking a holistic view of culture incorporating a complete organisational social system and not just singular phenomenon (Louis, 1983, Wallace et al., 1999). However, this poses a challenge for management as all these characteristics of culture are fluid and difficult to measure and control (Chase, 1997, Deal, 1986).

Further, responses to interview questions highlighted the different interpretations of the aspects of culture, held by the key informants. In exploring trust as a typical example of a “conducive organisational culture”, some respondents saw knowledge sharing amongst employees as a representation of trust while others interpreted trust through the development of personal or friendly relationships amongst employees in an organisation. This seems to reflect Goffee & Jones Corporate Culture Framework (1998) which categorised organisational culture based on the two dimensions of sociability and solidarity where sociability represented personal relationships and solidarity represented the pursuit of organisational goals. From a management perspective, this demonstrates that culture can mean different things to different people underlining the complexities associated with this concept as a whole. However, interviewees were almost agreed in that a knowledge-friendly culture was of paramount importance to the success of any KM initiative.

Interviewees also cited many of the issues that the KM literature addresses with regard to culture. Primarily, the inability to instigate a particular culture was identified as one of the major challenges for KM. This is in line with previous research in the area which has identified culture as one of the biggest hurdles in developing a KM programme (Ernst and Young, 1997). Another challenge posed by culture is that cultures take a long time to develop and once

developed, are notoriously difficult to change as people generally resist change. This was identified by a number of interviewees as a barrier to success which again corroborates previous research in the area (Davenport et al., 1998, Hislop, 2005).

In line with the debate in the KM literature, respondents were divided as to whether a knowledge-friendly culture should precede the development of a KM programme or that the KM programme should facilitate the development of a knowledge-friendly organisational culture. Mainly, respondents in private sector organisations where KM is a core activity (e.g. PriceWaterhouse Coopers) felt that KM programmes are pivotal in shaping the organisational culture and laying the correct foundations for a culture that encourages knowledge sharing as well as a culture where KM is embedded in all organisational processes. Employees of public sector organisations on the other hand (e.g. NHS) indicated that KM needs to fit into the organisational culture that already exists as it would be difficult to adapt the current ways of working. This has implications for management in that the type of organisation will have an impact on how KM is positioned within that organisation.

Given the discussion above and the importance of a knowledge-friendly culture to the success of a KM initiative, it is interesting that none of the respondents viewed a friendly or conducive culture as one of the contributions of KM to the organisation. The majority of respondents felt that the chief contribution of any KM programme would be increased effectiveness and efficiency which indicates that they are taking a solidarity view of culture and not a sociability view even though some interviewees had indicated that culture is represented through personal friendships.

### **6.2.1.2 Routine Knowledge Sharing**

The second critical success factor for KM to emerge out of the results was that of routine knowledge sharing. This was not surprising as much of the literature focuses on knowledge sharing as the main pre-condition for effective KM (e.g. Goh, 2002, Hislop, 2005, Huber, 2001, Nonaka, 1991). The survey results showed that 90% of the respondents strongly agreed or slightly agreed with the statement that “knowledge sharing makes it easier for us to achieve our goals”. This indicates the strength of feeling regarding the importance of routine knowledge sharing for the achievement of organisational goals and although this may not be directly related to KM programmes per se, it shows the importance of knowledge sharing for perceptions of organisational effectiveness. This supports research conducted by Yang (2004) which highlighted a positive relationship between knowledge sharing and organisational effectiveness.

Many of the organisations interviewed however were still primarily concerned with IT tools as the main facilitator for routine knowledge sharing efforts. This is in support of the early KM literature where the focus was on the development of IT tools that aid KM initiatives (Goh, 2002). Public sector organisations in particular displayed a tendency to concentrate on IT tools and a number of reasons can be cited for this. Firstly, public sector organisations are relatively new to KM programmes and the most common and convenient starting point for KM tends to be through the development of IT tools that facilitate KM efforts (Stoddart, 2001). Secondly, the type of knowledge being transferred has an impact on the ease by which it can be shared. Explicit knowledge lends itself easily to being transferred through IT tools whereas tacit knowledge is more difficult to transfer and requires participants to interact more closely in order to be able to transfer this type of knowledge. Thus organisations newly embarking on KM programmes tend to focus their efforts initially on transferring explicit knowledge before tackling the more challenging task of

transferring tacit knowledge (Davenport and Prusak, 1998, Goh, 2002, Huber, 2001).

The results showed no evidence of the existence of communities of practise where 'soft' knowledge could be exchanged. This however, does not mean that these communities of practise do not exist as the sharing of tacit knowledge is highly dependant on personal friendships and collaborations (Constant et al., 1994) which may occur outside of the knowledge sharing structures set up by the organisation.

Interviewees in private sector organisations indicated that although IT tools were necessary for routine knowledge sharing, they were only the first step. Routine knowledge sharing in these organisations was viewed as a central requirement for the effective management of knowledge. An example of making knowledge sharing a core element of the way employees operate is through linking it with the appraisal and rewards structure, thereby building it into the culture of the organisation.

Interestingly, the results from the interviews echoed the KM literature in that routine knowledge sharing was viewed as a function of the organisational culture. Interviewees felt that one of the main characteristics of a knowledge-friendly and 'conducive' organisational culture was evidence of effective knowledge sharing. This supports findings from Ruggles (1998) which showed that an organisational culture which inhibited knowledge sharing was one of the main reasons for the failure of KM programmes.

Contrary to the literature which argues that three conditions must exist if routine knowledge sharing is to take place (Nahapiet and Ghoshal, 1998); namely that the opportunity must exist, participants must expect to create value and participants must also believe that taking part in the process is worth their while, the results from the interviews indicated that for interviewees, value creation and reciprocity were not the main concern in knowledge sharing. The

main barrier to knowledge sharing was considered to be the lack of time. Time was viewed as a key scarce resource which hampered the regular exchange of knowledge, the commitment of knowledge to databases as well as the maintenance and updating of knowledge on these IT tools. This could be explained by the fact that the majority of the interviewees were still at a stage where mainly explicit knowledge was being transferred, and in line with research by Constant et al (1994), employees felt that the organisation has a right to this 'hard' knowledge whereas personal expertise is shared with personal friends or if a perceived benefit is expected.

Only one interviewee made reference to the fact that routine sharing of knowledge may be affected by politics within the organisation or have implications for the power or position of the knowledge holder within the organisation. In this particular instance, the knowledge in question was the contacts list of one of the senior members in the organisation which had been developed over a number of years and the knowledge holder was not keen on committing this to a database as this was perceived as a key powerbase for the knowledge holder. These results are in support of previous research (Constant et al., 1994, Goh, 2002, Huber, 2001) with regards to the difficulties involved in sharing personal expertise and knowledge.

The outcome of the finding regarding routine knowledge sharing is a recognition that the type of knowledge being transferred should reflect the support systems for knowledge sharing so that explicit knowledge is shared primarily through IT tools and tacit knowledge is shared primarily through personal interaction and collaboration.

### **6.2.1.3 Effective Information Technology (IT)**

The results indicate that the survival of KM initiatives is dependant to a large extent on the existence of correct and effective IT which facilitates and supports

KM efforts. There was complete consensus amongst the interviewees regarding the fact that effective IT forms one of the key ingredients for setting up a KM programme. This is in line with KM literature which argues that effective IT can play a leading role in managing knowledge in any organisation (Nonaka et al., 1996a, Stoddart, 2001).

Interviewees commented on important characteristics of IT tools being the availability of all organisational knowledge stored centrally; having easy access to organisational knowledge as well as the existence of user-friendly intra and extranets. This suggests that the focal point in these organisations is effective IT from a technological perspective. There was no evidence of attention being given to effective IT from a social perspective where IT tools are used to develop trusting communities and a collaborative culture (Hislop, 2005), although the literature is still in disagreement about the extent to which IT can be used to develop trust amongst employees (Jarvenpaa and Leidner, 1999, Piccoli and Ives, 2003, Townsend et al., 1998). One reason for the focus on the technological perspective maybe that the majority of these organisations are still in the early stages of adopting KM and need to focus efforts on ensuring that the right technology is available which supports the transfer of explicit knowledge before considering the more challenging transfer of tacit knowledge.

The results also showed that one of the issues faced in using IT tools was the difficulty in updating and maintaining these tools. Maintenance of websites and databases etc is a time, effort and resource intensive task and this was viewed as the main disadvantage of IT since the consequences of outdated or wrong information was viewed as more severe than the lack of information. Although the literature highlights the criticality of maintaining IT tools (Coakes, 2006, Sherif et al., 2006), this is not considered a prime focus of current research which is more concerned with exploring ways in which IT can be utilised to transfer tacit knowledge.



Interestingly, the collection of all organisational knowledge and information onto centralised databases was viewed by many of the interviewees as one of the main achievements of KM. This is contrary to the literature which is generally in agreement that effective IT is a facilitator for successful KM, not an outcome of successful KM (Coakes, 2006, Sherif et al., 2006).

Further, interviewees felt that the delivery of effective IT systems can lead to improved organisational efficiency and effectiveness through reduced repetition of work, quicker response times and more satisfied customers. This is in line with research by Watson and Hewett (2006) who argue that efficiency gains and better decision making can be achieved through easy access of information. However, research has yet to establish a clear causal relationship between effective IT and organisational efficiency (Johannessen et al., 2001, Sherif et al., 2006) and therefore managers have to be aware that unlimited investments in IT will not necessarily result directly in improved organisational efficiency.

Push and pull factors were considered of equal importance by interviewees recognising that IT is a useful tool for storing information given that people are willing to commit their knowledge onto a database (i.e. push factors), but equally important is the use of IT to retrieve the knowledge that has been stored (i.e. pull factors). Interestingly, over 26% of respondents to the survey felt that their department suffers from information overload which has implications for management in terms of ensuring that the right amount of information is provided as too much information can have negative effects.

Although the majority of the organisations had no clear method of measuring KM in their organisations, three interviewees commented on the use of IT as a way of measuring KM success. This can be achieved by monitoring number of hits, number of sites accessed etc. This is in support of some of the KM literature which argues that measuring KM success can take a number of forms and using IT is one form of measurement (Housel and Bell, 2001). Managers however need to be aware that this form only measures the use of explicit

knowledge and makes no attempt to capture the use of tacit knowledge which is more likely to create competitive advantage for the organisation.

#### **6.2.1.4 Availability of Time**

Availability of time was the final critical success factor identified by the interviewees. This is in line with some research which identifies lack of time as one of the reasons why KM initiatives fail (Guptara, 1998), but research in this area is very limited. Interestingly, the survey results also indicated the importance of time where 60% of respondents slightly agreed or strongly agreed with the statement that they do not have enough time to read documentation that is passed to them.

Furthermore, although availability of time was identified as a critical success factor in its own right, it was also clear that availability of time was inter-related with all the other critical success factors identified. For example, availability of time has a direct impact on knowledge sharing activities, especially the sharing of tacit knowledge which is dependant on personal interaction. Availability of time was also viewed as an integral part of the culture of the organisation since some organisations are more willing to allow employees time to explore different ways of working and to interact with other employees even if the return on this time investment was uncertain. In terms of IT, availability of time is also critical as there has to be a time investment for training as well as actual use of IT tools before maximum benefits of these tools can be achieved. It is outside the scope of this research to explore the inter-relationships between the factors, yet this is a potential area for further research as it may have serious implications for management practise.

Time was also viewed as a barrier to KM success. Although availability of time is crucial for the success of KM programmes, it is difficult to estimate how much time is actually needed and it is also difficult to measure the impact of the availability of time on the success of these programmes. This may be one of

the reasons why management are hesitant to allocate too much time to these programmes as it is difficult to draw a link between the time invested and the effects on the bottom line.

As discussed in chapter 2 (section 2.4.9) the KM literature lacks any empirical research into the effects of availability of time on the success of KM programmes. However, a possible explanation for this proposed by O'Dell (1999) is that availability of time should not be viewed as a separate entity to a KM programme. Time needs to be seen as integral to the workings of any KM system and the processes of the organisation as a whole and therefore should not be studied independently.

Finally, time saving was also viewed as one of the achievements of any KM programme. KM was seen as a facilitator of time savings through easier access to information, better use of information and reduced repetition of work which would all lead to time savings and ultimately, increased organisational efficiency. Again, there is limited research in the KM literature to support this view yet this poses another area for further research.

## **6.2.2 Factors not Critical to the Success of KM Programmes**

### **6.2.2.1 High-Trust Climate**

In line with previous KM literature, high-trust organisational climate was not identified as a critical factor for KM success. The KM literature has not yet drawn a direct link between high-trust organisational climate and KM success but high-trust climate does have an impact on employees' perceptions, attitudes and behaviours (Burke and Litwin, 1992), and as KM initiatives are highly dependent on employee interaction, it is surprising that climate has not been identified as a critical factor for KM success.

One of the reasons for this may be that the terms 'organisational climate' and 'organisational culture' are sometimes used interchangeably or there is confusion over the precise definition of each of these terms (Kangis and Williams, 2000). In general, organisational culture refers to the norms and values of the organisation as a whole (Kangis and Williams, 2000) whereas organisational climate refers to norms and values within specific departments. Interviewees made reference to elements of organisational culture such as trust and co-operation amongst employees but it was unclear whether these references were directed at the organisation as a whole, or specific departments or work groupings within the organisation. This is especially important for large public sector organisations (e.g. NHS) where there are many different departments which have varying values, norms and ways of working.

#### **6.2.2.2 High Levels of Job Satisfaction**

High levels of job satisfaction was not confirmed as a critical factor for success by the interviewees. Although the KM literature lacks empirical evidence of a positive relationship between high-levels of job satisfaction and KM success, there has been some evidence that higher levels of job satisfaction lead to employees who are more capable of building trusting and fruitful relationships with colleagues (Heijden and Brinkman, 2001) which is one of the basic requirements for successful knowledge sharing.

One explanation for high-levels of job satisfaction not being identified as a critical factor for success is that the majority of employees were referring to KM programmes that were in their infancy and where the focus was still on the development and use of the correct IT systems that enable knowledge transfer. This is a more operational level of KM and the concentration of KM programmes at this stage tends to be that the IT systems deliver the required information and are easily accessible by all. Furthermore, KM programmes in the early stages tend to focus less on softer issues such as the development of

trusting relationships where tacit knowledge can be easily transferred and where there may be more need for higher levels of job satisfaction.

It is important to note that respondents to the survey showed medium to high levels of job satisfaction where 71% of the respondents strongly agreed or slightly agreed with 25 out of the 35 statements in that construct. This may indicate that there is generally a high level of satisfaction with jobs in this industry and therefore, job satisfaction is not considered important since it already exists.

### **6.2.2.3 Flexible Organisational Structure**

Flexible organisational structure was also not confirmed as a critical factor for KM success. In fact, one of the interviewees believed that some elements of a flexible organisational structure, or open plan offices in particular, can be seen as a barrier to KM success since they reduce the need for KM systems. The interviewees did not view the grouping structure chosen by the organisation as something that may impact on KM programmes.

Although the KM literature lacks empirical evidence as to the importance of a flexible organisational structure for KM success, it has been identified as a critical area (Davenport and Volpel, 2001) especially through the Hypertext organisational model suggested by Nonaka and Takeuchi (1995).

One explanation for flexible organisational structure not being viewed as important by the interviewees may be that the term 'organisational structure' is itself vague and can be manifested in many ways. Organisational culture may influence how an organisation is structured where flat structures reflect flexible organisations and pyramid structures reflect more rigid organisations. Thus, having identified a knowledge-friendly organisational culture as one of the critical success factors for KM, interviewees may also have been indicating an element of a flexible organisational structure.

Furthermore, the realisation that the collection of all knowledge into a central repository or database as one of the prime contributions of KM, may also be connected with flexible organisational structure. This is due to the fact that as organisations grow in size, it becomes increasingly difficult to manage and collate knowledge. Thus developing knowledge repositories may be one way of overcoming the barriers presented by structures that are not flexible and do not lend themselves to easy transfer of knowledge.

The way an organisation is structured may have many implications for management practise. The KM literature has established the importance of regular social interaction (Hansen, 1999) as well as the development of communities of practise (Lave and Wenger, 1991) as preconditions for effective knowledge sharing. Given the increasing size of organisations in today's economy coupled with the abundance of geographically disparate office locations and the increased use of technology, this has meant that there are fewer opportunities for employee interaction and the development of communities of practise.

#### **6.2.2.4 Routine Innovation**

The interviewees did not identify routine innovation as one of the critical success factors for KM. More interestingly though was the fact that increased innovation was not seen as one of the expected long term achievements of KM programmes. This is surprising given that the majority of KM literature (Drucker, 1993, Johannessen et al., 1999, Sveiby, 1997) argues that the main outcome of KM initiatives should be increased levels of innovation as this leads to more competitive advantage and increased organisational effectiveness.

Although the interviewees made no reference to the significance of routine innovation for KM programmes, routine innovation is a broad concept which is supported by a number of organisational functions. Primarily, routine

knowledge sharing and availability of time are key requirements for the innovation process to take place regularly. Both of these factors were identified as critical to the success of KM programmes and it may be concluded that once these factors are considered to be present, organisations would be more concerned with the development of innovations.

Further, it is difficult to measure innovation and the KM literature is still debating whether innovations can in fact be measured (Kanter, 1984, Leonard and Sensiper, 1998). Hence, innovations require organisations to risk a time investment which may not lead to any organisational gains. The majority of interviewees indicated that KM initiatives were currently not being measured in their organisations and therefore, it is unclear whether KM programmes have led to any early innovations or not.

Another reason that may be cited for the lack of identification of routine innovation as a critical success factor is that the majority of organisations interviewed were in the early stages of KM development with their prime concern being the introduction of effective IT systems that support KM. These types of IT systems focus on the transfer of explicit knowledge whereas innovation is dependant upon the interaction of tacit knowledge with individual creativity to produce new ideas or ways of working (Kanter, 1996). Thus, routine innovation would not be one of the expected outcomes of these early KM efforts and therefore it is not viewed as a critical factor for success.

#### **6.2.2.5 Knowledge-Sharing Based Reward**

Although some interviewees confirmed that different forms of reward are being used within their organisations to incentivise knowledge sharing behaviour, none of the interviewees felt that knowledge-sharing based reward was a critical factor for the success of these KM programmes. This is in line with some KM literature which argues that reward is not necessary for eliciting positive knowledge sharing behaviours and offering rewards may in fact act as a

deterrent to knowledge sharing (Bock and Kim, 2002, Lucas and Ogilvie, 2006).

However, other KM literature argues that knowledge sharing takes place in the knowledge market and unless there are suitable knowledge-sharing based rewards on offer, individuals will not participate in the knowledge market considering that the sharing activity is not worth the effort (Molm, 2001). This may be the reason that some organisations have chosen to introduce knowledge-sharing based rewards as an integral part of their KM programmes but it is interesting to note that the organisations which had a formal reward system were all private sector organisations which had more developed KM programmes. Interviewees from public sector organisations did not refer to a formal system for rewards but this may be because the KM programmes in these organisations were in the early stages of development.

The fact that the majority of interviewees came from organisations which were in the early stages of KM development may also be another explanation for knowledge-sharing based reward not being confirmed as a critical factor for success. Organisations in the early stages of KM programmes tend to focus on the transfer of explicit knowledge usually through IT systems. Research has shown that employees feel that organisations have a right to explicit knowledge in that it is 'owned' by the organisation whereas tacit knowledge is 'owned' by the individual and therefore there needs to be personal benefits before it is given up (Constant et al., 1994). This may be an indicator that although knowledge-sharing based reward may not be considered important currently, as the KM programme develops and there is an increased requirement to transfer tacit knowledge, knowledge-sharing based reward will take a more prominent place as a critical factor for success.



### **6.3 Impact of Critical Success Factors on Perceptions of Organisational Success**

Having identified the critical success factors for KM programmes both from the review of the literature and from key informants in the industry, the second objective for the research was to establish which of these factors had an impact on perceptions of organisational success.

In comparing the perceptions of organisational success for organisations operating in a KM environment and those operating in a non-KM environment, the results showed that there is a statistically significant difference between the two groups. This is an interesting finding indicating that the introduction of a KM programme into an organisation changes the combination of factors that influence perceptions of organisational success. The implications of this finding are huge in that the introduction of a KM programme into an organisation not only changes the way knowledge is managed but also changes the way people work and changes the things that impact on people's perceptions of success.

The next section discusses the results for the associations between the individual factors and perceptions of organisational success. The discussion is grouped into factors that impacted on perceptions of success in organisations operating in a KM environment and in a non-KM environment; in organisations operating in a KM environment only; organisations operating in a non-KM environment only and factors which did not impact on perceptions of organisational success for both groups of organisations.

Following that, a discussion of the predictors of success for both groups of organisations is presented. The final element in addressing the second objective is a comparison of the results for the critical success factors for organisations operating in a KM environment with those operating in a non-KM environment.

### **6.3.1 Factors which Impacted on Perceived Organisational Success for Organisations Operating in a KM Environment and in a Non-KM Environment**

#### **6.3.1.1 Knowledge-Friendly Culture**

Knowledge-friendly culture was associated with perceptions of organisational success irrespective of whether or not the organisation operated in a KM environment.

This finding corroborates results from the key informants in industry where knowledge-friendly culture was identified as one of the main critical success factors for any KM programme.

Furthermore, the KM literature has focused on the importance of developing the correct organisational culture in order to support KM initiatives (Davenport et al., 1998, Malhotra, 2002, Van Den Hooff et al., 2003) therefore, this finding is not surprising.

More interesting though was that the results indicated that knowledge-friendly culture is linked to perceptions of organisational success in both organisations that operate a KM programme and those that operate in a non-KM environment. Owing to the fact that knowledge-friendly culture is a broad concept covering many issues (Louis, 1983, Wallace et al., 1999), the implications of this finding should be a focus on the different elements of knowledge-friendly culture in order to establish the degree of impact on perceptions of organisational success.

These considerations are important since they inform the debate on whether the KM programme needs to fit into the existing organisational culture or the organisational culture needs to be adapted to reflect the needs of the KM programme.

### **6.3.1.2 High-Trust Climate**

Given that the KM literature makes no direct link between high-trust climate and KM, this result is surprising.

In a similar vein to knowledge-friendly culture, high-trust climate was also associated with perceptions of organisational success for organisations in a KM environment as well as in a non-KM environment. This signals the importance of high-trust organisational climate for perceptions of success but also indicates that there needs to be a differentiation between the elements of climate and culture that are prevalent in an organisation in order to be able to manage these concepts.

Interestingly, the link between high-trust climate and perceptions of organisational success is in contrast to results from the key informants where high-trust climate was not identified as a critical success factor for KM programmes. One explanation for this may be that the term 'climate' is somewhat vague and is not as commonly used as the term 'culture' (Burke and Litwin, 1992, Kangis and Williams, 2000) and given that the survey instrument included 60 items dealing with the high-trust climate construct, this allowed a level of detail that was not possible during the interviews. Hence interviewees were referring to the general way of working within the organisation including employee interaction, under the umbrella heading of 'culture', whereas the survey differentiated between culture and climate and therefore yielded different results. Furthermore, the survey reached a larger sample which may have been a contributing factor to the difference in results.

### **6.3.1.3 Flexible Organisational Structure**

The findings showed a flexible organisational structure is associated with perceptions of organisational success for both groups of organisations.

This result is in contrast to findings from the interviews with key informants in the industry who did not identify flexible organisational structure as critical to KM initiatives. One explanation for this variance may be that the term 'flexible organisational structure' can be interpreted in many different ways and can encompass a number of different elements, therefore, interviewees need to make their own judgement as to the exact meaning of flexible organisational structure. This is compared to the survey which utilised pre-validated measures of flexible organisational structure and was therefore able to achieve a greater level of accuracy in responses.

Although there is little empirical research in the KM literature regarding the impact of flexible organisational structure on KM initiatives, there is a realisation of the importance of this concept for the success of KM programmes (Davenport and Volpel, 2001) as the structure of the organisation needs to support the knowledge processes necessary for the survival of KM programmes.

From a management perspective, flexible organisational structure forms one of the greater challenges when dealing with the requirements of KM. This is because organisational structures are at times difficult to change and can be enforced on the organisation either for historical reasons or due to the sheer size of the organisation (Hislop, 2005) making it difficult to introduce change into these established set-ups.

Furthermore, one of the features of organisational structure is the existence of Communities of Practise (Lave and Wenger, 1991) which are sub-communities within the overall structure of the organisation that have a shared understanding, vocabulary and support mechanisms. Although these Communities of Practise can be useful in the transfer of knowledge, they make the management of the overall organisational structure more challenging as they each have their own ways of working that may not fit in with the organisations' own way of working.

#### **6.3.1.4 Effective IT**

As expected, the results showed that there is an association between effective IT and perceptions of organisational success for both organisations operating in a KM environment and organisations operating in a non-KM environment. This finding is in agreement with most of the literature especially the early KM literature which placed a lot of emphasis on the importance of having the correct IT systems in order to aid KM development (e.g. Malhotra, 2000, Moffett et al., 2003, Stoddart, 2001). Additionally, this result is also in agreement with findings from the interviews which identified effective IT systems as not only one of the main critical success factors for KM, but also as one of the achievements of KM for an organisation.

Thus, the availability of efficient and effective IT systems that support organisational processes is linked to perceptions of organisational success irrespective of whether or not KM exists in the organisation. However, research has yet to draw a causal link between effective IT and improved organisational performance (Johannessen et al., 2001) so this is purely an employee perception that has not been confirmed empirically. Nonetheless, this is still important in that in today's economy, effective IT systems are the cornerstone for effective organisations and therefore this element cannot be overlooked.

The IT issue presents a number of implications. The importance of effective IT systems for sharing explicit knowledge is a well known fact and it forms one of the main steps in starting a KM system. In the longer term though, consideration needs to be given to how effective IT can be used to transfer tacit knowledge as this is where the real competitive advantage can be achieved (Coakes, 2006). This is obviously a more demanding task as tacit knowledge is context dependent and difficult to codify and therefore does not lend itself easily to being collected into a central repository or being transferred using general IT systems (Hislop, 2005).

Furthermore, some research has shown that at times, use of IT can lead to lower levels of trust among employees and more opportunistic behaviours (Piccoli and Ives, 2003, Townsend et al., 1998). This would obviously lead to negative outcomes as management wish to encourage the development of trusting communities where knowledge can be shared freely.

Finally, Malhotra (2000) identified three myths that effective IT was initially believed to deliver to organisations. These were delivery of the right information to the right person at the right time; the ability to store intelligence and experience and the ability to distribute human intelligence. It is vital that management view effective IT as a way of facilitating more efficient organisational processes and not as the magic ingredient to improved organisational performance.

### **6.3.2 Factors which Impacted on Perceived Organisational Success in Organisations Operating in a KM Environment**

#### **6.3.2.1 Routine Knowledge Sharing**

The association between routine knowledge sharing and perceptions of organisational success is not surprising considering how much attention is given in the KM literature to the importance of routine knowledge sharing (e.g. Hislop, 2005, Huber, 2001, Nonaka, 1991, Nonaka and Takeuchi, 1995). However, routine knowledge sharing covers both the sharing of explicit as well as tacit knowledge and the results do not differentiate between the two forms of knowledge. Based on the results of the interviews, the majority of respondents were focusing on the importance of routinely sharing explicit knowledge through the use of suitable IT systems with little attention being focused on the more difficult task of routinely sharing tacit knowledge.

This result has a number of implications. Primarily, the results show that a KM environment increases awareness of the importance of routine knowledge sharing given that knowledge sharing in non-KM environments was not associated with perceptions of success. Thus establishing the correct knowledge sharing support systems that enables the routine sharing of explicit as well as tacit knowledge is critical to KM success (Hislop, 2005, Huber, 2001).

Furthermore, routine knowledge sharing can also be linked with a number of other factors such as availability of time (Nahapiet and Ghoshal, 1998) and knowledge-sharing based reward (Molm, 2001) and it is imperative that the different factors work together cohesively in order to make routine knowledge sharing as effortless as possible.

Therefore, it can be concluded that the introduction of KM into an organisation provides new challenges for management in that it not only changes the way knowledge itself is managed; but the way people work within the organisation (Hislop, 2005) thereby impacting on their perceptions of organisational success. A prime example of this is routine knowledge sharing which begins to have an impact on perceptions of organisational success only after the introduction of KM into the organisation.

#### **6.3.2.2 High Levels of Job Satisfaction**

Similar to routine knowledge sharing, KM increases the importance of high levels of job satisfaction. This is in line with the job satisfaction literature which argues that successful KM can only take place if employees are happy with their jobs and are therefore in a better position to build fruitful relationships with colleagues thereby allowing for effective knowledge sharing to take place (Heijden and Brinkman, 2001).

The association between high levels of job satisfaction and perceptions of organisational success in KM environments may be explained using Herzberg's Dual Factor Theory (1959) which argues that certain factors are necessary to ensure employees are not dissatisfied with their jobs (known as hygiene factors) yet motivating factors are the ones that enrich a person's job. Examples of motivating factors are recognition, the work itself and responsibility. Thus, it may be argued that the introduction of KM into an organisation provides elements of motivating factors thereby making job satisfaction more important for employees in a KM environment.

The results showed that there is no relationship between high levels of job satisfaction and perceptions of organisational success in organisations operating in a non-KM environment. This is an interesting finding indicating that employees in a non-KM environment have a different set of concerns than those operating in a KM environment.

#### **6.3.2.3 Knowledge-Sharing Based Reward**

The association between knowledge-sharing based rewards and perceived organisational success is in agreement with some of the KM literature which emphasises the importance of knowledge-sharing based reward for KM initiatives (e.g. Alavi and Leidner, 1999, Boist and Griffiths, 1999, Huber, 2001) arguing that employees need to feel that it is in their interest to give up their knowledge as the gains are perceived to be higher than the costs of parting with the knowledge.

It is important to note though that the KM literature is not in agreement about the impact of knowledge-sharing based reward on KM initiatives. Some researchers believe that introducing knowledge-sharing based reward can have negative effects on employees since rewards only facilitate temporary compliance to the desired behaviour (Kohn, 1993) and employees may also feel



that if a task has to be rewarded, it must mean that the task is not desirable thereby creating negative feelings (Kohn, 1993).

It may be concluded therefore that the introduction of KM into an organisation makes employees more aware of the importance of knowledge-sharing based reward for the success of the organisation. This is an important finding since it points to a number of important outcomes and presents a more challenging agenda for KM research. Primarily, the regularity and nature of knowledge-sharing based rewards given will have an impact on how the reward is received. This is a prime area for further research as the KM literature lacks empirical evidence in this field. Additionally, employees need to be rewarded for sharing both explicit as well as tacit knowledge. This can be quite a difficult task as it can prove hard to evaluate tacit knowledge. Furthermore, knowledge-sharing based rewards need to be inclusive so that they incorporate all the players in the sharing process – not just the knowledge giver, but also the knowledge taker (Bock et al., 2005).

### **6.3.3 Factors which Impacted on Perceived Organisational Success in Organisations Operating in a Non-KM Environment**

#### **6.3.3.1 Routine Innovation**

The results showed that there is an association between routine innovation and perceptions of organisational success for organisations operating in a non-KM environment but not for organisations operating in a KM environment. This is a very surprising result given the amount of literature that focuses on the importance of routine innovation for KM initiatives (e.g. Drucker, 1993, Garvey and Williamson, 2002, Sveiby, 1997) and the view that increased innovation is the main desired outcome from KM since it forms the basis for improved competitive advantage in today's knowledge economy (Sveiby, 1997).

The results indicate that employees working in organisations which operate a KM programme do not make the link between routine innovation and improved organisational success whereas employees in organisations unaware of the existence of a KM programme perceive routine innovation as improving organisational success. One explanation for this may be that employees in organisations where there is a KM programme may be focusing on other issues that they believe lead to higher levels of organisational success. These issues may include knowledge-friendly organisational culture and routine knowledge sharing efforts which may in the end lead to improved innovation but this is a more long term outcome. However, employees operating in non-KM environments realise the importance of routine innovation as directly linked to increased organisational success but there may be limited actual activities undertaken to improve levels of innovation within the organisation.

Interestingly, this result corroborates findings from the key informants from industry who did not view routine innovation as a critical success factor for KM programmes but they were all employed in organisations that had a KM programme so their efforts were concentrated on other areas, such as introducing the effective IT system and improving knowledge sharing, in order to develop the KM initiative.

This finding could indicate that excessive efforts are being focused on issues that are a means to an end, not the end itself – i.e. effort is being given to knowledge sharing and developing the right organisational culture, and not on increasing levels of innovation. However, it is important to note that KM is a young discipline (Moffett et al., 2003) and effort does need to be focused on these issues in order to achieve the desired outcomes in the long-term. Increased levels of innovation do not happen overnight and it is important that the KM programme is established in such a way that it supports routine innovation in the long run.

### **6.3.4 Factors which did not Impact on Perceived Organisational Success for Organisations Operating in a KM Environment and in a Non-KM Environment**

#### **6.3.4.1 Availability of Time**

The results showed that there was no association between availability of time and perceptions of organisational success for both groups of organisations.

This finding supports previous KM literature which has not drawn a direct link between availability of time and KM programmes. Only very few studies in the KM literature have attempted to study the relationship between availability of time and KM success and these have generally not been based on empirical research (e.g. Guptara, 1998). One explanation for the lack of research in this area is that availability of time is viewed as an integral part of many of the other issues involved in KM such as effective IT, knowledge-friendly culture, routine knowledge sharing and knowledge-sharing based reward. For example, routine knowledge sharing is dependent upon the availability of time in order for knowledge givers to part with their knowledge and for knowledge receivers to search for, locate and absorb the new knowledge (O'Dell et al., 1999, Zahra and George, 2000). Knowledge-friendly culture is also time dependent in that the growth of a certain culture within an organisation takes time and is based on regular social interaction among employees in order to develop trusting relationships and collaborations (Hofstede, 1981). Thus, availability of time is seen as part of the day-to-day working of the organisation and not as a separate entity (O'Dell et al., 1999). Since availability of time is embedded in other organisational issues and functions, it is these that are viewed to have an impact on perceptions of organisational success and not availability of time itself.

Interestingly though, this result is in contrast to findings from key informants in industry who identified availability of time as a critical factor for success of KM programmes. The interviewees felt that the availability of time or lack

thereof had a major effect on whether or not they could learn to use the new IT systems, could routinely share knowledge and could search for new knowledge. Therefore, availability of time was viewed as critical to the success of any KM initiative.

One reason for availability of time not being associated with perceptions of organisational success although it was identified as a critical success factor, is that availability of time may be viewed as a predecessor to the development of successful KM programmes but availability of time in itself does not lead to improved organisational performance.

Another interesting point coming out of this result is that availability of time is not associated with perceptions of organisational success for both organisations that have a KM programme and those that are unaware of a KM programme. This means that the existence of a KM programme does not increase employees' awareness of the importance of availability of time for overall organisational performance.

Although the results indicate that availability of time is not related to perceptions of organisational success, management still need to be aware of the importance of time as it was identified as a critical success factor for KM. The implications of this is that sufficient time needs to be allocated in order to allow other organisational functions that do have an impact on perceptions of organisational success, and that are dependent on time (such as routine knowledge sharing, effective IT etc) to develop and prosper.

### **6.3.5 Predictors of Success for Organisations Operating in a KM Environment**

The discussion of results regarding factors that impact on perceptions of organisational success has highlighted that in organisations operating a KM programme, seven out of the nine identified factors have an impact on

perceptions of organisational success. These factors are knowledge-friendly culture, hightrust climate, routine knowledge sharing, high levels of job satisfaction, flexible organisational structure, knowledge-sharing based reward and effective IT.

It is important to note at this stage that this combination of factors is different than the combinations of factors that have an impact on perceptions of organisational success for organisations operating in a non-KM environment. These differences will however be discussed in greater detail in section 6.3.7.

In order to fully address the second objective of this research, i.e. establish the impact of the critical success factors on perceptions of organisational success, it was important to identify which of the critical success factors had more of an impact on perceptions of organisational success than the others.

The results showed that the two factors of routine knowledge sharing and knowledge-sharing based reward had the greatest impact on perceptions of success in organisations operating a KM programme. These two factors alone accounted for 59% of the variance in perceptions of organisational success for this group.

This indicates that although the other five factors are significantly associated with perceptions of organisational success, the two factors that account for most of the change in perceptions of organisational success are routine knowledge sharing and knowledge-sharing based reward. Furthermore, the results show that even within the two main predictors of success, routine knowledge sharing makes almost double the contribution to the effect on perceptions of organisational success than reward.

These findings are interesting on a number of counts. Initially, the importance of routine knowledge sharing has been well established in the KM literature and these results corroborate previous findings (e.g. Hall and Goody, 2007, Hislop,

2005, Huber, 2001, Nonaka and Takeuchi, 1995) indicating that routine knowledge sharing is not only critical to the success of KM programmes per se, but routine knowledge sharing also has a large impact on how employees perceive organisational success.

Furthermore, these results have shown that in this particular sample, knowledge-sharing based reward is viewed as critical to the success of KM programmes and also has a large impact on perceptions of organisational success. The KM literature on reward is divided on whether knowledge-sharing based rewards elicit positive or negative behaviours (Alavi and Leidner, 2001, Hall, 2001, Kohn, 1993, Hall and Goody, 2007) and lead to the success of KM programmes. Therefore, these results support the KM literature which argues that knowledge-sharing based rewards are integral to the success of KM programmes (e.g. Boist and Griffiths, 1999, Davenport and Prusak, 1998, Molm, 2001).

The identification of routine knowledge sharing and knowledge-sharing based reward as the two key factors that influence employee perceptions of organisational success is vital information from a management perspective as it informs management practise and allows management to focus on the factors that have most impact on the success of KM programmes as well as those factors that have most impact on perceptions of success.

However, although the factors are treated independently in much of the KM literature, there is a great deal of inter-relatedness amongst these factors. For example, routine knowledge sharing is affected by the prevalent organisational culture. How rewards are perceived can also be influenced by the organisational culture. Knowledge sharing can be affected by the IT systems available that support the transfer of both tacit and explicit knowledge. Thus, although management needs to give due consideration to the factors of routine knowledge sharing and knowledge-sharing based reward as they account for a large proportion of perceptions of organisational success, it is important to note

that these factors are not stand-alone and are related to other organisational factors which also need to be considered.

### **6.3.6 Predictors of Success for Organisations Operating in a non-KM Environment**

For organisations operating in a non-KM environment, five factors were associated with perceptions of organisational success. These were knowledge-friendly culture, high-trust climate, flexible organisational structure, routine innovation and effective IT. This is a different combination of factors than the ones associated with success for organisations operating in a KM environment.

Furthermore, the main predictors of success for organisations operating in a non-KM environment were high-trust climate and effective IT. These two factors accounted for 40% of the variance in perceptions of success for this group of organisations. Both high-trust climate and effective IT made similar contributions to perceptions of organisational success in the model.

The most interesting aspect of these findings is that high-trust climate has been strongly associated with perceptions of organisational success. This seems to support the KM literature that draws no direct link between climate and KM success or perceptions of organisational success as these organisations are operating in a non-KM environment and have therefore yielded different results than organisations operating in a KM environment.

The identification of effective IT as a main predictor for success for organisations operating in a non-KM environment indicates that effective IT plays a more crucial role for this group of organisations than organisations which operate a KM environment. This supports previous KM literature (e.g. Malhotra, 2000, Stoddart, 2001) which argues that effective IT is only important in the initial set-up stages of a KM programme. Once a programme

has been set up, more challenging factors such as routine knowledge sharing come to the fore (Coakes, 2006, Moffett et al., 2003).

From a management perspective, this is a very important result as it indicates that although effective IT may be important for certain stages of a KM programme, it is not the main ingredient to the success of the programme. Management need to be aware that different stages of the programme will require different combinations of factors that impact on success and perceptions of organisational success.

### **6.3.7 Difference between Organisations in KM Environments and Organisations in Non-KM Environments**

The discussion above has highlighted some major differences between the factors that impact on organisations that operate in a KM environment and those that operate in non-KM environments. Initially, the combinations of factors that impact on perceptions of organisational success are different in organisations that operate a KM programme and those that operate in a non-KM environment. Routine knowledge sharing, high levels of job satisfaction and knowledge-sharing based reward are only associated with perceptions of organisational success in organisations that operate a KM programme. In organisations operating in a non-KM environment, routine innovation is associated with perceptions of organisational success. For both groups of organisations, knowledge-friendly culture, high-trust climate, flexible organisational structure and effective IT were associated with perceptions of success. For both groups of organisations availability of time was not associated with perceptions of organisational success.

Furthermore, the predictors of success for organisations operating a KM programme are routine knowledge sharing and knowledge-sharing based reward while in organisations in a non-KM environment, they are climate and IT.



This points to a general picture that the introduction of a KM programme not only has implications on how knowledge is managed within an organisation, but also introduces a more complex and more challenging management agenda where different factors impact on perceptions of success. It may be concluded that the introduction of a KM programme increases awareness and importance of different factors than in situations where a KM programme is not present or is unknown.

This is very important as it indicates that KM does not only impact on how actual knowledge is managed in an organisation but also impacts on how people operate within the organisation and on the things that influence their perceptions of success. This gives management an insight into the factors that employees perceive as important and also the challenges that are posed by the interactions of these factors in order to achieve success.

#### **6.4 Summary**

This chapter has discussed the findings from both the qualitative and quantitative results of this research and has linked findings to previous literature.

The findings indicate that KM success and perceptions of organisational success are associated with different factors depending on whether the organisation is operating in a KM environment or not. Furthermore, the portfolio of factors that is associated with KM success and perceptions of organisational success is different for the two groups of organisations. The results also showed that the predictors of success for the two groups of organisations is different.

The next chapter discusses the contributions to knowledge made as a result of this research, considers the limitations of the research and highlights avenues for future research.

## **Chapter 7**

# **Contribution to Knowledge, Limitations and Areas for Further Research**

## **7.1 Introduction**

This chapter discusses the contributions to knowledge made as a result of this research together with the implications of the findings for management practise. The chapter then explores the limitations of this study and concludes by identifying possible avenues for future research.

## **7.2 Contribution to Knowledge**

A number of contributions to KM theory are made through this research. Initially, it is important to note that most previous KM research is theoretical in nature or is primarily practitioner based case-studies. This research has however been empirical utilising a robust three-staged research design in order to gain a clearer picture of how KM operates in organisational settings. Thus, this research adds a broader dimension to current KM literature.

Furthermore, much of the KM literature discusses broad singular constructs in relation to KM. This research however brings together different constructs to build a unifying framework of clearly defined constructs and establish their impact on KM success as well as on perceptions of organisational success.

Some of the factors identified through this research as critical to KM success corroborate previous literature. Principally, a knowledge-friendly culture was identified as a critical factor for KM success. This finding is in agreement with previous KM literature (e.g. Davenport et al., 1998, Gold et al., 2001, McDermott and O'Dell, 2001, Van Den Hooff et al., 2003) which gives further credence to the importance of culture for KM success.

Routine knowledge sharing was also found to be critical to KM success which again confirms previous research in this area which has centred around the importance of routine knowledge sharing in order to enable successful KM (e.g. Hall, 2001, Huber, 2001).

Another factor confirmed in this study as critical to KM success was that of effective IT. This corroborates early KM literature which places a great deal of emphasis on the criticality of effective IT systems for the development of KM programmes (Nonaka et al., 1996a). This is however in disagreement with second generation KM literature which comes to the realisation that effective IT may be a predecessor to successful KM but that it cannot guarantee success (Coakes, 2006). The implications of this may be that the development of theory in the KM field is faster than the application of theory in actual management practise and that there may be a time lag between theoretical findings and their adoption in the organisational setting.

This research has found however, that availability of time is viewed by key players in industry as a critical success factor which is in contrast to previous KM literature where there have been very limited studies on the effects of the availability of time on KM success. This is an important contribution to KM theory as it adds a new dimension to the study of factors impacting on KM success.

Another important contribution made by this study is that there is a significant difference between perceptions of organisational success in organisations operating in a KM environment and those operating in a non-KM environment. This is an important contribution to KM theory as no previous studies have explored this comparison. This finding indicates that the introduction of KM into an organisation changes the way employees view organisational performance and therefore imposes a new and more complex management agenda.

Moreover, this research has established the combination of factors that impact on perceptions of organisational success is different in organisations operating in a KM environment compared with organisations operating in a non-KM environment. In both groups of organisations, knowledge-friendly culture,

high-trust climate, flexible organisational structure and effective IT were associated with perceptions of organisational success. However, in organisations operating in a KM environment, routine knowledge sharing, high levels of job satisfaction and knowledge-sharing based rewards were also associated with perceptions of organisational success. In organisations operating in a non-KM environment, the only added factor impacting on perceptions of organisational success was routine innovation.

The outcome of these findings is therefore, the development of a unifying framework that analyses the impact of clearly defined independent factors on whether or not they were perceived to be critical to KM success as well as whether or not they were associated with perceptions of organisational success. This, coupled with the comparison between organisations operating in a KM environment and those operating in a non-KM environment, allows for a more holistic view of KM to be taken and more insight into the factors that really impact on KM to be gleaned. This is a big development from previous KM studies which have tended to address the relationship between single factors and KM.

This research has also established that the two predictors of success for organisations operating in a KM environment are routine knowledge sharing and knowledge-sharing based reward whilst the two predictors of success for organisations operating in a non-KM environment are high-trust climate and effective IT. This is a significant contribution to both KM theory and practise. From a theoretical perspective, this finding corroborates previous studies in relation to the importance of routine knowledge sharing for KM success (e.g. Davenport et al., 1998, McDermott and O'Dell, 2001, Nonaka, 1991), and also confirms findings from some studies with regard to the importance of knowledge-sharing based reward for KM success (e.g. Boist and Griffiths, 1999, Hall, 2001). From a management perspective, this finding identifies the main factors that are perceived to be important in organisations aware of KM and thereby allows management to focus on these factors.

Contrary to much of the KM literature (Chou et al., 2005, Leonard and Sensiper, 1998, Nonaka and Takeuchi, 1995), this research has found that routine innovation was not viewed as a critical factor for success nor was it associated with perceptions of success for organisations operating in a KM environment. This is an important contribution as it indicates that the theory of the ultimate goal of KM initiatives being increased levels of innovation is not necessarily realised in practise.

Finally, because this research adopts a rigorous and robust research design, this allows for the research to be replicated in other industries allowing for cross-sector comparisons to be made. This is a unique contribution to knowledge in this field.

Thus, this research has made a number of important contributions to KM theory. Furthermore, as a result of this study, a number of implications for management practise are highlighted and these are discussed below.

### **7.3 Implications for Management Practise**

Understanding how KM can affect employee behaviour and ways of working is critical for management and has many implications for how KM programmes progress. The next section addresses the management implications arising out of the research and is structured around each of the nine factors that were identified as potentially having an effect on KM success.

#### **7.3.1 Knowledge-Friendly Culture**

Knowledge-friendly culture was identified as critical to KM success and also as impacting on perceptions of organisational success yet knowledge-friendly

culture is a broad concept that entails many elements. The challenge for management is to be able to identify the factors within a knowledge-friendly culture that impact on KM success. This is, to a large extent, dependent on the type of organisation (i.e. public or private sector) as the results from key informants in the industry have indicated that private sector organisations tend to believe that the organisational culture needs to adapt to the requirements of the KM programme whereas public sector organisations view KM programmes as having to fit into the existing culture. Management need to be able to distinguish whether the organisational culture can accept the introduction of KM or whether the culture needs to be changed to allow KM to fit into the organisation as well as which specific elements of a knowledge-friendly culture will impact on the KM programme.

### **7.3.2 High-Trust Climate**

Although high-trust climate was not viewed as critical to KM success, it was found to be associated with perceptions of organisational success. Therefore, management need to be able to differentiate between elements of culture and elements of climate. This is especially the case for large organisations which may harbour varying organisational climates purely due to their size and geographical dispersion.

### **7.3.3 Routine Knowledge Sharing**

Viewed as critical to KM success, as associated with perceptions of organisational success and as one of the main predictors of success for organisations operating in a KM environment, routine knowledge sharing is evidently a very important factor.

Two main management implications arise under routine knowledge sharing. The first is, given that knowledge sharing is not a natural human tendency, especially the sharing of tacit knowledge, management need to support the

culture and environment in which routine knowledge sharing is due to take place trying to make the sharing process as effortless as possible.

The second management implication is an appreciation of the complexity and difficulty of the sharing process, especially when sharing tacit knowledge, which is one of the ultimate goals of KM initiatives as this facilitates knowledge creation. This is because sharing tacit knowledge requires the development of trust and co-operation as well as involving personal interaction among employees. Therefore, the establishment of complex IT systems may be a useful beginning for KM programmes, but these on their own will not facilitate the sharing of tacit knowledge. Management need to consider ways in which trusting relationships can be encouraged to develop amongst the employees.

#### **7.3.4 High Levels of Job Satisfaction**

High levels of job satisfaction was associated with perceptions of organisational success although not viewed as critical to KM success. The implications for management of this finding is that higher levels of job satisfaction can lead to more positive perceptions of organisational success which will in turn impact on work performed.

Furthermore, high levels of job satisfaction may act as a predecessor to routine knowledge sharing as there is evidence in the literature that more satisfied employees are more likely to build trusting and fruitful relationships with colleagues which is a basic requirement for knowledge sharing. Therefore, high levels of job satisfaction cannot be ignored as an enabler of successful KM.

#### **7.3.5 Flexible Organisational Structure**

How employees are grouped in an organisation has a direct impact on opportunities for employee interaction and, ultimately, knowledge sharing.



This is a vital consideration for management especially in today's large organisations which tend to be geographically dispersed, as there is more of a need to ensure that the organisational structure allows sufficient interaction among the employees to facilitate knowledge transfer and exchange of ideas.

### **7.3.6 Routine Innovation**

Routine innovation was not identified as a critical factor for success nor was it associated with perceptions of organisational success in organisations operating in a KM environment. However, this in itself is important as it indicates to management that employees are not focusing on routine innovation as a way to improve organisational performance. Therefore, management need to ensure that innovation is encouraged and the importance of routine innovation for the success of KM in particular and the organisation in general, is highlighted to all employees.

### **7.3.7 Knowledge-Sharing Based Reward**

Although knowledge-sharing based reward was not identified as a critical factor for KM success, it was associated with perceptions of organisational success and identified as a main predictor of success. This highlights to management the importance of knowledge-sharing based rewards in the organisation.

There are a number of management implications when considering knowledge-sharing based reward. The first is that rewarding the sharing of tacit knowledge is a difficult task since it is impossible to quantify a person's bank of tacit knowledge and therefore difficult to reward an unknown quantity. Furthermore, the importance and relevance of any particular individual's tacit knowledge is perceived differently by the knowledge holder and the organisation. If the rewards offered for the knowledge are perceived to be not worth the knowledge on offer, this may have negative effects on the employees' attitudes to

knowledge sharing in general. Thus, management needs to ensure that rewards are seen to be equitable to the knowledge that is being given up.

Also, the nature of the industry in which the organisation operates together with the type of knowledge being shared will have implications on the type of reward expected (Huber, 2001).

Finally, rewards need to be inclusive and regular. Knowledge sharing is at times a long process involving both time and effort on the part of the knowledge holder as well as the knowledge receiver and rewards have to be offered at varying stages of the knowledge sharing process to ensure that all parties are rewarded (Lucas and Ogilvie, 2006). If rewards are only given to the knowledge holder, then there is no motivation for the knowledge receiver to use the knowledge on offer. Moreover, if the rewards are only provided at the end of the knowledge sharing process, this may be too far removed from the knowledge sharing process to act as a real motivator. Thus, management need to make sure that the process of awarding rewards is positive so as to facilitate increased knowledge sharing.

### **7.3.8 Effective Information Technology (IT)**

Effective IT was identified as a critical factor for success and was also associated with perceptions of organisational success, therefore effective IT plays a big role in how employees view organisational performance. From a management perspective, effective IT is an important enabler of knowledge transfer as well as knowledge collection yet having extensive IT systems does not necessarily lead to effective KM. Effective IT is a first step to ensuring that employees can get to the right information but it is important to note that information on IT systems needs regular updating to make it relevant. Also, the availability of information does not necessarily mean that it will be used.

Management needs to ensure that information is easily accessible to limit the time taken to search for the required information.

Furthermore, effective IT is useful in the transfer of explicit knowledge but less so in the transfer of tacit knowledge. Management need to be aware that a concentration of effort on transferring explicit knowledge should only be a first stage of KM development and over time, initiatives need to be introduced to enable the transfer of tacit knowledge.

### **7.3.9 Availability of Time**

Although availability of time was not found to be associated with perceptions of organisational success, it was identified as a critical factor for KM success. Time to share knowledge, time to search for knowledge and time to absorb knowledge may all impact on how successful a KM programme is. Furthermore, availability of time is associated with many of the other factors such as high levels of job satisfaction, knowledge-friendly culture, effective IT and routine innovation and therefore a careful consideration of the impact of the availability of time on how employees carry out tasks and interact with each other is useful in improving the chances of the KM programme achieving success.

## **7.4 Limitations of Study**

While this research was conducted through a robust and considered research design to minimise threats to the reliability and validity of the results, as with all research projects, some limitations still exist. These limitations are discussed below.

### **7.4.1 Research Context**

The context in which the study was set was limited to the Financial Services industry. This was necessary in order to keep the scope of work manageable, yet means that the findings are not generalisable to other industries and sectors.

### **7.4.2 KM vs Non-KM Dichotomy**

One of the central tenets of this study is the differentiation between organisations operating in a KM environment and those operating in a non-KM environment. This distinction allows for comparisons to be drawn between organisations in order to assess the impact of KM in the two groups of organisations. However, one of the limitations of adopting this distinction is that arguably all organisations, especially those operating in financial services, manage knowledge to a greater or lesser degree therefore making this distinction not plausible.

For the purposes of this study though, the distinction between KM and non-KM was based around awareness of the existence of formal KM efforts in an organisation, not its actual existence. This is based on the assumption that if employees are aware of formal KM efforts, their perceptions of KM success and overall organisational success will be different to employees unaware of the existence of KM efforts. Thus, this allows for comparisons to be drawn between the two groups of organisations and to assess the impact that the introduction of KM has on KM success and perceptions of organisational success. It is accepted though that this distinction is reliant on interpretation of awareness of KM versus existence of KM which may be troublesome and future research may adopt a different approach in developing a comparative base between organisations.

### **7.4.3 Construct Development**

One of the main objectives for this research was to identify the critical success factors for KM. This was achieved through a three-staged design allowing the identification of the factors from a thorough review of the literature and then refinement and confirmation of these factors through interviews and a large-scale survey. However, given that KM is a relatively new and expanding area, there is a growing body of research in the area and therefore continuous developments in the process of identifying the factors that impact on KM success. Thus, the nine factors identified as a result of this study emerged from the literature review conducted at the beginning of the research and although every effort was made to maintain the currency of the literature, a cut-off point for including new factors was reached once the exploratory stage was started. This is an obvious limitation of this research but is common to all large research projects of this nature.

Furthermore, although one of the contributions to knowledge emanating from this research is the bringing together of a large number of variables that impact on KM success, these variables are generally very broad and needed to be narrowed down in order to make the results useful. For example, culture is a very broad concept, thus through the review of literature and exploratory stage, this was refined to a particular element of culture which was a knowledge-friendly culture. One of the limitations of this refinement process is that other elements from each construct are eliminated. Future research may address this by measuring varying elements within each construct.

### **7.4.4 Data Collection**

The data collection conducted for this study was based on a three staged approach utilising a thorough review of literature, semi-structured interviews as well as self-completed questionnaires. Whilst there was control over the choice

of interviewees, there was no control over the completion of the questionnaires. All efforts were made to ensure that the questionnaires were mailed directly to the relevant people but this does not guarantee that the questionnaires were in fact completed by the intended person. This may introduce an element of bias in the findings but these are considered minimal and do not affect the overall findings.

Furthermore, wider qualitative data collection potentially through the use of focus groups post the large scale survey would have enabled exploration of the reasons why certain constructs were not considered critical to KM success or were not viewed as impacting on organisational success. Adopting this emergent approach would have enriched the final outcomes of the research and allowed for greater analysis of results. However, due to time constraints, it was not possible to do this but would be a useful consideration for future research.

#### **7.4.5 Instrument Development**

The survey instrument used in this research generally adapted previous validated questionnaires. This method was chosen in order to increase the reliability of the findings but because the actual statements in the survey instrument were adapted and not adopted wholly, this may slightly skew the meanings of the statements. Although a limitation of this research, this was considered more appropriate than adopting statements that were intended for another context.

Another limitation of adopting previously validated questionnaires is that they may suffer from lack of currency. This is especially the case with constructs such as IT where there is continuous development and the uses of IT are regularly changing. Although the decision was taken to adopt and adapt pre-validated survey tools to increase the reliability and validity of findings, there is a recognition that this has been at the expense of measuring the most current and up-to-date application of these constructs. Future research may overcome this limitation by developing new measurement tools.

#### **7.4.6 Contextualising Findings**

The findings from this research are related solely to the financial services industry. Although these findings are useful independently, there is potential to contextualise these findings through triangulation with external data sources in other industries and sectors. This would enable a greater appreciation of the key success factors for KM in financial services as compared to other areas. However, given that KM is such a new area, these studies were not available at the time of research and therefore pose an avenue for further research.

The findings from this research were based on a perceptual approach and whilst there is general agreement in the management sciences that perceptual based measures are acceptable, it is recognised that these views may not necessarily represent reality. This however is not considered a threat to the reliability of the research as the aim of the research was to explore the perceptions of key players in the field and not to establish the truth or reality.

#### **7.4.7 Geographical Scope**

Finally, the geographical scope of the research may be considered a limiting factor as the research was conducted in the UK in order to keep within manageable levels of scope, cost and access. Another reason for this geographical constraint was to limit the potential of moderating variables surrounding cultural differences from affecting the results of the research.

#### **7.5 Suggested Areas for Further Research**

This research has contributed to the extant literature on KM by identifying the critical factors for success for KM programmes as well the factors that impact on perceptions of organisational success. Although this research addressed many important questions in the KM field, it also raised a number of important

questions that need to be answered but which were outside the scope of this study. Thus a clear research agenda has arisen which entails both specific and wider research contexts to be identified.

Firstly, one of the central tenets of this research was the comparison between organisations operating in a KM environment and those operating in a non-KM environment. Although this distinction was useful for the purposes of the current study, future research could explore different comparisons such as organisations operating KM in different sectors or different countries. This would provide valuable results that can impact on KM practises in all industries.

For the purposes of this research, any attempt to formally manage knowledge, either in its tacit or explicit form was considered a KM programme and no detailed definition of the intricacies of the KM programme was sought as this was outside the scope of the study. Future research however, may consider the identification of the different elements of any KM programme in question as this may help in addressing the differences in perception of critical success factors.

Although a knowledge-friendly culture was identified as a critical factor for KM success and as a factor that is associated with perceptions of organisational success, specific elements of a knowledge-friendly culture vary and are open to different interpretations. Further research needs to establish the specific elements of a knowledge-friendly culture that impact on KM success and how these can be promoted in an organisation.

Given that research has established the importance of organisational climate for project success (Gray, 2001), it is surprising that there is limited research in the KM field regarding the effects of organisational climate on KM success. This is an avenue for further research which may have important implications for management practise. The need for this is compounded by findings from this



research which have established that a high-trust climate is associated with perceptions of organisational success, and considering that the terms climate and culture are sometimes used interchangeably, it is therefore important to differentiate between the two terms enabling better analysis of the impact of climate on success.

Much of the KM literature has been concerned with the impact that knowledge sharing can have on KM success and this research has established that routine knowledge sharing is a critical factor for KM success as well as being a predictor for success. However, the routine sharing of tacit knowledge is an area that requires further research as it is still unclear how organisations can promote the sharing of this type of knowledge. Future research may make the clear distinction between tacit knowledge and explicit knowledge as two separate constructs thereby enabling independent analysis of these different factors. In addition, research needs to establish how IT can most usefully help in transferring tacit knowledge.

Although this research has explored the importance of effective IT for KM success and perceptions of organisational success, IT is a continuously developing field and the uses of IT are changing the face of communication within organisations. Thus, avenues for further research may explore these changes utilising up-to-date survey tools that reflect the developments that have taken place in this field.

This research has also established that availability of time is viewed as a critical factor for KM success yet there is still limited research in the KM literature to support this view which this poses another area for further research.

Given the increasing size of organisations in today's economy coupled with the abundance of geographically disparate office locations and the increased use of technology, this has meant that there are fewer opportunities for employee interaction that facilitate the routine sharing of knowledge. Empirical research

needs to identify the most conducive organisational structure in order to overcome these problems and allow for the development of trusting relationships. Furthermore, more research needs to be concerned with the types of organisational structures that are best suited to organisations operating in KM environments and those operating in non-KM environments and whether or not organisational structures can in fact be influenced so that they are aligned to the needs of the KM programme.

Key literature in the KM field identifies routine innovation as the main desired outcome of KM programmes, yet this is not reflected in the findings from this study. Further empirical research needs to advance the understanding of how innovations can be supported and measured in an organisational setting.

Although this study has established that knowledge-sharing based rewards are associated with perceptions of organisational success, the KM literature is still undecided as to whether or not rewards act as motivators for improved KM and knowledge sharing. Thus, this forms a prime area for further empirical research in order to establish the impact of knowledge-sharing based rewards on KM efforts as well as the most effective reward systems and structures.

Moreover, this research has identified differences in perceptions of organisational success based on respondents' position in organisation, level of understanding of KM as well as the organisations' strategic focus. Thus, further research could explore the impact and extent of these differences on perceptions of organisational success. This could potentially be achieved through a wider qualitative research process probing respondent on their perceptions in order to glean rich data.

On a more general level, this research has identified the inter-relatedness of the factors involved in the research. This has been evident throughout the different stages of the research which has highlighted the complexities of the individual factors as well as the effects of the factors on each other. Further research in

this area would allow a better understanding of the cumulative impacts of these factors on KM success thereby greatly assisting management practise.

A specific interesting finding that emerges from the results of this research relates to the lack of a clear KM measurement system. This is a highly debated area in the KM literature but further empirical research into the measurement of KM would enrich the understanding of how KM can impact on organisational effectiveness.

Finally, this research was limited to the financial services industry and future work can replicate this study in other industries (both public and private sector) in order to achieve cross sector comparisons which would aid understanding of the characteristics of KM in different settings. Furthermore, triangulation of results with external data sources allows for realistic comparisons to be drawn which can be very useful for management practise.

## **7.6 Conclusion**

This chapter has detailed the main contributions to knowledge emerging as a result of this study. These contributions were discussed both specifically in relation to the research findings as well as more generally in relation to the research process. This allowed the research to be positioned within KM theory.

Following this, the implications of the research findings to management practise were explored. Details of the implications of each of the constructs were discussed in relation to its potential impact of management practise.

The chapter then turned to a discussion of the limitations of the study. As with any research, some limitations always exist and these were discussed and where possible justified. A clear agenda for future research emerged out of this study and this was discussed in the final section.

## References

- ADAMS, R., BESSANT, J. & PHELPS, R. (2006) Innovation Management Measurement: A Review. *International Journal of Management Reviews*, 8, 21-47.
- AHMED, P., LIM, K. & ZAIRI, M. (1999) Measurement Practise for Knowledge Management. *Journal of Workplace Learning*, 11, 304-311.
- AHN, J.-H. & CHANG, S.-G. (2004) Assessing the Contribution of Knowledge to Business Performance: The KP3 Methodology. *Decision Support Systems*, 36, 403-416.
- ALAVI, M. & LEIDNER, D. (1999) Knowledge Management Systems: Issues, Challenges and Benefits. *CAIS*, 1, 2-3.
- ALAVI, M. & LEIDNER, D. (2001) Review: Knowledge Management and Knowledge Management Systems: Conceptual Foundations and Research Issues: *MIS Quarterly*, 25, 107-136.
- ANDRIESSON, D. (2005) Implementing the KPMG Value Explorer. *Journal of Intellectual Capital*, 6, 474-488.
- ARMISTEAD, C. (1999) Knowledge Management and Process Performance. *Journal of Knowledge Management*, 3, 143-157.
- ARMISTEAD, C. & MEAKINS, M. (2002) A Framework for Practising Knowledge Management. *Long Range Planning*, 35, 49-71.
- ARORA, A. (2002) Implementing Knowledge Management - A Balanced Score Card Approach. *Journal of Knowledge Management*, 6, 240-249.
- ATKINSON, A., WATERHOUSE, J. & WELLS, R. (1997) A Stakeholder Approach to Strategic Performance Measurement. *Sloan Management Review*, 38, 25-37.
- BAILEY, D. M. (1991) *Research for the health professional: A practical guide*, Philadelphia, Davis.
- BENNET, R. (2001) "Ba" as a Determinant of Salesforce Effectiveness: An Empirical Assessment of the Applicability of the Nonaka-Takeuchi Model to the Management of the Selling Function. *Marketing Intelligence and Planning*, 19, 188-199.
- BHASKAR, R. (1975) *A Realist Theory of Science*, Leeds, Leeds Books.
- BHASKAR, R. (1989) *Reclaiming Reality: A Critical Introduction to Contemporary Philosophy*, London, Verso.

- BIRKENSHAW, J., NOBEL, R. & RIDDERSTALE, J. (2002) Knowledge as a Contingency Variable: Do the Characteristics of Knowledge Predict Organisational Structure? *Organization Science*, 13, 274-289.
- BLAU, P. M. & SCOTT, W. R. (1962) *Formal Organisations: A Comparative Approach*, San Francisco, Chandler Publishing Company.
- BLUMENTRITT, R. & JOHNSTON, R. (1999) Towards a Knowledge Management Strategy. *Technology Analysis and Strategic Management*, 11, 287-300.
- BOCK, G. W. & KIM, Y.-G. (2002) Breaking the Myths of Rewards: An Exploratory Study of Attitudes about Knowledge Sharing. *Information Resources Management Journal*, 14-21.
- BOCK, G. W., ZMUD, R. W., KIM, Y. G. & LEE, J. N. (2005) Behavioural Intention Formation in Knowledge Sharing: Examining the Roles of Extrinsic Motivators, Social-psychological Forces and Organizational Climate. *MIS Quarterly*, 29, 1-32.
- BOIST, M. & GRIFFITHS, D. (1999) Possession is Nine Tenths of the Law: Managing a Firm's Knowledge Base in a Regime of Weak Appropriability. *International Journal of Technology Management*, 17, 662-676.
- BONTIS, N., DRAGONETTY, N. C., JACOBSEN, K. & ROOS, G. (1999) The Knowledge Toolbox: A Review of the Tools Available to Measure and Manage Intangible Resources. *European Management Journal*, 17, 391-402.
- BOYNTON, A. & ZMUD, R. (1984) An Assessment of Critical Success Factors. *Sloan Management Review*, Summer, 17-27.
- BROOKING, A. (1996) *Intellectual Capital: Core Assets for the Third Millenium Enterprise*, London, Thompson Business Press.
- BROWN, J. & DUIGUID, P. (1991) Organization Learning and Communities of Practise: Towards a Unified View of Working, Learning and Innovation. *Organization Science*, 2, 40-57.
- BRYMAN, A. (1995) *Quantity and Quality in Social Research*, London, Routledge.
- BRYMAN, A. & BELL, E. (2003) *Business Research Methods*, Oxford, Oxford University Press.
- BURKE, W. W. & LITWIN, G. H. (1992) A Causal Model of Organisational Performance and Change. *Journal of Management*, 18, 523-545.

- BURREL, G. & MORGAN, G. (1979) *Sociological Paradigms and Organisational Analysis*, London, Heinemann.
- CARTER, C. & SCARBOROUGH, H. (2001) Towards a Second Generation of KM? The People Management Challenge. *Education & Training*, 43, 215-224.
- CHASE, R. (1997) The Knowledge-based Organisation: An International Survey. *The Journal of Knowledge Management*, 1, 38-49.
- CHAUVEL, D. & DESPRES, C. (2002) A Review of Survey Research in Knowledge Management. *Journal of Knowledge Management*, 6, 207-223.
- CHOU, T., CHANG, P., TSAI, C. & CHENG, Y. (2005) Internal Learning Climate, Knowledge Management Process and Perceived Knowledge Management Satisfaction. *Journal of Information Science*, 31, 283-296.
- CHOURIDES, P., LONGBOTTOM, D. & MURPHY, W. (2003) Excellence in Knowledge Management: An Empirical Study to Identify Critical Factors and Performance Measures. *Measuring Business Excellence*, 7, 29-45.
- CHURCHILL, G. (1979) A Paradigm for Developing Better Measures of Marketing Constructs. *Journal of Marketing Research*, 16, 64-73.
- COAKES, E. (2006) Storing and Sharing Knowledge. *The Learning Organisation*, 13, 579-593.
- COHEN, W. & LEVINTHAL, D. (1990) Absorptive Capacity: A New Perspective on Learning and Innovation. *Administrative Science Quarterly*, 35, 128-152.
- CONSTANT, D., KIESLER, S. & SPROULL, L. (1994) What's Mine Is Ours, Or Is It? A Study Of Attitudes About Information Sharing. *Information Systems Research*, 5, 400-421.
- CONVERSE, J. M. & PRESSER, S. (Eds.) (1986) *Survey Questions: Handcrafting the Standardized Questionnaire*, Beverley Hills, Sage Publications.
- COOKE-DAVIES, T. (2002) The 'Real' Success Factors in Projects. *International Journal of Project Management*, 20, 185-190.
- COOLICAN, H. (1994a) *Research Methods and Statistics in Psychology*, London, Hodder & Stoughton.
- COOLICAN, H. (1994b) *Research Methods and Statistics in Psychology*, Hodder & Stoughton.

- COPE, M. (2000) Do We Really Need to Measure Knowledge Management? *Knowledge Management Review*.
- CRESWELL, J. & PLANO CLARK, V. (2007) *Mixed Methods Research*, London, Sage.
- DANIEL, R. D. (1961) Management Information Crisis. *Harvard Business Review*, 35, 111-121.
- DAVENPORT, T., DE LONG, D. W. & BEERS, M. C. (1998) Successful Knowledge Management Projects. *Sloan Management Review*, 39, 43-58.
- DAVENPORT, T. & PRUSAK, L. (1998) *Working Knowledge: How Organisations Manage What They Know*, Boston, Harvard Business School Press.
- DAVENPORT, T. & VOLPEL, S. (2001) The Rise of Knowledge Towards Attention Management. *Journal of Knowledge Management*, 5, 212-222.
- DE FURIA, G. L. (1997) *Organisational Trust Surveys*, San Fransisco, Wiley.
- DEAL, T. E. (1986) Deeper Culture: Mucking, Muddling and Metaphors. *Training and Development Journal*, 32.
- DEAL, T. E. & KENNEDY, A. A. (1982) *Corporate Cultures*, Reading, MA, Addison-Wesley.
- DENZIN, N. (1988) *The Research Act: A Theoretical Introduction to Sociological Methods*, Chicago, Aldine.
- DESPRES, C. & DANIELE, C. (1999) Knowledge Management(s). *Journal of Knowledge Management*, 3, 110-123.
- DESS, G. & ROBINSON, R. (1984) Measuring Organizational Performance in the Absence of Objective Measures: The Case of the Privately-Held Firm and Conglomerate Business Unit. *Strategic Management Journal*, 5, 265-273.
- DIAMANTOPOULOS, A. & SCHLEGELMILCH, B. (1997) *Taking the Fear out of Data Analysis*, London, The Dryden Press.
- DRUCKER, P. (1993) *Post Capitalist Society*, Oxford, Butterworth-Heinemann.
- DTI (1998) An Audience with Innovation: Innovation in Management. IN INDUSTRY, D. O. T. A. (Ed.).

- EASTERBY-SMITH, M., CROSSAN, M. & NICOLINI, D. (1999) Organizational Learning: Debates Past, Present And Future *Journal of Management Studies*, 37, 783-796.
- EASTERBY-SMITH, M., THORPE, R. & LOWE, A. (2002) *Management Research: An Introduction*, London, Sage.
- EASTERBY-SMITH, M., THORPE, R. & LOWE, A. (2004) *Management Research - An Introduction*, London, Sage.
- EDVINSSON, L. & MALONE, M. S. (1997) *Intellectual Capital: The Proven Way to Establish your Company's Real Value by Measuring its Hidden Values*, London, Piatkus.
- ERNST & YOUNG (1997) *Innovation in Action - Selling Knowledge on the Net: Perspectives on Business Innovation*.
- FERATT, T. W. & SHORT, L. E. (1988) Are Information Systems People Different: An Investigation of How they are and Should be Managed. *MIS Quarterly*, 12, 427-443.
- FIELD, A. (2005) *Discovering Statistics Using SPSS*, London, SAGE Publications Ltd.
- FIELD, M. & KELLER, L. (1998) *Project Management*, Milton Keynes, International Thompson Business Press.
- FINK, A. (1998) *How to Conduct Surveys: A Step-By-Step Guide*, London, Sage Publications.
- FISHBEIN, M. & AJZEN, I. (1975) *Beliefs, Attitudes, Intention and Behaviour: An Introduction to Theory and Research*, Philippines, Addison-Wesley Publishing Company.
- FISHER, C. (2004) *Researching and Writing a Dissertation for Business Students*, Harlow, England, FT Prentice Hall.
- FOREHAND, G. & VON GILMER, B. (1964) Environmental Variations in Studies of Organisational Behaviour. *Psychological Bulletin*, 62, 361-382.
- FRAZER, L. & LAWLEY, M. (2000) *Questionnaire Design and Administration*, Sydney, John Wiley & Sons Australia, Ltd.
- FURNHAM, A. & GUNTER, B. (1993) *Corporate Assessment*, London, Routledge.
- GALLIE, D., WHITE, M., CHENG, Y. & TOMLINSON, M. (1998) *Restructuring the Employment Relationship*, Oxford, Clarendon Press.



- GARVEY, B. & WILLIAMSON, B. (2002) *Beyond Knowledge Management. Dialogue, Creativity and the Corporate Curriculum*, Harlow, England, Pearson Education Ltd.
- GEORGE, J. M. & JONES, G. R. (1996) *Understanding and Managing Organizational Behavior*, Reading, MA, Addison-Wesley.
- GLOET, M. & BERREL, M. (2003) The Dual Paradigm Nature of Knowledge Management: Implications for Achieving Quality Outcomes in Human Resource Management. *Journal of Knowledge Management*, 7, 78-89.
- GOFFEE, R. & JONES, G. (1998) *The Character of a Corporation: How Your Company's Culture Can Make or Break Your Business*, London, Harper Business.
- GOH, S. (2002) Managing Effective Knowledge Transfer: An Integrative Framework and Some Practise Implications. *Journal of Knowledge Management*, 6, 23-30.
- ...
- GOLD, A., H, MALHOTRA, A. & SEGARS, A. (2001) Knowledge Management: An Organizational Capabilities Perspective. *Journal of Management Information Systems*, 18, 185-214.
- GOOIJER, J. D. (2000) Designing A Knowledge Management Performance Framework. *Journal of Knowledge Management*, 4, 303-310.
- GRANT, R. M. (1996) Toward a Knowledge-based Theory of the Firm. *Strategic Management Journal*, 17, 109-122.
- GRAY, R. J. (2001) Organisational Climate and Project Success. *International Journal of Project Management*, 103-109.
- GUPTARA, P. (1998) Relationship Marketing. *Annual Conference of the Chartered Institute of Bankers*. Cambridge, UK.
- HACKMAN, J. R. & OLDFHAM, G. R. (1975) Development of the Job Diagnostic Survey. *Journal of Applied Psychology*, 60, 159-170.
- HAIR, J. F., ANDERSON, R. E., TATHAM, R. L. & BLACK, W. C. (1987) *Multivariate Data Analysis* New York, Macmillan Publishing Company.
- HALL, H. (2001) Social Exchange for Knowledge Exchange. *Managing Knowledge: Conversations & Critiques*. University of Leicester Management Centre.
- HALL, H. & GOODY, M. (2007) KM, Culture and Compromise: Interventions to Promote Knowledge Sharing Supported by Technology in Corporate Environments. *Journal of Information Science*, 33, 181-188.

- HANDY, C. (1995) *Beyond Certainty: The Changing Worlds of Organizations*, London, Hutchinson.
- HANSEN, M. (1999) The Search-transfer Problem: The Role of Weak Ties in Sharing Knowledge Across Organization Subunits. *Administrative Science Quarterly*, 82-111.
- HEIJDEN, B. & BRINKMAN, J., G (2001) Stimulating Lifelong Professional Growth by Guiding Job Characteristics. *Human Resource Development International*, 4, 173-198.
- HENDRIKS, P. H. (1999) The Organisational Impact of Knowledge-based Systems: A Knowledge Perspective. *Knowledge-Based Systems*, 12, 159-169.
- HERZBERG, F., MAUSNER, B. & SNYDERMAN, B. B. (1959) *The Motivation to Work*, New York, John Wiley & Sons.
- HISLOP, D. (2005) *Knowledge Management in Organisations*, Oxford, Oxford University Press.
- HOFSTEDE, G. (1980) *Culture's Consequences*, London, Sage.
- HOFSTEDE, G. (1981) Culture & Organizations. *International Studies of Management & Organizations*, 10, 15-41.
- HOLSAPPLE, C. W. & JOSHI, K. D. (2000) An Investigation of Factors that Influence the Management of Knowledge in Organizations. *The Journal of Strategic Information Systems*, 9, 235-261.
- HOLSAPPLE, C. W. & JOSHI, K. D. (2002) Knowledge Management: A Threefold Framework. *The Information Society*, 18, 47-64.
- HOLTSHOUSE, D. (1998) Knowledge Research Issues. *California Management Review*, 40, 277 - 280.
- HOMBURG, V. & MEIJER, A. (2001) Would Anyone Like to Share his Knowledge? *34th Annual Hawaii International Conference on System Science*. Maui, Hawaii.
- HOUSEL, T. & BELL, A. (2001) *Measuring and Managing Knowledge*, Singapore, McGraw-Hill Higher Education.
- HUBER, G. P. (2001) Transfer of Knowledge in Knowledge Management Systems: Unexplored Issues and Suggested Studies. *European Journal of Information Systems*, 10, 72-79.
- IRONSON, G. H., SMITH, P. C., BRANNICK, M. T. & GIBSON, K. B. (1989) Construction of a Job in General Scale: A Comparison of Global,

Composite and Specific Measures *Journal of Applied Psychology*, 74, 193-200.

JACOBSON, A. & PRUSAK, L. (2006) The Cost of Knowledge. *Harvard Business Review*, 84, 34-44.

JANKOWICZ, A. D. (2000) *Business Research Projects*, London, Business Press.

JANKOWICZ, A. D. (2005) *Business Research Projects*, London, Thompson learning.

JARVENPAA, S. L. & LEIDNER, D. (1999) Communication and Trust in Global Virtual Teams. *Organization Science*, 10, 791-815.

JENNEX, M. & OLFMAN, L. (2003) A KM Success Model: An Extension of Delone Maclean's IS Success Model. *Ninth Americas Conference on Information Systems*. Florida, USA.

JOHANNESSEN, J., OLAISEN, J. & OLSEN, B. (2001) Mismanagement of Tacit Knowledge: The Importance of Tacit Knowledge, the Danger of Information Technology and What to do About it. *International Journal of Information Management*, 21, 3-20.

JOHANNESSEN, J., OLSEN, B. & OLAISEN, J. (1999) Aspects of Innovation Theory Based on Knowledge Management. *International Journal of Information Management*, 19, 121-139.

JONES, N., HERSCHEL, R. & MOESEL, D. (2003) Using "Knowledge Champions" to Facilitate Knowledge Management. *Journal of Knowledge Management*, 7, 49-63.

JONES, R. (2003) Measuring the Benefits of Knowledge Management at the Financial Services Authority: A Case Study. *Journal of Information Science*, 29, 475-487.

JONES, R. A., JIMMIESON, N. L. & GRIFFITHS, A. (2005) The Impact of Organizational Culture and Reshaping Capabilities on Change Implementation Success: The Mediating Role of Readiness for Change. *Journal of Management Studies*, 42, 361-386.

JORDAN, P. W. (1988) *An introduction to usability*, London, Taylor & Francis.

KAKABADSE, N., KAKABADSE, A. & KOUZMIN, A. (2003) Reviewing the Knowledge Management Literature: Towards a Taxonomy. *Journal of Knowledge Management*, 7, 75-91.

KANGIS, P. & WILLIAMS, D. G. (2000) Organisational Climate and Corporate Performance: An Empirical Investigation. *Management Decision*, 38, 531-540.

- KANKANHALLI, A., TAN, B. & WEI, K. (2001) Seeing Knowledge in Electronic Knowledge Repositories: An Exploratory Study. *Twenty-Second International Conference in Information Systems*. New Orleans, Canada.
- KANTER, R. M. (1984) Innovation: Our Only Hope for Times Ahead? *Sloan Management Review*, 25, 51-55.
- KANTER, R. M. (1996) When a Thousand Flowers Bloom: Structural, Collective and Social Conditions for Innovation in Organizations. IN MYERS, P. (Ed.) *Knowledge Management and Organizational Design*. Boston, Butterworth-Heinemann.
- KAPLAN, R. S. & NORTON, D. P. (1992) The Balanced Scorecard - Measures that Drive Performance. *Harvard Business Review*, 70, 71-79.
- KAPLAN, R. S. & NORTON, D. P. (1996) *The Balanced Scorecard - Translating Strategy into Action*, Boston, MA, Harvard Business School Press.
- KAPLAN, R. S. & NORTON, D. P. (2000) "Having Trouble with your Strategy? Then Map it". *Harvard Business Review*, 78, 167-76.
- KING, A. & ZEITHAML, C. (2003) Measuring Organisational Knowledge: A Conceptual and Methodological Framework *Strategic Management Journal*, 24, 763-772.
- KLUGE, J., STEIN, W. & LICHT, T. (2001) *Knowledge Unplugged: The McKinsey Survey on Knowledge Management*, Basingstoke, Palgrave.
- KOHN, A. (1993) Why Incentive Plans Cannot Work. *Harvard Business Review*, Sept-Oct, 54-63.
- KPMG (2000) Knowledge Management Research Report. KPMG Consulting.
- KRIPPENDORFF, K. (2004) *Content Analysis: An Introduction to Its Methodology*, London, Sage.
- KUMAR, R. (2005) *Research Methodology*, London, SAGE Publications Ltd.
- LAVE, J. & WENGER, E. (1991) *Situated Learning, Legitimate Peripheral Participation*, Cambridge, Cambridge University Press.
- LEIDECKER, J. & BRUNO, A. (1984) Identifying and Using Critical Success Factors. *Long Range Planning*, 17, 23-32.
- LEONARD-BARTON, D. (1995) *Wellsprings of Knowledge: Building and Sustaining Sources of Innovation*, Mass., Harvard Business School Press.

- LEONARD, D. & SENSIPER, S. (1998) The Role of Tacit Knowledge in Group Innovation. *California Management Review*, 40, 112-132.
- LEV, B. (2001) *Intangibles: Management, Measurement and Reporting*, Washington, DC, The Brookings Institution.
- LEWIN, K. (1951) *Field Theory in Social Science*, New York, NY, Harper and Row.
- LIEBOWITZ, J. & SUEN, C. Y. (2000) Developing Knowledge Management Metrics for Measuring Intellectual Capital. *Journal of Intellectual Capital*, 1, 54-67.
- LITWIN, G. H. & STRINGER, R. A. (1968) *Motivation and Organisational Climate*, Boston, Harvard Business School Press.
- LOUIS, M. R. (1983) Organisations as Culture-bearing Milieux. *Organisational Symbolism*. Greenwich, CT, JAI Press.
- LUCAS, L. M. & OGILVIE, D. (2006) Things are not Always what they Seem. How Reputations, Culture and Incentives Influence Knowledge Transfer. *The Learning Organisation*, 13, 7-24.
- MAK, B. L. & SOCKEL, H. (2001) A Confirmatory Factor Analysis Of IS Employee Motivation and Retention. *Information and Management*, 38, 265-276.
- MALHOTRA, Y. (2000) Knowledge Management for E-Business Performance: Advancing Information Strategy to "Internet Time". *Information Strategy, The Executive's Journal*, 16, 5-16.
- MALHOTRA, Y. (2002) *Handbook on Knowledge Management*, Heidelberg.
- MALTZ, A., SHENHAR, A. & REILLY, R. (2003) Beyond the Balanced Scorecard: Refining the Search for Organizational Success Measures. *Long Range Planning*, 36, 187-204.
- MARKUS, L. & ROBEY, D. (1988) Information Technology and Organizational Change: Causal Structure in Theory and Research. *Management Science*, 34, 583-598.
- MARR, B., SCHIUMA, G. & NEELY, A. (2004) Intellectual Capital - Defining Key Performance Indicators for Organizational Knowledge Assets. *Business Process Management Journal*, 10, 551-569.
- MARTENSSON, M. (2000) A Critical Review of Knowledge Management as a Management Tool. *Journal of Knowledge Management*, 4, 204-216.
- MASLOW, A. H. (1970) *Motivation and Personality*, New York, Harper & Row.

- MAYLOR, H. (2005) *Project Management*, London, Pitman.
- MCADAM, R. & REID, R. (2000a) A Comparison of Public and Private Sector Perceptions and Use of Knowledge Management. *Journal of European Industrial Training*, 24, 317-329.
- MCADAM, R. & REID, R. (2000b) A Comparison of Public and Private Sector Use and Perceptions of Knowledge Management. *Journal of European Industrial Training*, 24, 317-329.
- MCDERMOTT, R. (1999) Why Information Technology Inspired But Cannot Deliver Knowledge Management. *California Management Review*, 41, 103-117.
- MCDERMOTT, R. & O'DELL, C. (2001) Overcoming Cultural Barriers to Sharing Knowledge. *Journal of Knowledge Management*, 5, 76-85.
- MCKENZIE, J. & VAN WINKELLEN, C. (2004) *Understanding the Knowledge Organization*, London, Thomson.
- MILES, J. & SHEVLIN, M. (2001) *Applying Regression and Correlation: A Guide for Students and Researchers*, London, Sage.
- MOFFETT, S., MCADAM, R. & PARKINSON, S. (2003) Technology and People Factors in Knowledge Management: An Empirical Analysis. *Total Quality Management*, 14, 215-224.
- MOLM, L. D. (2001) Theories of Social Exchange and Exchange Networks. *Handbook of Social Theory*. London, Sage.
- MORAN, E. T. & VOLKWEIN, J. F. (1992) The cultural Approach to the Formation of Organisational Climate. *Human Relations*, 45, 19-47.
- MORGAN, G. & SMIRCICH, L. (1980) The Case for Qualitative Research. *Academy of Management Review*, 5, 491-500.
- MOURITSEN, J., THORSGAARD LARSEN, H. & BUKH, P. (2005) Dealing with the Knowledge Economy: Intellectual Capital Versus Balanced Scorecard. *Journal of Intellectual Capital*, 6, 8-27.
- MOUZUGHY, Y., WRIGHT, G., BRYDE, D. & THORNE, A. (2005) Reaping the Fruits of Knowledge Management: Can they be Tasted? *Electronic Journal of Knowledge Culture and Change*.
- MOWDAY, R. T., PORTER, L. W. & STEERS, R. M. (1982) *Employee - Organisation Linkages: The Psychology Of Commitment, Absenteeism And Turnover*, New York, Academic Press.
- MYERS, P. (Ed.) (1996) *Knowledge Management and Organizational Design*, Boston, Butterworth-Heinemann.

- NAHAPIET, J. & GHOSHAL, S. (1998) Social Capital, Intellectual Capital and the Organisational Advantage. *Academy of Management Review*, 23, 242-266.
- NEELY, A., GREGORY, M. & PLATTS, K. (1995) Performance Measurement Systems Design - A Literature Review and Research Agenda. *International Journal of Operations and Production Management*, 15, 80-116.
- NEWMAN, W. L. (1994) *Social Research Methods*, Boston, Allyn & Bacon.
- NONAKA, I. (1991) The Knowledge Creating Company. *Harvard Business Review*, 96-104.
- NONAKA, I. & TAKEUCHI, H. (1995) *The knowledge Creating Company: How Japanese Companies Create the Dynamics of Innovation*, Oxford, Oxford University Press.
- NONAKA, I., TAKEUCHI, H. & UMEMOTO, K. (1996a) A Theory of Organizational Knowledge Creation. *International Journal of Technology Management*, 11, 833-845.
- NONAKA, I., UMEMOTO, K. & SENOO, D. (1996b) From Information Processing to Knowledge Creation: A Paradigm Shift in Business Management. *Technology in Science*, 18, 203-218.
- NUNNALLY, J. C. (1978) *Psychometric theory*, New York, McGraw-Hill.
- O'DELL, C., WIIG, K. & ODEM, P. (1999) Benchmarking Unveils Emerging Knowledge Management Strategies. *Benchmarking: An International Journal*, 6, 202-211.
- OECD (2004) *Measuring Knowledge Management in the Business Sector*, Paris, OECD Publication Services.
- ONG, C.-S. & LAI, J.-Y. (2007) Measuring User Satisfaction with Knowledge Management Systems: Scale Development, Purification and Initial Tests. *Computers in Human Behaviour*, 23, 1329-1346.
- OPPENHEIM, A. N. (1992) *Questionnaire Design, Interviewing and Attitude Measurement*, London, Pinter Publishers.
- PATTON, M. Q. (2002) *Qualitative Research and Evaluation Methods*, London, Sage.
- PAYNE, R. (1990) Madness in Our Method. A Comment on Jackofsky and Slocum's Paper. A Longitudinal Study of Climates. *Journal of Organizational Behaviour*, 11, 77-80.

- PEREZ, R. R. & HYNES, M. D. (1999) Assessing Knowledge Management Initiatives. *Knowledge Management Review*.
- PETERS, T. J. (1978) Symbols, Patterns and Settings. *Organisational Dynamics*, 9, 3-23.
- PETTIGREW, A. M. (1979) On Studying Organisational Cultures. *Administrative Science Quarterly*, 570-581.
- PETTIGREW, A. M. (1990) Studying Strategic Choice & Strategic Change. *Organization Studies*, 11, 6-11.
- PICCOLI, G. & IVES, B. (2003) Trust and Unintended Effects of Behavior Control in Virtual Teams. *MIS Quarterly*, 27, 365-395.
- POLANYI, M. (1966) *The Tacit Dimension*, London, Routledge & Kegan Paul.
- POWELL, T. C. & DENT-MICALLEF, A. (1997) Information Technology as Competitive Advantage: The Role of Human, Business and Technology Resources. *Strategic Management Journal*, 18, 375-405.
- PRUSAK, L. (1996) The Knowledge Advantage. *Strategy and Leadership*, 24, 6-8.
- RASHID, Z. (2004) The Influence of Organisational Culture on Attitudes Toward Organisational Change. *The Leadership & Organisation Development Journal*, 25, 161-179.
- REMENYI, D., WILLIAMS, B., MONEY, A. & SWARTZ, E. (1998) *Doing Research in Business and Management: An Introduction to Process and Method*, London, Sage.
- RESEARCH, A. M. R. (1999) Survey on Knowledge Management. *Management Review*, 20, 20-27.
- RIBIERE, V. (2001) Assessing Knowledge Management Initiative Successes as a Function of Organizational Culture. *The School of Engineering and Applied Science*. Washington DC, The George Washington University.
- RICHERT, A. (1999) Lessons from a major Cultural Change Workshop. *Industrial & Commercial Training*, 31, 267-271.
- ROCKART, J. F. (1979) Chief Executives Define their Own Data Needs. *Harvard Business Review*, 57, 81-92.
- ROGERS, E. M. (1983) *Diffusion of Innovations*, NY, The Free Press.
- ROOS, G. & ROOS, J. (1997) Measuring your Company's Intellectual Performance. *Long Range Planning*, 30.



- RUBENSTEIN-MONTANO, B., LIEBOWITZ, J., BUCHWALTER, J., MCCAWE, D., NEWMAN, B. & REBECK, K. (2001) A Systems Thinking Framework For Knowledge Management. *Decision Support Systems*, 31, 5-16.
- RUGGLES, R. (1998) The State of Notion; Knowledge Management in Practise. *California Management Review*, 40, 80-89.
- SAUNDERS, M., LEWIS, P. & THORNHILL, A. (2003) *Research Methods for Business Students*, Harlow, England, FT Prentice Hall.
- SCARBOROUGH, H. & CARTER, C. (2000) *Investigating Knowledge Management*, CIPD.
- SCHEIN, E. (1986) What you Need to Know About Organizational Culture. *Training and Development Journal*, 30-33.
- SCHERTZER, C. B. & KERMAN, J. B. (1985) More on the Robustness of Response Scales. *Journal of Marketing Research Society*, 8, 261-282.
- SCHNAKE, M. E. (1983) An Empirical Assessment of the Effects of Affective Response in the Measurement of Organizational Climate. *Personnel Psychology*, 791-807.
- SCHNEIDER, B., BRIEF, A. & GUZZO, R. (1996) Creating a Climate and Culture for Sustainable Organisational Change. *Organisational Dynamics*.
- SCHOLL, W., KONIG, C., MEYER, B. & HEISIG, P. (2004) The Future of Knowledge Management: An International Delphi Study. *Journal of Knowledge Management*, 8, 19-35.
- SHAN, L. & SCARBOROUGH, H. (1999) Knowledge Management in Practise: An Exploratory Case Study. *Technology Analysis and Strategic Management*, 11, 259-275.
- SHERIF, K., HOFFMAN, J. & THOMAS, B. (2006) Can Technology Build Organizational Social Capital? The Case of a Global IT Consulting Firm. *Information and Management*, 43, 795-804.
- SILVERMAN, D. (2005) *Doing Qualitative Research*, London, Sage.
- SMITH, C. (2001) Leveraging Knowledge at American Management Systems. *Best Practise Measurement Strategies*, 1, 10-17.
- SMITH, H. (1975) *Strategies of Social Research: The Methodological Imagination*, London, Prentice Hall.
- SMITH, M. (1998) Measuring Organisational Effectiveness. *Management Accounting*, 76, 34-36.

- SPENDER, J. C. & GRANT, R. M. (1996) Knowledge and the Firm: Overview. *Strategic Management Journal*, 17, 5-9.
- STEERS, R. M. & MOWDAY, R. T. (1977) The Motivational Properties of Tasks. *Academy of Management Review*, 2, 645-658.
- STEMMER, D. (2002) Laying the Foundation for KM Measurement and Management. *Knowledge Management Review*, 5.
- STETZER, A., MORGESON, F. P. & ANDERSON, E. L. (1997) Organizational Climate and Ineffectiveness: Evidence from 25 Outdoor Work Crew Divisions. *Journal of Quality Management*, 2, 251-265.
- STODDART, L. (2001) Managing Intranets to Encourage Knowledge Sharing: Opportunities and Constraints. *Online Information Review*, 25, 19-29.
- SVEIBY, K. (1997) *The New Organizational Wealth: Managing and Measuring Knowledge-based Assets*, San Francisco, CA, Barrett-Kohler.
- SVEIBY, K. (2001) What is Knowledge Management?
- TAMPOE, M. (1993) Motivating Knowledge Workers - the Challenge for the 1990's. *Long Range Planning*, 26, 49-55.
- TEECE, D. (1998) Capturing Value from Knowledge Assets. *California Management Review*, 40, 55-79.
- TEECE, D. (2000) *Managing Intellectual Capital: Organisational, Strategic and Policy Dimensions*, Oxford, Oxford University Press.
- TOWNSEND, A. M., DEMARIE, S. M. & HENDRICKSON, A. R. (1998) Virtual Teams: Technology and the Workplace of the Future. *Academy of Management Executive*, 13, 575-580.
- TSAI, W. (2001) Knowledge Transfer in Intra-organizational Networks: Effects of Network Position and Absorptive Capacity on Business Unit Innovation and Performance. *Academy of Management Journal*, 44, 996-1009.
- VAN DEN HOOFF, B., VIJVERS, J. & DE RIDDER, J. (2003) Foundations and Applications of a Knowledge Management Scan. *European Management Journal*, 21, 237-246.
- VAN MAANEN, J. & BARLEY, S. (1984) Occupational Communities: Culture and Control in Organizations. *Research in Organizational Behavior*, 6, 287-367.
- WALLACE, J., HUNT, J. & RICHARDS, C. (1999) The Relationship Between Organisational Culture, Organisational Climate and Managerial Values. *The International Journal of Public Sector Management*, 12, 548-564.

- WATSON, S. & HEWETT, K. (2006) A Multi Theoretical Model of Knowledge Transfer in Organizations: Determinants of Knowledge Contribution and Knowledge Re-use. *Journal of Management Studies*, 43, 141-173.
- WEBB, J. R. (2002) *Understanding and Designing Marketing Research*, London, Thompson.
- WEST, M. A., SMITH, H., LU FENG, W. & LAWTHOM, R. (1998) Research Excellence and Departmental Climate in British Universities. *Journal of Occupational and Organisational Psychology*, 71, 261-281.
- WILSON, T. (2002a) The Nonsense of 'Knowledge Management'. *Information Research*, 8.
- WILSON, T. (2002b) University of Sheffield, Department of Information Studies.
- WRIGHT, G. & TAYLOR, W. A. (2003) Strategic Knowledge Sharing for Improved Service Delivery: Managing an Innovative Culture for Effective Partnerships. IN COAKES, E. (Ed.) *Knowledge Management: Current Issues and Challenges*. Hershey, IRM Press.
- YANG, J.-T. (2004) Job-related Knowledge Sharing: Comparative Case Studies. *Journal of Knowledge Management*, 8, 118-126.
- YOUNG, E. (1998) *Twenty Questions on Knowledge in the Organisation*. London, Ernst & Young.
- ZAHRA, S. & GEORGE, G. (2000) Absorptive Capacity: A Review and Reconceptualisation. *Academy of Management Proceedings*.
- ZIKMUND, W. (2003) *Business Research Methods*, Ohio, Thompson Learning.
- ZUBOFF, S. (1998) *In the Age of the Smart Machine: The Future of Work and Power*, Oxford, Heinemann Professional.

**Appendix 1**  
**Questionnaire**

## Confidential

### COMMUNICATION SURVEY

This is a national survey looking at communication in organisations. Responses are based on your own experiences, therefore there are no right or wrong answers. All replies are confidential and you are not asked for your name, or your organisation. The questionnaire should take no longer than 15 minutes to complete. Thank you for your time in completing this questionnaire.

Please answer the following questions, as honestly as possible, with your own organisation/department in mind.

To answer the questions, please tick the appropriate box that represents how you feel.

#### SECTION 1: MYSELF IN MY ORGANISATION

##### Sharing Information

|  | strongly<br>agree        | slightly<br>agree        | Neutral                  | slightly<br>disagree     |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| My supervisor keeps me informed about what is happening                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I receive all the information needed to carry out my work                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| In general I am kept informed about significant issues in the organisation | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| The organisational grapevine keeps me well informed                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I have adequate opportunity to express my views in my department           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I share the information I have with colleagues outside the department      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I use my skills to support colleagues outside the department               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Colleagues outside my department share information when I ask them         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Colleagues outside my department share their skills when I ask them        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| My line manager clarifies what he or she expects from me                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| My line manager lives up to my expectations of him/her                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| My colleagues live up to my expectations of them                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| The sharing of information makes this a better place to work               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

##### Role Clarity

|  | strongly<br>agree        | slightly<br>agree        | Neutral                  | slightly<br>disagree     |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| I am very clear about my role in helping the organisation achieve its goals          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| The future objectives of the organisation are consistent with my personal objectives | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Clear goals are provided for my job  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I am clear about my work priorities  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I fully understand what my responsibilities are                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I know exactly what is expected of me  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I am aware of the role most people play in the organisation                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I know what contribution most departments make                                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

##### Reward

|  | strongly<br>agree        | slightly<br>agree        | Neutral                  | slightly<br>disagree     |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| Colleagues in my department value me                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I value colleagues in my department                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I feel valued by the organisation as a whole           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Overall I value my work colleagues in the organisation | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

|  |                          |                          |                          |                          |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| The organisation is too tolerant of poor performers    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I am rewarded for sharing knowledge                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I receive a salary appropriate to the work I undertake | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I receive appropriate benefits                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

### Career Development

|  | strongly agree           | slightly agree           | Neutral                  | slightly disagree        |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| Reviews of my work are strongly related to my personal development               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I fully understand how the appraisal system works                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| There are appropriate systems for appraising my performance                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I think that it is important to discuss my appraisal report with my line manager | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Sharing knowledge is taken into consideration in my performance appraisal        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I am unlikely to leave the organisation to develop my career                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| My current job makes full use of my abilities                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

### Decision Making

|  | strongly agree           | slightly agree           | Neutral                  | slightly disagree        |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| I have full confidence in the process by which important organisational decisions are made | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I am kept well enough informed for me to take appropriate decisions                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| My line manager does not try to control my work activities                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| My colleagues often take the initiative in solving problems                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| In taking an initiative, my colleagues sometimes ignore rules                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I am only held responsible for those things I can influence                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Work is delegated to me according to my level of experience                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| My line manager likes me to consult him/her before I take action                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I fully participate in decisions which directly affect my work                             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I am encouraged to be innovative in my work  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

### Teamwork & Support

|   | strongly agree           | slightly agree           | Neutral                  | slightly disagree        |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| I have to put in long hours to achieve my work targets                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Work piles up faster than I can complete it                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| There is often too much work to do in the time allocated                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I often feel that the pressure of work is excessive                             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I do not have time to read all the documentation that is passed to me           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I am often put under undue pressure by my colleagues                            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| The training offered by the organisation is of a high quality                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| My work would improve with more training  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I have received sufficient training to do my job effectively                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I would work more effectively if the other employees shared their ideas         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| When I've learnt something new, I pass it on to my colleagues                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| My colleagues are generally keen to discuss work matters with me                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| My department receives sufficient information to enable it to achieve its goals | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Organisational information is well presented                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Information is always available when it is needed                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| My department suffers from information overload                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

### Commitment & Morale

|   | strongly agree           | slightly agree           | Neutral                  | slightly disagree        |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| I am a valued member of the department    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I am proud to be part of the organisation | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

|  |                          |                          |                          |                          |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| My personal morale is high   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I have a strong sense of job satisfaction                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| In the main, the organisation meets my needs                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| The organisation respects my needs, even though they cannot always meet them | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Overall, the organisation is flexible in meeting my needs                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I would happily work for this organisation until retirement age              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

## SECTION 2: HOW THE ORGANISATION WORKS

### Sharing Information

|  | strongly<br>agree        | slightly<br>agree        | Neutral                  | slightly<br>disagree     |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| Colleagues in my department share information about what is happening                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Senior management keeps everyone in the organisation informed about current activities | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| There is open sharing of information across organisational departments                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| The organisation encourages all employees to openly share information                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| The people in my department cooperate well with other departments                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| The department receives all the information it needs to function effectively           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| The department is fully informed about significant organisational issues               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Overall, organisational communication is effective                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| The organisation is good at sharing good practice                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| The organisation is good at learning from things that do not go well                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Suggestions for improvements are rarely sought by my line manager                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Suggestions made by employees are usually ignored                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| The organisational "grapevine" is a strong source of knowledge                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Sharing knowledge is one of the core values of the organisation                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Sharing knowledge makes it easier for us to achieve our goals                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Sharing knowledge is important for the organisation's survival                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Employees influence senior management in their making of policy decisions              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| The organisation encourages employees to pass information upwards to managers          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| My colleagues openly discuss what they need of each other                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Procedures are in place for employees to clarify their expectations of line managers   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Departments clarify what they expect from each other                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Employees are encouraged to participate in formulating their performance objectives    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Senior management lives up to its responsibilities to the workers                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| The organisation's IT system allows for effective information sharing                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

### Goal Clarity

|  | strongly<br>agree        | slightly<br>agree        | Neutral                  | slightly<br>disagree     |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| The organisation makes the best use of people's experience                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Overall, the organisation has good quality staff                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| People in my department fully understands the business objectives                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Clear guidelines are provided on how work should be completed                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| In my organisation there is a real will to succeed                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| When business opportunities arise, people make an extra effort to capitalise on them | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| The organisation's strategic goals are understood by all employees                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| The organisation's strategic goals are openly shared                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| The organisation has a strong determination to beat clearly defined competitors      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Achieving business goals is the organisation's most important aim                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Once a project has been started it is usually seen through to completion             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| It is clear where one person's job ends and another person's begins                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

|  |                          |                          |                          |                          |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| Employees are protective about their work  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Future plans for the organisation are clearly communicated to employees                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| I feel as sense of belonging to the organisation   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| The next five years is likely to be better for the organisation than the last five years       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Most employees share a clear understanding of what it is the organisation is trying to achieve | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| My department is encouraged to innovate  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| The organisation undertakes adequate planning for the future                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| The organisation responds promptly to new market innovations                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Work methods are quickly changed to meet new conditions  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| <b>Reward System</b>  |                          |                          |                          |                          |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
|   | strongly<br>agree        | slightly<br>agree        | Neutral                  | slightly<br>disagree     |
| Employees who work hard are appropriately recognised                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Employees whose work is not of the highest order are dealt with appropriately | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| In general, the organisation appropriately rewards employees                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Employees who work hard are appropriately recognised                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Poor performance is dealt with effectively                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Consequences of poor performance are clear for all to see                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| There are clear differences in pay awards made to good and bad performers     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| My department respects the contributions made by other departments            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| My department is respected by the other departments in the organisation       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| <b>Career Development</b>  |                          |                          |                          |                          |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
|  | strongly<br>agree        | slightly<br>agree        | Neutral                  | slightly<br>disagree     |
| The organisation takes career development seriously                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Promotion within the organisation is clearly based on merit          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| An adequate system for career development exists in the organisation | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| <b>Planning &amp; Decision Making</b>  |                          |                          |                          |                          |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
|  | strongly<br>agree        | slightly<br>agree        | Neutral                  | slightly<br>disagree     |
| The work of the organisation is coordinated effectively  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| It is rare that new projects are started without it being decided in advance how they will proceed | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Planning is carried out appropriately in the organisation  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Workers can get what they need from other departments without being hampered by procedures         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| In general, decision making in the organisation is effective                                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Senior management encourages workers to use their imitative when procedures are unclear            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| In general, the organisation encourages employees to make their own decisions                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| <b>Teamwork &amp; Support</b>  |                          |                          |                          |                          |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
|  | strongly<br>agree        | slightly<br>agree        | Neutral                  | slightly<br>disagree     |
| The organisation regularly reviews work procedures                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| The organisation's induction procedures are effective                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Employees in this organisation are enthusiastic about learning from their work     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Employees are committed to helping each other learn about their work               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| In general, people pull their weight in the organisation                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| In general, this is a caring organisation  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| People here strongly support each other  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Departments meet their responsibilities to other departments                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Within the organisation everyone is clearly held responsible for their performance | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



### Commitment & Morale

|  | strongly agree           | slightly agree           | Neutral                  | slightly disagree        |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| Motivation in the organisation is currently at a high level                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Morale is high in most departments   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| The morale in my department is currently high                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| In general employees show a strong commitment to the organisation          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| The commitment of staff is an important asset for any organisation         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| The organisation effectively solves most of its important problems         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| In this organisation conflicts tend to be resolved constructively          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Employees are generally encouraged to resolve conflicts quickly            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| The organisation has measures in place that reduce the number of conflicts | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| There is little conflict between departments                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| In general conflict is managed effectively by the organisation             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

### Quality of Service

|  | strongly agree           | slightly agree           | Neutral                  | slightly disagree        |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| In general, this is a successful organisation  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| With regards to the organisation's products/ services, only the best will do               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| We are proud of the quality provided by our department                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| My department has quality standards that are higher than those of its external competitors | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**Thinking of your job, how would you rate your current job?  
(please circle one number for each item)**

|                  |   |   |   |   |   |   |   |                 |
|------------------|---|---|---|---|---|---|---|-----------------|
| Enjoyable        | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unpleasant      |
| Bad              | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Good            |
| Worthwhile       | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Waste of time   |
| Better than most | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Worst than most |
| Excellent        | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Poor            |
| Agreeable        | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Disagreeable    |
| Contented        | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Discontented    |

What do you consider your organisation's main strategic focus? **(please tick one box only)**

Efficiency/Cost reduction     Quality     Innovation     Customer Satisfaction     Don't Know

Does your organisation have a knowledge management programme? Yes     No     Don't Know

How much do you know about knowledge management? **(please tick one box only)**

Never heard of it     A little bit     A fair amount     A great deal

**Text cut off in original**

### Finally, a few questions about yourself

These questions are being asked so that comparisons can be made between different groups of respondents.  
All responses will remain confidential, with no individual being identified.

|  |  |  |
|--|--|--|
| <b>How would you classify your organisation? (please tick one box only)</b>  |  |  |
| Manufacturing/production <input type="checkbox"/>  | Retail/Wholesale <input type="checkbox"/>  | Health/Education/Government <input type="checkbox"/>   |
| Business/Professional Services <input type="checkbox"/>  | Construction engineering, <input type="checkbox"/>   | Utilities/Mining/Agriculture <input type="checkbox"/>  |
| Telecommunications/IT <input type="checkbox"/>   | Transport/Distribution <input type="checkbox"/>  | Banking/Finance/Insurance/Law <input type="checkbox"/>   |
| Leisure/Catering/Hotels <input type="checkbox"/>   | Health/Education/Government <input type="checkbox"/>   | Other <input type="checkbox"/>   |
| <p><b>Which department in the organisation do you work for?</b><br/>.....<br/>...</p> <p><b>What is your job title?</b><br/>.....<br/>...</p> <p><b>What is your employment status?</b><br/>.....</p> <p>F/T <input type="checkbox"/> P/T <input type="checkbox"/> Contractor <input type="checkbox"/></p> | <p><b>Which of the following best describes your position in the organisation? (please tick one box only)</b></p> <p>Executive/CEO/Director <input type="checkbox"/> Junior Manager <input type="checkbox"/></p> <p>Senior Manager <input type="checkbox"/> Supervisor <input type="checkbox"/></p> <p>Middle Manager <input type="checkbox"/> Front-line employee <input type="checkbox"/></p> <p>Other (please state) <input type="checkbox"/><br/>.....</p> | <p><b>Are you: Male</b> <input type="checkbox"/></p> <p><b>What is your age</b> .....</p> <p><b>How long have you worked for the organisation?</b><br/>.....</p> <p><b>How long have you held your current role?</b><br/>.....</p> |
| <p><b>How would you rate your knowledge/understanding of the tasks required in your job?</b><br/>High <input type="checkbox"/> Medium <input type="checkbox"/> Low <input type="checkbox"/> None <input type="checkbox"/></p>  |  |  |

If you have any other comments please add them over the page.

Thank you very much for your time, your thoughts are very greatly appreciated.

***Please return the completed questionnaire to:***

**Yusra Mouzoughi,  
Senior Lecturer,  
School of Management,  
Liverpool John Moores University,  
John Foster Building, 98 Mount Pleasant,  
Liverpool, L3 5UZ**

...

## **Appendix 2**

### **Items in Each Construct**

## Items in Knowledge-Friendly Culture Construct

|  |
|--|
| The commitment of staff is an important asset for any organisation                         |
| Sharing knowledge makes it easier for us to achieve our goals                              |
| I am very clear about my role in helping the organisation achieve its goals                |
| I am clear about my work priorities  |
| I value colleagues in my department  |
| I feel valued by the organisation as a whole   |
| I know exactly what is expected of me  |
| We are proud of the quality provided by our department                                     |
| Overall I value my work colleagues in the organisation                                     |
| I am a valued member of the department   |
| Colleagues outside my dept. share information when I ask them                              |
| I am kept informed about significant issues in the org.                                    |
| The people in my department cooperate well with other departments                          |
| Achieving business goals is the organisation's most important aim                          |
| I use my skills to support colleagues outside the dept.                                    |
| My line manager clarifies what he or she expects from me                                   |
| Colleagues outside my dept. share their skills when I ask them                             |
| With regards to the organisation's products/ services, only the best will do               |
| I am proud to be part of the organisation  |
| I am aware of the role most people play in the organisation                                |
| Employees are encouraged to participate in formulating their performance objectives        |
| The organisational grapevine keeps me well informed  |
| My department has quality standards that are higher than those of its external competitors |
| The organisation has a strong determination to beat clearly defined competitors            |
| The organisation's strategic goals are openly shared                                       |
| In general, people pull their weight in the organisation                                   |
| The next five years are likely to be better for the organisation than the last five years  |
| People here strongly support each other  |
| Employees are generally encouraged to resolve conflicts quickly                            |
| I share the information I have with colleagues outside the dept.                           |
| Reviews of my work are strongly related to my personal development                         |
| I feel valued by the organisation as a whole   |
| Overall, organisational communication is effective   |
| Once a project has been started it is usually seen through to completion                   |
| I feel as sense of belonging to the organisation   |
| My department respects the contribution made by other departments                          |
| My work would improve with more training   |
| In general, this is a caring organisation  |
| The organisation encourages all employees to openly share information                      |
| The organisation encourages employees to pass information upwards to managers              |
| The organisation effectively solves most of its important problems                         |
| Employees are committed to helping each other learn about their work                       |

|  |
|--|
| Within the organisation everyone is clearly held responsible for their performance                 |
| The organisational "grapevine" is a strong source of knowledge                                     |
| In general, decision making in the organisation is effective                                       |
| I would happily work for this organisation until retirement age                                    |
| The organisation regularly reviews work procedures   |
| Sharing knowledge is one of the core values of the organisation                                    |
| The organisation's strategic goals are understood by all employees                                 |
| Employees are protective about their work  |
| The organisation makes the best use of people's experience   |
| The organisation is too tolerant of poor performers  |
| The work of the organisation is coordinated effectively  |
| Employees in this organisation are enthusiastic about learning from their work                     |
| In general conflict is managed effectively by the organisation                                     |
| Senior management lives up to its responsibilities to the workers                                  |
| My current job makes full use of my abilities  |
| The organisation is good at sharing good practice  |
| Planning is carried out appropriately in the organisation  |
| There is little conflict between departments   |
| The organisation is good at learning from things that do not go well                               |
| The training offered by the organisation is of a high quality                                      |
| Procedures are in place for employees to clarify their expectations of line managers               |
| The organisation has measures in place that reduce the number of conflicts                         |
| Consequences of poor performance are clear for all to see  |
| It is rare that new projects are started without it being decided in advance how they will proceed |
| The organisation's induction procedures are effective  |
| Workers can get what they need from other departments without being hampered by procedures         |
| In taking an initiative, my colleagues sometimes ignore rules                                      |
| Suggestions made by employees are usually ignored  |

### **Items in High-Trust Climate Construct**

|  |
|--|
| Employees are generally encouraged to resolve conflicts quickly                  |
| I fully understand what my responsibilities are                                  |
| I think that it is important to discuss my appraisal report with my line manager |
| Sharing knowledge makes it easier for us to achieve our goals                    |
| I am very clear about my role in helping the organisation achieve its goals      |
| I am clear about my work priorities  |
| I value colleagues in my department  |
| I know exactly what is expected of me  |
| The sharing of information makes this a better place to work                     |
| Overall I value my work colleagues in the organisation                           |
| I have adequate opportunity to express my views in my dept.                      |

|   |
|---|
| Colleagues in my department value me  |
| Colleagues outside my dept. share information when I ask them                             |
| The people in my department cooperate well with other departments                         |
| My line manager clarifies what he or she expects from me                                  |
| Colleagues outside my dept. share their skills when I ask them                            |
| I use my skills to support colleagues outside the dept.                                   |
| I am proud to be part of the organisation   |
| I am aware of the role most people play in the organisation                               |
| My colleagues live up to my expectations of them  |
| I know what contribution most departments make  |
| In my organisation there is a real will to succeed  |
| My line manager lives up to my expectations of him/her                                    |
| In general, people pull their weight in the organisation                                  |
| The next five years are likely to be better for the organisation than the last five years |
| People here strongly support each other   |
| I share the information I have with colleagues outside the dept.                          |
| Overall, the organisation is flexible in meeting my needs                                 |
| I feel valued by the organisation as a whole  |
| Once a project has been started it is usually seen through to completion                  |
| I feel as sense of belonging to the organisation  |
| My department respects the contribution made by other departments                         |
| In general, this is a caring organisation   |
| My department is respected by the other departments in the organisation                   |
| The organisation encourages all employees to openly share information                     |
| The organisation encourages employees to pass information upwards to managers             |
| The organisation effectively solves most of its important problems                        |
| The organisation respects my needs, even though they cannot always meet them              |
| Within the organisation everyone is clearly held responsible for their performance        |
| The organisational "grapevine" is a strong source of knowledge                            |
| In general, decision making in the organisation is effective                              |
| I would happily work for this organisation until retirement age                           |
| The organisation regularly reviews work procedures  |
| Sharing knowledge is one of the core values of the organisation                           |
| In this organisation conflicts tend to be resolved constructively                         |
| The organisation is too tolerant of poor performers                                       |
| The work of the organisation is coordinated effectively                                   |
| In general conflict is managed effectively by the organisation                            |
| Senior management lives up to its responsibilities to the workers                         |
| My current job makes full use of my abilities   |
| The organisation is good at sharing good practice   |
| Planning is carried out appropriately in the organisation                                 |
| The organisation is good at learning from things that do not go well                      |
| There is little conflict between departments  |
| Procedures are in place for employees to clarify their expectations of line managers      |
| The organisation has measures in place that reduce the number of conflicts                |
| I am unlikely to leave the organisation to develop my career                              |

|  |
|--|
| The organisation's induction procedures are effective                                      |
| Workers can get what they need from other departments without being hampered by procedures |
| Suggestions made by employees are usually ignored  |

### **Items in Routine Knowledge Sharing Construct**

|  |
|--|
| I think that it is important to discuss my appraisal report with my line manager       |
| Sharing knowledge makes it easier for us to achieve our goals                          |
| The sharing of information makes this a better place to work                           |
| When I've learnt something new, I pass it on to my colleagues                          |
| Colleagues outside my dept. share information when I ask them                          |
| I receive all the information needed to carry out my work                              |
| I am kept informed about significant issues in the org.                                |
| My colleagues are generally keen to discuss work matters with me                       |
| My supervisor keeps me informed about what is happening                                |
| Colleagues outside my dept. share their skills when I ask them                         |
| Colleagues in my department share information about what is happening                  |
| I am aware of the role most people play in the organisation                            |
| The organisational grapevine keeps me well informed                                    |
| The organisation's strategic goals are openly shared                                   |
| The department is fully informed about significant organisational issues               |
| I share the information I have with colleagues outside the dept.                       |
| My colleagues openly discuss what they need of each another                            |
| The organisation encourages all employees to openly share information                  |
| The organisation encourages employees to pass information upwards to managers          |
| The department receives all the information it needs to function effectively           |
| Employees are committed to helping each other learn about their work                   |
| The organisational "grapevine" is a strong source of knowledge                         |
| I would work more effectively if the other employees shared their ideas                |
| Senior management keeps everyone in the organisation informed about current activities |
| Sharing knowledge is one of the core values of the organisation                        |
| Future plans for the organisation are clearly communicated to employees                |
| Sharing knowledge is taken into consideration in my performance appraisal              |
| The organisation is good at sharing good practice                                      |
| The organisation is good at learning from things that do not go well                   |
| Procedures are in place for employees to clarify their expectations of line managers   |
| There is open sharing of information across organisational departments                 |
| Employees influence senior management in their making of policy decisions              |
| Departments clarify what they expect from each other                                   |
| Suggestions for improvements are rarely sought by my line manager                      |
| Suggestions made by employees are usually ignored                                      |

### **Items in High Levels of Job Satisfaction Construct**



|  |
|--|
| I think that it is important to discuss my appraisal report with my line manager       |
| Sharing knowledge makes it easier for us to achieve our goals                          |
| The sharing of information makes this a better place to work                           |
| When I've learnt something new, I pass it on to my colleagues                          |
| Colleagues outside my dept. share information when I ask them                          |
| I receive all the information needed to carry out my work                              |
| I am kept informed about significant issues in the org.                                |
| My colleagues are generally keen to discuss work matters with me                       |
| My supervisor keeps me informed about what is happening                                |
| Colleagues outside my dept. share their skills when I ask them                         |
| Colleagues in my department share information about what is happening                  |
| I am aware of the role most people play in the organisation                            |
| The organisational grapevine keeps me well informed                                    |
| The organisation's strategic goals are openly shared                                   |
| The department is fully informed about significant organisational issues               |
| I share the information I have with colleagues outside the dept.                       |
| My colleagues openly discuss what they need of each another                            |
| The organisation encourages all employees to openly share information                  |
| The organisation encourages employees to pass information upwards to managers          |
| The department receives all the information it needs to function effectively           |
| Employees are committed to helping each other learn about their work                   |
| The organisational "grapevine" is a strong source of knowledge                         |
| I would work more effectively if the other employees shared their ideas                |
| Senior management keeps everyone in the organisation informed about current activities |
| Sharing knowledge is one of the core values of the organisation                        |
| Future plans for the organisation are clearly communicated to employees                |
| Sharing knowledge is taken into consideration in my performance appraisal              |
| The organisation is good at sharing good practice                                      |
| The organisation is good at learning from things that do not go well                   |
| Procedures are in place for employees to clarify their expectations of line managers   |
| There is open sharing of information across organisational departments                 |
| Employees influence senior management in their making of policy decisions              |
| Departments clarify what they expect from each other                                   |
| Suggestions for improvements are rarely sought by my line manager                      |
| Suggestions made by employees are usually ignored                                      |

### **Items in Flexible Organisational Structure Construct**

|  |
|--|
| People in my department fully understand the business objectives                               |
| My line manager does not try to control my work activities                                     |
| I fully participate in decisions which directly affect my work                                 |
| I am kept well enough informed for me to take appropriate decisions                            |
| Most employees share a clear understanding of what it is the organisation is trying to achieve |

|  |
|--|
| My department respects the contribution made by other departments                          |
| Work is delegated to me according to my level of experience                                |
| The organisation undertakes adequate planning for the future                               |
| My department is respected by the other departments in the organisation                    |
| Departments meet their responsibilities to other departments                               |
| I am only held responsible for those things I can influence                                |
| Senior management keeps everyone in the organisation informed about current activities     |
| Future plans for the organisation are clearly communicated to employees                    |
| I have full confidence in the process by which important organisational decisions are made |
| It is clear where one person's job ends and another person's begins                        |
| Employees influence senior management in their making of policy decisions                  |
| In taking an initiative, my colleagues sometimes ignore rules                              |
| My line manager likes me to consult him/her before I take action                           |

### **Items in Routine Innovation Construct**

|   |
|---|
| I am encouraged to be innovative in my work   |
| When business opportunities arise, people make an extra effort to capitalise on them    |
| My department is encouraged to innovate   |
| My colleagues often take the initiative in solving problems                             |
| Senior management encourages workers to use their imitative when procedures are unclear |
| The organisation responds promptly to new market innovations                            |
| In general, the organisation encourages employees to make their own decisions           |
| Work methods are quickly changed to meet new conditions                                 |
| In taking an initiative, my colleagues sometimes ignore rules                           |

### **Items in Knowledge-Sharing Based Reward Construct**

|   |
|---|
| Colleagues in my department value me                                      |
| There are appropriate systems for appraising my performance               |
| In the main, the organisation meets my needs                              |
| I receive appropriate benefits  |
| The organisation takes career development seriously                       |
| Employees who work hard are appropriately recognised                      |
| In general, the organisation appropriately rewards employees              |
| I receive a salary appropriate to the work I undertake                    |
| Sharing knowledge is taken into consideration in my performance appraisal |
| There are clear differences in pay awards made to good and bad performers |
| Consequences of poor performance are clear for all to see                 |
| Motivation in the organisation is currently at a high level               |

Promotion within the organisation is clearly based on merit

Employees whose work is not of the highest order are dealt with appropriately

### **Items in Effective Information Technology Construct**

My department receives sufficient information to enable it to achieve its goals

Organisational information is well presented

My department suffers from information overload

Information is always available when it is needed

### **Items in Availability of Time Construct**

I do not have time to read all the documentation that is passed to me

I have to put in long hours to achieve my work targets

There is often too much work to do in the time allocated

I often feel that the pressure of work is excessive

Work piles up faster than I can complete it

**Appendix 3**  
**Covering Letter**

**Dear**

***EFFECTIVE COMMUNICATION MANAGEMENT***

Effective communication in organisations is a subject of much debate. We simply do not understand what combination of factors constitute best practise in sharing information.

This survey is designed to develop an understanding of effective communication. It is part of a major research programme undertaken at Liverpool John Moores University and I am writing to invite you to participate, as it is very important for us to receive your input. You may be assured that the confidentiality of your responses will be respected.

The survey should take you no more than 15 minutes to complete. If you would like a summary of the results – factors leading to effective communication management – please include your mailing details at the end of the survey.

Thank you – I know you have great demands on your time, but this research anticipates helping you make best use of your limited resources.

I would be very happy to answer any questions you may have and may be contacted on 0151 231 3261.

Yours sincerely

Yusra Mouzughy MBA, BA (Hons)  
Senior Lecturer  
School of Management

SOME PARTS  
EXCLUDED  
UNDER  
INSTRUCTION  
FROM THE  
UNIVERSITY