Investigating the factors affecting the development of a National Quality Award (NQA) in Libya

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Investigating the factors affecting the development of A National Quality Award (NQA) In Libya

By

Farage Swei Sayeh

A Doctoral thesis, submitted in partial fulfilment of the requirements for the award of Doctor of Philosophy of Loughborough University

July 2006

Supervisors: Dr Samir Dani
Professor Neil Burns

Wolfson School of Mechanical and Manufacturing

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Investigating the factors affecting the development of NQA
AUTHOR PROFILE

As the owner and Managing Director of a quality and business consultancy firm (ELHIRA Consultancy and Quality Engineering), for many years Farage has been instrumental in promoting the implementation of quality management, business improvement, and organisational development techniques, throughout the Middle East and North African region. The author has successfully designed, implemented and certified business management systems compliant with international standards, including ISO 9000 and ISO 14000.

Having studied and worked in the USA, Western European countries and in the Middle East, the author has gained extensive experience in developing and delivering lectures and training courses, in both academic and business environments, in several languages, and across different cultures and industries.

KEY ACHIEVEMENTS

- A founder member of the Middle East Quality Association and a member of the board of directors.
- A Constitution Committee member and Quality Award Development Committee member for the Middle East Quality Association.
- The founder and Vice President of the Libyan Quality Society.
- The organizer of the First National Symposium on Quality, Environment and Health & Safety, in Libya
- A member of the Technical Committee within the Libyan Standardization and Metrology Centre.
- BSc. In Computer Engineering, USA.
- MSc. In Quality Engineering, UK.

PUBLICATIONS

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ABSTRACT

The wide success of Business Excellence Models (BEM) and their associated National Quality Awards (NQA) such as the Deming Prize (DP), the Malcolm Baldrige National Quality Award (MBNQA), and the European Quality Award (EQA), has encouraged many other countries to develop their own quality award programs. These awards are based on the business excellence principles which grew out of the TQM initiatives of the 1980s.

Most of these initiatives have originated in the west or in essentially westernised economies. Hence, there is a belief that these theories are based on a set of values and beliefs that are more aligned with the developed nations. Consequently, this may undermine their success in Middle Eastern countries; however, some existing studies assume their universality. The argument brought forward in this research is that the variations existing between the now available NQA models, are due to the discrepancies found in the values and beliefs of the region were the NQA model was originally developed. Hence, comparative studies suggest that, in most of the NQA model development; the economic structure, social characteristics, and quality maturity level of the country should be taken in account.

The primary objective of this research was to investigate the factors affecting the development of a NQA model for Libya. The research will review and analyse most of the available IQA models such as (The European Foundation for Quality Management, the American Malcolm Baldrige National Quality Award, and the Japanese Deming Prize) as identified in the literature.

The research objective was achieved through a methodology containing 3 basic phases; desk-top research (phase 1); questionnaire surveys and interviews (phase 2); and data analysis and the final development (phase 3). Each of these phases and methods aimed to collect relevant information for one or more of the processes within the research scope.

In the empirical part of the study, the practical value of a theoretical framework is illustrated in the analysis of these prevailing factors. This study also examines these factors within the Libyan context, for the purpose of developing a tailor made NQA model. The findings indicated that Libya is still in the early stages towards TQM initiatives. Based on the findings, an NQA process development framework is devised and recommendations for their development are provided.
GLOSSARY OF KEY TERMS

Quality: The totality of features and characteristics of a product or service that bear on its ability to satisfy given needs (customers' needs and requirements).

Quality Assurance: All those planned and systematic actions necessary to provide adequate confidence that a product or service will satisfy given requirements for quality.

Total Quality Management (TQM): Both a philosophy and set of guiding principles that represent the foundation of a continuously improving organization (its structure, products/services, systems and processes, individuals ...) through the participation by all parties (customers, employees, suppliers ...) at all levels of the organization aiming at achieving customers' satisfaction.

TQM Self-Assessment: A cyclic, comprehensive, systematic, and regular review of an organization's activities and results against a TQM model/framework (e.g. The Malcolm Baldrige National Quality Award and the European Foundation for Quality Management Award) culminating in planned improvement actions.

TQM Model/Framework: Is usually used to present a picture of what is required for introducing TQM. It incorporates means of developing and presenting ideas, concepts, points and plans, which are guides to action.
### GLOSSARY OF ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
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<tr>
<td>ABC</td>
<td>Arab Business Council</td>
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<td>BEM</td>
<td>Business Excellence Model</td>
</tr>
<tr>
<td>BPR</td>
<td>Business Process Reengineering</td>
</tr>
<tr>
<td>BS</td>
<td>British Standards</td>
</tr>
<tr>
<td>CI</td>
<td>Continuous Improvement</td>
</tr>
<tr>
<td>CSF's</td>
<td>Critical Success Factors</td>
</tr>
<tr>
<td>CWQC</td>
<td>Company-Wide Quality Control</td>
</tr>
<tr>
<td>DAPD</td>
<td>Deming Application Prize for Divisions</td>
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<td>DAPSC</td>
<td>Deming Application Prize for Small Companies</td>
</tr>
<tr>
<td>DP</td>
<td>Deming Prize</td>
</tr>
<tr>
<td>DPI</td>
<td>Deming Prize for Individuals</td>
</tr>
<tr>
<td>DQA</td>
<td>Dubai Quality Model</td>
</tr>
<tr>
<td>DTI</td>
<td>Department of Trade and Industry</td>
</tr>
<tr>
<td>EC</td>
<td>European Commission</td>
</tr>
<tr>
<td>EFQM</td>
<td>European Foundation for Quality Management</td>
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<tr>
<td>EOQ</td>
<td>European Organisation for Quality</td>
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<td>EQA</td>
<td>European Quality Award</td>
</tr>
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<td>EQP</td>
<td>European Quality Prize</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>GAO</td>
<td>General Accounting Office</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>HDI</td>
<td>Human Development Index</td>
</tr>
<tr>
<td>HRM</td>
<td>Human Resources Management</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Computer Technology</td>
</tr>
<tr>
<td>IIP</td>
<td>Investors in People</td>
</tr>
<tr>
<td>IQA</td>
<td>Institute of Quality Assurance</td>
</tr>
<tr>
<td>IQA’s</td>
<td>International Quality Awards</td>
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<tr>
<td>ISO</td>
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<tr>
<td>JIT</td>
<td>Just in Time</td>
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<td>LNCSM</td>
<td>Libyan National Centre for Standards and Metrology</td>
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<td>Libyan Quality Society</td>
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<td>NIST</td>
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</tr>
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<td>NQA</td>
<td>National Quality Award</td>
</tr>
<tr>
<td>OCP</td>
<td>Organisational Culture Profile</td>
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<tr>
<td>OHAS</td>
<td>Occupational Health and Safety</td>
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<tr>
<td>PDCA</td>
<td>Plan Do Check Act (Deming Cycle)</td>
</tr>
<tr>
<td>PI</td>
<td>performance improvement</td>
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<tr>
<td>PM</td>
<td>Performance Measurement</td>
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Investigating the factors affecting the development of NQA

<table>
<thead>
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<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Quality Assurance</td>
</tr>
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<td>QC</td>
<td>Quality Control</td>
</tr>
<tr>
<td>QCAF</td>
<td>Quality Control Award for Factories</td>
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<td>QCC's</td>
<td>Quality Control Circles</td>
</tr>
<tr>
<td>QMS</td>
<td>Quality Management System</td>
</tr>
<tr>
<td>SPC</td>
<td>Statistical Process Control</td>
</tr>
<tr>
<td>SQA</td>
<td>Singapore Quality Award</td>
</tr>
<tr>
<td>TAI</td>
<td>Technology Achievement Index</td>
</tr>
<tr>
<td>TPM</td>
<td>Total Productive Maintenance</td>
</tr>
<tr>
<td>TQC</td>
<td>total quality control</td>
</tr>
<tr>
<td>TQM</td>
<td>Total Quality Management</td>
</tr>
<tr>
<td>UNDP</td>
<td>United Nations Development Programme</td>
</tr>
<tr>
<td>USA</td>
<td>United States of America</td>
</tr>
<tr>
<td>VR</td>
<td>Variation Ratio</td>
</tr>
</tbody>
</table>
ACKNOWLEDGEMENTS

I would like to express my thanks and appreciation to the supervisors of my research: Dr Barry C. Fisher and Dr Ed Swain for initiating this research, and Professor Neil Burns and Dr Samir Dani, for their guidance, encouragement, and advice on all technical and administrative issues, throughout the course of this research.

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My warmest and greatest appreciation is for my parents, and my brothers, for their indispensable support and encouragement. My special thanks go to my beloved family whose caring, patience, and moral support enabled me to pursue this academic endeavour, and for being there to remind me that there are other important things in life, besides academic research and studies.

Finally, this work couldn't be accomplished without the help and support of many people whose fingerprints can be found on every page of this thesis. I am wholeheartedly grateful to each and every individual, to all those whom I have mentioned and those whom I have unintentionally forgotten to mention.
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>THESIS ACCESS FORM</td>
<td>I</td>
</tr>
<tr>
<td>CERTIFICATE OF ORIGINALITY</td>
<td>II</td>
</tr>
<tr>
<td>AUTHOR PROFILE</td>
<td>IV</td>
</tr>
<tr>
<td>TITLE PAGE</td>
<td>V</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>VI</td>
</tr>
<tr>
<td>GLOSSARY OF KEY TERMS</td>
<td>VII</td>
</tr>
<tr>
<td>GLOSSARY OF ABBREVIATIONS</td>
<td>VIII</td>
</tr>
<tr>
<td>ACKNOWLEDGEMENT</td>
<td>IX</td>
</tr>
<tr>
<td>TABLE OF CONTENTS</td>
<td>XI</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>XIV</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>XV</td>
</tr>
</tbody>
</table>

## CHAPTER 1  THESIS BACKGROUND

1.1 INTRODUCTION 16
1.2 THE RESEARCH QUESTION 17
1.3 JUSTIFICATION AND IMPORTANCE 18
1.4 THE PROBLEM 20
1.5 RESEARCH AIMS, OBJECTIVES AND SCOPE 23
1.5.1 AIMS 23
1.5.2 THE SCOPE OF THE RESEARCH 24
1.6 METHODOLOGY 25
1.7 THESIS OUTLINES 26

## CHAPTER 2  LITERATURE REVIEW

2.1 CHAPTER OUTLINES 28
2.2 TQM DEVELOPMENT 28
2.2.1 INTRODUCTION 28
2.2.2 ORIGINS OF TQM AND TREND ANALYSIS 32
2.3 THE SALIENT CONCEPTS OF TQM 35
2.3.1 INTRODUCTION 35
2.3.2 CONTINUOUS IMPROVEMENT INITIATIVES 35
2.3.3 TQM TOOLS AND TECHNIQUES 36
2.3.4 TQM FRAMEWORKS 37
2.3.5 TQM IMPLEMENTATION APPROACHES 48
2.3.6 TQM CRITICAL SUCCESS FACTORS 49
2.4 TQM ASSESSMENT FRAMEWORKS 56
2.4.1 INTRODUCTION 56
2.4.2 SELF-ASSESSMENT 56
2.4.3 NATIONAL QUALITY AWARDS (NQA’S) 57
2.4.4 CRITIQUE 62
2.4.5 CONCLUSION 66
2.5 FACTORS AFFECTING THE DEVELOPMENT OF NQA’S 69
2.5.1 INTRODUCTION 69
2.5.2 POLITICAL AND SOCIO-ECONOMIC DEVELOPMENT 70
2.5.3 CULTURAL DIFFERENCES 75
2.5.4 TQM MATURITY LEVEL 84
2.6 LITERATURE ANALYSIS AND RESEARCH GAP 86
2.6.1 INTRODUCTION 86
2.6.2 RESEARCH GAP 88
2.6.3 CONCLUSION 90
CHAPTER 3    LIBYAN NATIONAL ENVIRONMENTAL CONDITIONS

3.1 INTRODUCTION  94
3.2 NATIONAL ENVIRONMENTAL CONDITIONS  95
3.3 LIBYAN BACKGROUND  96
3.4 P.E.S.T ANALYSIS OF LIBYA  98
3.4.1 POLITICAL  98
3.4.2 ECONOMIC  99
3.4.3 SOCIAL  108
3.4.4 TECHNOLOGICAL  111
3.4.5 NEW REFORMS IN LIBYA  115
3.5 LIBYAN AND REGIONAL CULTURAL PROFILES  116
3.6 LIBYAN AND REGIONAL QUALITY PROFILES  120
3.6.1 PROGRESSION OF QUALITY IN LIBYA  120
3.6.2 QUALITY IN THE MIDDLE EASTERN COUNTRIES  125
3.6.3 QUALITY IN DEVELOPING COUNTRIES  130
3.6.4 CONCLUSION  132

CHAPTER 4    RESEARCH METHODOLOGY

4.1 INTRODUCTION  134
4.2 RESEARCH METHODS  134
4.2.1 DEDUCTIVE RESEARCH  134
4.2.2 INDUCTIVE RESEARCH  135
4.2.3 QUALITATIVE RESEARCH  136
4.2.4 QUANTITATIVE RESEARCH  137
4.3 DATA COLLECTION  139
4.3.1 SECONDARY DATA  139
4.3.2 PRIMARY DATA  139
4.3.3 INTERVIEWS  140
4.3.4 OBSERVATION  140
4.3.5 QUESTIONNAIRE  141
4.3.6 SAMPLING  142
4.3.7 SAMPLE DESIGN  143
4.4 DATA ANALYSIS METHODOLOGY  143
4.5 APPROACH ADOPTED FOR THIS RESEARCH PROJECT  145
4.5.1 INTERVIEWS  147
4.5.2 QUESTIONNAIRE  147
4.5.3 GENERAL APPROACH ADOPTED FOR THE QUESTIONNAIRE  148
4.5.4 CHARACTERISTICS OF ORGANISATIONS THAT PARTICIPATED IN THE FIRST SURVEY  149
4.5.5 APPROACH ADOPTED FOR IDENTIFYING SOCIO-ECONOMIC DEVELOPMENT  149
4.5.6 APPROACH ADOPTED FOR IDENTIFYING TQM MATURITY  150
4.5.7 APPROACH ADOPTED FOR IDENTIFYING LIBYAN CULTURE  150
4.5.8 CHARACTERISTICS OF ORGANISATIONS THAT PARTICIPATED IN THE SECOND SURVEY  150
4.5.9 APPROACH ADOPTED FOR IDENTIFYING CSF'S  152

CHAPTER 5    ANALYSIS

5.1 CHAPTER OUTLINES  154
5.2 INTRODUCTION  154
5.3 THE PRELIMINARY QUESTIONNAIRE ANALYSIS  155
5.3.1 PILOT STUDY  155
5.3.2 CONCLUSION  158
5.4 THE FACTORS AFFECTING THE DEVELOPMENT OF NQA FOR LIBYA  159
5.4.1 THE SOCIO-ECONOMIC DEVELOPMENT WITHIN LIBYA  159
5.4.2 THE CULTURE WITHIN THE LIBYAN INDUSTRIAL CONTEXT  165
5.4.3 TQM MATURITY IN LIBYA  170
5.4.4 CONCLUSION  176
5.5 TQM-CRITICAL SUCCESS FACTORS WITHIN LIBYA  177
LIST OF FIGURES

FIGURE 1-1 THE VENN DIAGRAM REPRESENTING THE NQA ATTRIBUTES .......................................................... 24
FIGURE 1-2 RESEARCH METHODOLOGY FLOWCHART .............................................................................. 25
FIGURE 2-1 THE FOUR LEVELS IN THE EVOLUTION OF TQM ...................................................................... 29
FIGURE 2-2 EVOLUTION OF TOTAL QUALITY MANAGEMENT (TQM) .................................................................. 30
FIGURE 2-3 THE ISO 9000:2000 MODEL ........................................................................................................ 40
FIGURE 2-4 BALDRIGE AWARD CRITERIA FRAMEWORK; SOURCE: MBNQA (2000) ........................................... 60
FIGURE 2-5 THE EUROPEAN QUALITY AWARD (BUSINESS EXCELLENCE MODEL) ...................................... 61
FIGURE 2-6 DIFFERENCES BETWEEN NATIONAL AND ORGANISATIONAL CULTURE ........................................ 78
FIGURE 2-7 MODEL OF THE EFFECT OF CULTURE ON TQM APPROACH .......................................................... 80
FIGURE 2-8 MEDTRANEAN REGIONAL MAP .................................................................................................. 96
FIGURE 3-2 PRODUCTIVITY LINKAGES WITH TQM ...................................................................................... 132
FIGURE 4-1 ABILITY OF DATA ANALYSIS METHODOLOGY ............................................................................ 144
FIGURE 5-1 EXISTING MANAGEMENT STYLE: ISO VS. NON-ISO ORGANISATIONS ......................................... 167
FIGURE 5-2 PREFERRED MANAGEMENT STYLE WITHIN ISO VS. NON-ISO ORGANISATIONS .................... 168
FIGURE 6-1 THE PROCESS MODEL ................................................................................................................ 186
FIGURE 6-2 RELATIONSHIP BETWEEN ENABLERS AND RESULTS ............................................................. 186
FIGURE 6-3 ELEMENTS OF A PERFORMANCE MEASUREMENT FRAMEWORK ................................................ 187
FIGURE 6-4 CONCEPTUAL TQM SELF ASSESSMENT FRAMEWORK .............................................................. 190
FIGURE 6-5 NQA ATTRIBUTES EXPERIENTIAL LEVEL .................................................................................... 196
FIGURE 6-6 INTERACTION BETWEEN THE NQA ATTRIBUTES ........................................................................ 197
FIGURE 6-7 MATRIX SCORING GUIDE (BEM ATTRIBUTES MATURITY LEVEL INDEX) ......................................... 199
FIGURE 6-8 THE THREE NQA ATTRIBUTES AS VECTORS IN SPACE ................................................................ 199
FIGURE 6-9 RELATIONAL MATRIXES OF CSF & NQA VARIABLES .................................................................. 200
FIGURE 6-10 MATRIX SCORING GUIDE ......................................................................................................... 203
FIGURE 6-11 THE MATRIX SCORING GUIDE IN THE LIBYAN CASE .............................................................. 204
## LIST OF TABLES

### TABLE 2-1 QUALITY GURU'S FRAMEWORKS

<table>
<thead>
<tr>
<th>Table 2-1 Quality Guru's Frameworks</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>37</td>
</tr>
</tbody>
</table>

### TABLE 2-2 COMPARISON OF QUALITY GURU'S APPROACHES

<table>
<thead>
<tr>
<th>Table 2-2 Comparison of Quality Guru's Approaches</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>38</td>
</tr>
</tbody>
</table>

### TABLE 2-3 IQA BY UN REGION

<table>
<thead>
<tr>
<th>Table 2-3 IQA by UN Region</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>45</td>
</tr>
</tbody>
</table>

### TABLE 2-4 LINKAGE AND CONTRIBUTION OF ISO 9000:2000 TO EXCELLENCE MODELS

<table>
<thead>
<tr>
<th>Table 2-4 Linkage and Contribution of ISO 9000:2000 to Excellence Models</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>47</td>
</tr>
</tbody>
</table>

### TABLE 2-5 A SAMPLE OF TQM CSF WORLDWIDE

<table>
<thead>
<tr>
<th>Table 2-5 A Sample of TQM CSF Worldwide</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>52</td>
</tr>
</tbody>
</table>

### TABLE 2-6 MOST COMMONLY EXTRACTED FACTORS ACROSS THE COUNTRIES WORLDWIDE

<table>
<thead>
<tr>
<th>Table 2-6 Most Commonly Extracted Factors Across the Countries Worldwide</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>53</td>
</tr>
</tbody>
</table>

### TABLE 2-7 A SUMMARY OF THE COMPARATIVE FRAMEWORK OF MAJOR IQA'S

<table>
<thead>
<tr>
<th>Table 2-7 A Summary of the Comparative Framework of Major IQA's</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>58</td>
</tr>
</tbody>
</table>

### TABLE 2-8 COMPARISON OF THE THREE MAJOR IQA'S AND KING ABDULLAH II QUALITY AWARD

<table>
<thead>
<tr>
<th>Table 2-8 Comparison of the Three Major IQA's and King Abdullah II Quality Award</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>65</td>
</tr>
</tbody>
</table>

### TABLE 2-9 THE TECHNOLOGY ACHIEVEMENT INDEX

<table>
<thead>
<tr>
<th>Table 2-9 The Technology Achievement Index</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>72</td>
</tr>
</tbody>
</table>

### TABLE 2-10 ORGANISATIONAL CULTURE VS. MANAGEMENT STYLES

<table>
<thead>
<tr>
<th>Table 2-10 Organisational Culture vs. Management Styles</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>81</td>
</tr>
</tbody>
</table>

### TABLE 2-11 CULTURAL CHANGE

<table>
<thead>
<tr>
<th>Table 2-11 Cultural Change</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>82</td>
</tr>
</tbody>
</table>

### TABLE 2-12 CRITERIA FOR ASSESSMENT OF TQM NATIONAL DEVELOPMENT

<table>
<thead>
<tr>
<th>Table 2-12 Criteria for Assessment of TQM National Development</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>85</td>
</tr>
</tbody>
</table>

### TABLE 3-1 LIBYA PROFILE

<table>
<thead>
<tr>
<th>Table 3-1 Libya Profile</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
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<td>97</td>
</tr>
</tbody>
</table>

### TABLE 3-2 INDICATORS RELATED TO MODERNISATION IN LIBYA (2)

<table>
<thead>
<tr>
<th>Table 3-2 Indicators Related to Modernisation in Libya (2)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

### TABLE 3-3 DEVELOPMENT OF EDUCATION AND OTHER DEMOGRAPHICS

<table>
<thead>
<tr>
<th>Table 3-3 Development of Education and Other Demographics</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

### TABLE 3-4 ECONOMIC PROFILE

<table>
<thead>
<tr>
<th>Table 3-4 Economic Profile</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>101</td>
</tr>
</tbody>
</table>

### TABLE 3-5 LIBYA PRODUCTION OF MINERAL COMMODITIES

<table>
<thead>
<tr>
<th>Table 3-5 Libya Production of Mineral Commodities</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>102</td>
</tr>
</tbody>
</table>

### TABLE 3-6 LIBYA: BASIC ECONOMIC AND FINANCIAL INDICATORS, 2001

<table>
<thead>
<tr>
<th>Table 3-6 Libya: Basic Economic and Financial Indicators, 2001</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>104</td>
</tr>
</tbody>
</table>

### TABLE 3-7 AN EXAMPLE OF COMPANIES INCOME TAX RATES

<table>
<thead>
<tr>
<th>Table 3-7 An Example of Companies Income Tax Rates</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>105</td>
</tr>
</tbody>
</table>

### TABLE 3-8 CULTURAL DIMENSIONS FOR 10 COUNTRIES (0=LOW, 100=HIGH); SCORES: HOFSTEDE, (1980)

<table>
<thead>
<tr>
<th>Table 3-8 Cultural Dimensions for 10 Countries (0=Low, 100=High); Scores: Hofstede, (1980)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>119</td>
</tr>
</tbody>
</table>

### TABLE 3-9 ISO 9001:2000 CERTIFICATIONS IN THE MIDDLE EASTERN COUNTRIES 2004

<table>
<thead>
<tr>
<th>Table 3-9 ISO 9001:2000 Certifications in the Middle Eastern Countries 2004</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>123</td>
</tr>
</tbody>
</table>

### TABLE 4-1 COMPARISON BETWEEN DEDUCTIVE AND CONDUCTIVE APPROACHES

| Table 4-1 Comparison Between Deductive and Conductive Approaches | Page |
|                                                                | 135  |

### TABLE 4-2 COMPANY PROFILES

<table>
<thead>
<tr>
<th>Table 4-2 Company Profiles</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>151</td>
</tr>
</tbody>
</table>

### TABLE 5-1 SURVEYED LIBYAN ORGANIZATIONS' CHARACTERISTICS

<table>
<thead>
<tr>
<th>Table 5-1 Surveyed Libyan Organizations' Characteristics</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>154</td>
</tr>
</tbody>
</table>

### TABLE 5-2 LIBYAN TECHNOLOGY ACHIEVEMENT INDEX

<table>
<thead>
<tr>
<th>Table 5-2 Libyan Technology Achievement Index</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>161</td>
</tr>
</tbody>
</table>

### TABLE 5-3 HDI RANKING

<table>
<thead>
<tr>
<th>Table 5-3 HDI Ranking</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>162</td>
</tr>
</tbody>
</table>

### TABLE 5-4 CULTURE QUESTIONNAIRE RESULTS

<table>
<thead>
<tr>
<th>Table 5-4 Culture Questionnaire Results</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>167</td>
</tr>
</tbody>
</table>

### TABLE 5-5 THE TQM-CSF CONSTRUCTS INVESTIGATED UNDER THIS STUDY

| Table 5-5 The TQM-CSF Constructs Investigated Under This Study | Page |
|                                                             | 177  |

### TABLE 5-6 CLASSIFICATION OF TQM-CSF

<table>
<thead>
<tr>
<th>Table 5-6 Classification of TQM-CSF</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>179</td>
</tr>
</tbody>
</table>

### TABLE 6-1 A SUMMARY OF EVALUATION CRITERIA, ITEMS AND SUB-ITEMS OF THE MODEL

<table>
<thead>
<tr>
<th>Table 6-1 A Summary of Evaluation Criteria, Items and Sub-Items of the Model</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>189</td>
</tr>
</tbody>
</table>

### TABLE 6-2 COMPARING THE CRITERIA WEIGHTINGS OF THE MBNQA, EFQM AND THE LQA

<table>
<thead>
<tr>
<th>Table 6-2 Comparing the Criteria Weightings of the MBNQA, EFQM and the LQA</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>193</td>
</tr>
</tbody>
</table>

### TABLE 6-3 STRENGTHS AND SHORTCOMINGS OF MAJOR NQA-BASED FRAMEWORKS

| Table 6-3 Strengths and Shortcomings of Major NQA-Based Frameworks | Page |
|                                                                | 207  |

### TABLE 6-4 MAIN NQAs CHARACTERISTICS VS. THE PROPOSED FRAMEWORK

| Table 6-4 Main NQAs Characteristics vs. the Proposed Framework | Page |
|                                                             | 207  |
Chapter 1 Thesis Background

1.1 Introduction

The last two decades have witnessed a rapid increase in international competition. This competition has forced the developed countries to adopt new strategies. Under-developing countries, and particularly the Middle East and the North African countries, need to follow the foot steps of the leading nations if they want to achieve a competitive advantage and emerge as an effective economic power. Most governments and companies in the region are recognising the emergence of quality awareness, and that quality is crucial for developing a competitive advantage locally and internationally. This has led some Libyan companies over the last decade, to adopt and implement TQM initiatives, such as ISO 9000 quality management systems, while they are seeking guidance in assessing their organisational performance. National Quality Awards (NQA's) are one of the most common tools available today for assessing organisational performance, and means by which countries at a national level promote quality awareness.

Today, there are more than 77 quality and business excellence awards being implemented in at least 69 countries and economies worldwide (Calingo, 2002 and Asian Productivity Organisation APO, 2001). NQA's are based on the assessment of organisational performance to requirements of a model, comprising criteria for business excellence. Excellence models have their origins in the development of total quality management (TQM) perspectives (Dow, Samson and Ford, 1999). Similar affirmation has been made by Garvin, (1991) in his article: 'How the Baldrige Award Really Works' published in the Harvard Business Review. He concluded that the Baldrige Award is an ideal conceptualisation of TQM.

Libya does not have an NQA but its industry will need a guiding model or framework as quality management moves beyond the requirements of ISO 9000. Although the development of such a framework can take account of the considerable progress made in other countries in developing their NQA's, any Libyan model must take careful account of the precise nature of Libyan industry and Libyan culture. Almost all of the development of NQA's has taken place during the last 25 years or so, in Western-oriented societies.
Investigating the factors affecting the development of NQA (Europe, Japan and United States of America), when business and commercial activity was markedly different to the conditions that apply in Libya.

The primary objective of an NQA is to enable organisations to attain continuous performance improvement, maintain consistency, and achieve the desired level of business excellence. However, a major issue arises as to the application of the NQA's in different cultural and operational backgrounds, and, how to take account of additional complexities of social systems (Trompenaars, 1993).

Many developed countries have established their own national quality awards. However, developed and developing countries are at different stages of the quality movement. In the developed countries the quality movement has been under way since the end of the Second World War. As argued by Anschutz (1995), TQM has been a major factor in the planning and development of business in the USA, Europe and the Pacific Rim for at least 25 years. On the other hand, developing countries like Libya and the Arab countries have started the journey to quality in recent years in recognising TQM initiatives, and their effect on the development of organisations and management institutions (Zairi, 1996). This new tendency to appreciate TQM initiatives has followed the change which started to take place in their economic and trading policies to urge the new movement towards the free market system, as in the case of Dubai and Egypt (Yousif, 1996).

1.2 The research question

The research questions that arise from the above discussion, which this research study will try to address, are:

- Is Libya in need for a specific National Quality Award (NQA) model rather than using an existing one?
- If yes, what are the main attributes to be considered in developing an NQA for Libya as a developing country, and is there a process for selecting the appropriate elements for its development?
1.3 Justification and importance

The concept of TQM was developed in western oriented organisations, within an environment that is generally developed; however, little has been done in the developing countries. It has been confirmed by empirical research that there are major differences between the developed and developing countries in issue of politics, economics and social environment (Jaeger, 1990; Easterby-Smith, et al., 1995). Hofsted, (1980), and Laurent, (1986) affirmed that most management theories and practices are culture bound. This is because people are products of the family convictions, religious traditions and forms of education and beliefs that shape their behaviours and expectations. Muna, (1980) attempted to define the main characteristics of management organisation and behaviour in Arab countries. Others have studied Arab management and behaviour within specific national cultures (Suleiman, 1984). In most of these studies it was reported that contextual factors such as politics and culture played a role, such as the differences found between the Arab countries of North Africa and those of the Middle East.

The preliminary review of the literature, as well as structured interviews, and regional surveys conducted for this study, indicate that this will be the first study ever carried out in Libya and the entire region of North Africa, with respect to investigating the attributes that affect in developing a tailor made NQA for Libyan industry. This research study will address certain important issues such as the local beliefs and culture, and the specific socio-political and socio-economic development of Libyan organisations. In addition, this research is very important and vital to enable the Libyan economy and Libyan organisations to develop and adopt an NQA that would help in assessing Libyan organisations and improving their efficiency, productivity, and effectiveness, and therefore boosting the economy and catching up with the competition in the rest of the world. In summary, the distinctive thing about this research is its originality and foreseen contribution to knowledge. The originality and contribution to knowledge is found in the linkage of the CSF with the three main NQA attributes (Culture, Socio-Economic development and TQM maturity).

Reviewing most of the NQA's (chapter 2 of this study) revealed that all are structured from a set of criteria based on TQM concepts. These criteria encompass all the essential components of a successful and effective TQM. Comparative studies suggest that, in the
Investigating the factors affecting the development of NQA

development of NQA models for the developing countries, the economic structure, social characteristics, and quality maturity level of the country should be taken into account (Kay C. Tan, et al. 2003). This is affirmed by Madu (1997) who recommended that culture and climate variations be investigated in different regions, to explore and identify any gaps between those in place and those required for TQM implementation. Newman & Nollen, (1996) have reported that differences in socio-political and socio-economic factors would hinder the cross-cultural transferability and applicability of TQM concepts, principles, and practices. Roney, (1997) supports this argument with an example, which documents that cultural, socio-political, and socio-economic barriers hampered the implementation of TQM from a US based company to its facility in Poland. It has been confirmed by empirical research that there are major differences between the developed and developing countries in issue of politics, economics and social environment (Jaeger, 1990; and Easterby-Smith, et al., 1995).

This research will focus on investigating the main attributes that affect the development of an NQA and will devise a tailor made excellence model, suitable for an NQA for the Libyan Industry. The aspects and profiles of the country politics, economic, society, technology and environment are illustrated, as well as their significance. The elements that are considered as constituents of an NQA model are also investigated in this research study. The following outlines illustrate the preliminary research results and ideas that are considered as main attributes for the development of an NQA:

- Economic and social development of a country;
- National and corporate culture;
- Quality maturity level.

The dissertation will provide an overview of the aspects of business performance in Libya, including quality. Libyan cultural profiles are investigated, which affect directly and highly the quality performance, corporate strategies, management and employers performance, and more specifically, the core competence of the organisation. The research study will lead to developing a generic national quality award model tailor-made for Libyan industry.

In addition, the study will add to the promotion of quality awareness and quality management concepts in particular by revealing a connection between variables
Investigating the factors affecting the development of NQA contributing to the quality, efficiency and business performance. At the same time the study will establish and clarify the business excellence concepts and assist management to effectively determine a strategy for implementing a reliable Total Quality Management (TQM) approach based on business excellence principals, which, will assist in improving competitiveness.

1.4 The problem

Researchers have indicated that most of the TQM literature is based on personal experiences and anecdotal evidence (Black & Porter, 1996; Rao et al., 1999). However, lack of empirical research may be attributed to some factors which include: insufficiency of a theoretical base that supports research on TQM; TQM is relatively a new philosophy outside of Japan and the origin of TQM lies outside the academic world (Thiagarajan et al., 2001).

Literature revealed that more than 56 US state and local awards and dozens of international awards have been closely modelled after the Baldrige Award (Ettorre, 1996 and DeB aylo, 1999). Notable international Awards heavily influenced by the Baldrige Award include the European Quality Award and the Japanese Quality Award. Similarly, some developing countries, such as Egypt, Jordon, Mexico and Brazil, have established their own NQA’s based on the Baldrige Award, but not in its entirety. Similarly, in the case of the European Business Excellence Model (BEM) since its establishment in 1991 it has become increasingly well recognised amongst European organisations as a diagnostic tool, and many countries in Europe have based their national quality awards on the BEM framework and criteria (Porter et al., 1998). However, many traditional national quality organisations were critical about the EFQM framework and modified the model to meet their specific needs (Hardjono & Hes, 1996).

This wide recognition accorded to these “Baldrige clones” attests to its strength and versatility worldwide (Townsend and Gebhardt, 1996). Even though, even as the Baldrige criteria and framework are widely accepted in practice, there is little theoretical and empirical evidence of their validity (Ford and Evans, 2000). Moreover, adopting an existing model is unlikely to be successful, for a developing country due to the differences found between the developed and developing countries in issue of politics, economics and social
Investigating the factors affecting the development of NQA

environment (Jaeger, 1990; and Easterby-Smith, et al., 1995). For example Dubai, adopted first the Malcolm Baldrige and found out that it was highly beyond their TQM maturity, then moved to the EFQM without any modifications, and now, they are experiencing some problems and thinking about down scaling the model to suit their specific circumstances. This agrees with the argument that was raised by Ghobadian and Gallear, (1996) who suggest that large organisation praxis may be scaled down and applied to smaller and less complex organisations.

In addition, literature showed that TQM approaches are not internationally transferable. The contingency theory perspective states that the principles and associated practices of TQM should be matched to situational requirements (Sitkin, Sutcliffe and Schroeder 1994). Generally, there seems to be acknowledged limitations of the findings of some of the earlier studies in their applicability across national boundaries (Dawson, 1994; Rao et al., 1999)

Moreover, the reviewed literature also indicated that the three main factors that have an influence on the likelihood of success of an NQA within a specific country can be expressed as Socio-political and Economic development of the country, Culture, and Quality (TQM) Maturity (Tan, et, al, 2003). TQM efforts often fail and some managers intuitively recognise some of the current approaches as organisationally and politically naïve (Spencer, 1994 and Dean & Brown, 1994).

In an attempt to verify the applicability of critical success factors (CSF) for the successful implementation of TQM on worldwide bases, a study initiated by Youssef and Zairi, (1995) has identified 18 critical success factors. The original list consisted of 22 critical factors based on the MBNQA criteria and the teachings of the three quality gurus (such as Deming and Juran). Reviewing the established NQA models, and comparing them with the TQM critical success factors, identified that the models are all based on TQM CSF's. However, there are only 9 criteria (CSF) for all the reviewed models, but different models have different permutations of criteria, depending on the circumstances / priorities / needs of the country. No single model contains all of the 9 criteria (model' criteria vary from 7 to 9) (Tan, et, al, 2003).
On the basis of the author's experience as a consultant in Libya, there are many reasons that triggered the author for selecting this project, which include:

- New policies recently adopted by the Libyan government (open market strategy);
- The increased competition due to the new policies;
- Organisations are preoccupied with conventional management;
- Government pressure on Libyan managers;
- Performance of Libyan organisations is assessed against narrow goals instead of wider goals, and not much emphasis is placed on measuring organisational performance.

Based on the above discussion, empirically investigating the factors affecting the development of an NQA for the successful implementation of TQM within the developing countries such as Libya is essential. As it was indicated by Thiagarajan et al, (2001) that there is a dearth of theories and generic models of TQM implementation that are empirically based and validated.

In summary, business excellence within the Middle East countries is widely presented as providing significant benefits, but there is no clear consensus regarding the exact nature of excellence within their organisations, or approaches for its implementation. Many implementations to date have followed a trial and error approach such as the case of Dubai. To achieve the potential benefits of excellence within the Middle East countries, practitioners require practical and detailed guidance for developing an NQA model that meets their local industry circumstances. The absence of a practical and detailed model to follow is an issue of concern to those interested in the pursuit of excellence.

To allow Libyan organisations to achieve the full benefits of the excellence models, this research was concerned with:

- structuring the approach taken to the development and implementation of an excellence model within Libya such that companies can proceed through it in a controlled manner;
- guiding the use of excellence techniques and the associated literature explaining the techniques;
- providing an understanding of the underlying principles of excellence to the Libyan organisations, and its development and implementation; and
• ensuring that the wide range of changes involved in implementing the excellence models are adequately addressed.

In order to recommend any form of action to improve the Libyan Industry’s ability to contribute strategically to the business, it was necessary to consider what are the key initiatives that can be mobilised to effectively pursue the operations performance objectives to provide the business with a sustainable advantage over the competition.

Also, what was required was the means, or the process, which could make explicit what needs to be done at the operations level in order to achieve performance excellence.

It then becomes necessary to have a process which determines how much management emphasis and resources should be placed on programmes or key initiatives that the Libyan decision makers can use in order for the organisation to achieve business excellence.

1.5 Research aims, objectives and scope

This study examines the need for a Libyan Industry performance assessment model, investigates the attributes affecting the development of NQA and accordingly suggests an assessment framework linked to organisational performance.

The intention was to extend previous work through the development of a process that could identify the particular initiatives within Libyan organisations in which a business needs to be strong if it wishes to be an excellent business performer. Also, to identify what are the main business activities that can effectively shape and promote these initiatives, in order to support the corporate objectives, and to show how these main activities are linked to the strategic objectives.

1.5.1 Aims

➢ The main aim is to investigate the factors affecting the development of a National Quality Award for Libya.
Investigating the factors affecting the development of NQA

1.5.2 The scope of the research

This research project was initiated for the purpose of developing an excellence model to be used as the basis for a Libyan Quality Award (LQA), for measuring organisational performance and promoting quality awareness across all sectors of the economy in Libya. Review of the literature of some of the newly developed BEM's showed that, most of them are taking up the Deming Prize (DP), European Foundation for Quality Management (EFQM) and Malcolm Baldrige National Quality Award (MBNQA). As these models are based on the quality guru's work and or extensive research and analysis of the local and international business environment in consideration, therefore, the scope of developing the model will include these factors that are found to affect how the criteria framework of a BEM is initially set up and subsequently modified: (economic and social development of a country, national culture, and quality maturity level) as per Figure 1-1 next.

![Venn diagram representing the NQA attributes](image)

Figure 1-1 The Venn diagram representing the NQA attributes

Therefore, the research approach will centre over the following:-

- Identify the attributes that affect the development of an NQA:
  - Quality Maturity Level
  - Culture
  - Socio-Economic Development

- Identify the country's relevant TQM-CSF's as the constituents of an NQA,
- Link the CSF's to the three NQA attributes,
- Analyse and discuss empirical illustrations and establish the position of Libya, and
- Present the final refined model.
1.6 Methodology

The following flowchart Figure 1-2 presents the methodology used for this research study:

- **Literature review:** TQM, TQM-CSF, NQA, factors affecting the development of an NQA.
- **Is Libya in need for NQA?** (Pilot study)
- **Empirical investigations of the factors affecting the development of an NQA within the Libyan context** (Questionnaire + Interviews)
- **Socio-economic** (Identification of Libyan organisations' level)
- **Culture differences** (Identification of Libyan organisations' level)
- **TOM maturity level** (Identification of Libyan organisations' level)
- **Identification of critical success factors (CSF) for Libya** (Questionnaire)
- **Development of conceptual NQA model**
- **Is it appropriate for Libya at present?**
- **Final refined NQA model**
- **Discussion and conclusion:** Implication to research and practice, and direction for future research

**Figure 1-2 Research Methodology flowchart**
1.7 Thesis outlines

The thesis comprises of 7 chapters as follows:

Chapter One - Introduction: will define the problem addressed by the research. In the same time it will establish the aims and objectives as well as the scope of this research study through the following sections:

- Introducing background of the research.
- Establish how the research problem has arisen.
- Setting clear aims, objectives and scope of the research.
- Describe research methodology.

Chapter two – Literature review, will review the literature used in this research study, including aspects of Total Quality Management (TQM), quality initiatives, TQM critical success factors (CSF). Additionally, National Quality Awards (NQA's) and their applicability in the developing countries, and factors affecting their development, are revised. The chapter will also analyse the literature and present the research gap.

Chapter three – Background of Libya: this chapter will provide the National Environmental Conditions within Libya focusing on techno/political/social/economic; cultural and TQM maturity levels in the country. Finally; it will present the pilot study that took place at an early stage of this research work, which was conducted for the purpose of initiating this research work, to state whether Libya is in need for a specific NQA model.

Chapter four – Methodology: will describe the methodology used and the limitations of this research work, and aligns theory with actual methodology design.

Chapter five – The major purpose of this chapter is to present, analyse and critique the results that were obtained from the different investigation stages of this research work. This should provide the basis for the NQA formulation for Libya. The chapter will be divided into three main sections: The preliminary questionnaire analysis (pilot survey), the analysis of the factors affecting the development of NQA's (Libyan National Environmental Conditions) and the analysis of the TQM - Critical Success Factors within the Libyan Industrial context.
Chapter six - The main objective of this chapter is to develop a generic NQA for Libya, which will consist of four main phases. The first phase is the introduction and identification of the conceptual NQA framework tailor made for Libya along with its elements (major criteria and sub-criteria). This model is based on the results/findings taken from previous chapters 2, 3, 4, and 5. The second phase provides the linkages between the CSF's and the three main NQA attributes (TQM maturity level, culture and tech/socio/political) that are found to affect the development of an NQA. The third phase is to develop an NQA process development model using a decision scoring matrix by applying the three main NQA attributes identified in the literature. The final phase will focus on fine tuning the NQA model employing the previous phase findings.

Chapter Seven – This chapter provides the summary of thesis, along with clear limitations of the work, conclusions and directions for future work.
Chapter 2 Literature Review

2.1 Chapter outlines

The purpose of this chapter is to present a summary of what academic literature reveals about developing Total Quality Management (TQM) assessment frameworks leading to National Quality Awards (NQA) in developing countries. The literature review consists of the following five research domains according to the research approach and objectives: (1) TQM development; (2) Concepts of TQM; (3) TQM Critical Success Factors (CSF); (4) TQM Assessment Frameworks (AF); (5) Factors affecting NQA development.

The extent of TQM related research makes a comprehensive review impractical, and therefore, the emphasis here is placed on academic studies published in highly regarded research journals. However, most of the studies such as thesis and articles which are considered to be of relevance to the development of TQM assessment frameworks have been identified, and a detailed extract of the contribution of each article to this research work is brought forward in this chapter as part of theory development. The review of each of the above five research domains has been categorised to four main themes; introduction, theory, application and critique.

2.2 TQM development

2.2.1 Introduction

TQM is a humanistic business approach that focuses on improving the organisation's effectiveness, efficiency and responsiveness to customers' needs by actively involving people in process improvement activities. TQM has been poorly defined and it is a very complex phenomenon. However, it is regarded as a systematic way of guaranteeing the organised activities happen the way they are planned stressing the mutual co-operation of everyone in an organisation and associated business processes to produce products and services that meet the needs and expectations of customers (Doyle, 1992). The British Standards BS7850, have given an official definition to TQM as a: "Management philosophy and company practices that aim to harness the human and material resources of an organisation in the most effective way to achieve the objectives of the organisation."
As stated by McKechnie and Arnold, (1994): "Rooted in systems theory, TQM invokes the inescapable inter-relationship of all parts of the organisation ... TQM stresses the importance of cross-functional relationships". The operative concept of TQM is "Continuous Process Improvement". It is an integrated management philosophy and set of practices that emphasise among continuous improvement, meeting customer requirements, reducing rework, long-range thinking, increased employee involvement and teamwork, process redesign, competitive benchmarking, team-based problem-solving, constant measurement of results, and closer relationships with suppliers (Powell, 1995, Dale, 1999 and Van Schalkwyk, 1998). TQM is the culture of an organisation committed to customer satisfaction through continuous improvement. This culture varies both from one country to another and between different industries, but has certain essential principles which can be implemented to secure greater market share, increased profits and reduced costs (Kanji, 1997).

According to (Dale, 1999) the evolution of quality thinking can be described in four phases: inspection, quality control, quality assurance, and TQM as shown above in Figure 2-1. The four levels in the evolution of TQM.

**Figure 2-1 The four levels in the evolution of TQM**

Source: Dale (1999)
TQM concepts evolved from Japanese industry practices, heavily influenced by Deming and Juran, who travelled from the US to Japan to help in reconstructing the Japanese industry after World War II. It is considered as one of the most important management innovations of the 20th century and has probably had more influence on contemporary management practices than any other management movement. It has been adopted by organisations as the means of understanding and satisfying the needs and expectations of their customers and taking costs out of their operations (Dale, 1999).

![Figure 2-2 Evolution of Total Quality Management (TQM)](image)

In its early days, the quality concept was associated with the manufacturing sector only and it was based on statistical control of manufacturing processes, e.g., out of the Crisis (Deming, 1982); Quality is Free (Crosby, 1979); Introduction to Quality Engineering: Designing Quality into Products and Processes (Taguchi, 1986). However, the concept of TQM has evolved rapidly in recent years, involving the design and operation of systems and technology and fostering a commitment to performance improvements (Dale, 1999), increasingly applied to the general management of an organisation.

The early history of quality and efforts for adopting quality improvement initiatives started as early as the industrial age; as per Figure 2-2 above. Advanced companies today are in
a post-ISO-era, in search of business excellence to meet the challenges of the globalisation in all market segments.

Reviewing the Literature indicated that the literature is very much anecdotal and the lack of rigorous empirical research to date have meant that neither the advocates nor the sceptics can point to conclusive evidence. As Powell, (1995) expressed it: "The researchers know of no other management concept or practice that has ever received so much practitioner attention, with so little academic study, as TQM." Dale et al., (2001), asserted that TQM is still in its early stages of theory development and therefore academic research relating to TQM is relatively lacking. Early TQM research focused on descriptions of practice rather than on theory development that is of use to managers and scholars (Klimoski R, 1994; Sitkin, and R.C, 1994). While some scholarly studies have integrated TQM with current management theories of innovation diffusion (Westphal, Gulati and Shortell, 1997); organisational learning (Sitkin, Sutcliffe and Schroeder, 1994and Garvin, 1993) or resource-based strategy Powell, (1995). Whereas Dean and Bowen, (1994) observed a further need for TQM integration with the management literature on strategy implementation, information processing, customer satisfaction and process improvement.

On the other hand, the interest of industry and academics in TQM has revived. In the mid 1990's it has developed an established position in the top general management journals (Belohlav, 1993; Dean and Bowen, 1994; Powell, 1995; Hackman and Wageman, 1995; Reed, Lemak, 1996; Westphal, Gulati and Shortell, 1997; and Douglas and Judge, 2001). As such, many respected mainstream organisational research journals included TQM related studies. For example, The Academy of Management Review (March 1994) and Decision Sciences (Vol. 27) contains articles that focused solely on TQM. As a result, there is an extensive and growing body of knowledge about the structure, implementation and impact of quality management practices. However, most of this knowledge is based on cases from leading organisations in the developed world from a western industrial perspective. On the other hand, very little has been done in the developing countries and in particular within the Middle Eastern and/or North African context. Therefore, it is intended here to contribute to the knowledge by filling this gap through an analytical approach for identifying boundary conditions for successful TQM programs within the North African region. This will include empirical research based on the Libyan industrial context.
2.2.2 Origins of TQM and trend analysis

Authors such as (Juran, 1996 and Garvin, 1988) have provided a good overview on the history and the future of quality. Similarly, Cole, (1998, 1999) focuses on the diffusion of TQM in the USA. Additionally, Sterett and Decarlo, (1990) give a detailed description of the introduction of the Malcolm Baldrige National Quality Award, and the most significant changes throughout the evolution of the quality award criteria as described in (Herz, 1997).

It is agreed by most researchers that the quality movement started in Japan and its origin can be traced to 1949, when The Union of Japanese Scientists and Engineers (JUSE) formed a committee of scholars, engineers, and government officials devoted to improving Japanese productivity and quality of life. (Colé, 1998 and Powell, 1995). However, before the concepts and ideas of TQM were formalised, much work had taken place over the decades to reach this stage. As described by Garvin (1988), Wiele, (1998) and Dale (1999), quality concepts evolved over four phases - inspection, quality control, quality assurance, and TQM.

In summary, historical analysis of the origins of TQM provide us with a deeper understanding of the original scope and context in which the applications of quality control and management were applied and how they relate to contemporary TQM discipline. The development of most TQM approaches, values and principles was in a repetitive manufacturing environment, where it was applied in a more focused manner to control technical oriented production processes. This raises a question whether those values and ideas are still applicable in the contemporary applications of TQM or not?

2.2.2.1 Application

There is extensive research evidence that demonstrates the benefits from TQM. Dale, (1999) argues that TQM is adopted by organisations as the means of understanding and satisfying the needs and expectations of their customers and taking costs out of their operations. Again Anschutz, (1995) argues that it has been a major factor in the planning and development of business in the USA, Europe and the Pacific Rim for at least 25 years. On the other hand, developing countries like Libya and the Arab countries have started the journey to quality in recent years in recognising TQM initiatives, and their effect on the development of organisations and management institutions (Zairi, 1996). This new trend to
appreciate TQM initiatives has followed the change which started to take place in their economic and trading policies, to urge the new movement towards the free market system, as in the case of Dubai and Egypt (Yousif, 1996).

As we move into the 21st century, TQM has developed in many countries into holistic frameworks, aimed at helping organisations achieve excellent performance, particularly in customer and business results. There are over 60 countries worldwide which have developed their own Business Excellence Models (BEMs) for assessing their TQM maturity level. These frameworks are based on assessment of organisational performance to the requirements of a model, comprising criteria for business excellence. Excellence models have their origins in the development of TQM. Libya does not have a BEM, but its industry will need a guiding model or framework as quality management moves beyond the requirements of ISO 9000. Although the development of such a framework can take account of the considerable progress made in other countries in developing their National Quality Awards (NQA’s) any Libyan model must take careful account of the precise nature of Libyan industrial culture. Almost all of the development of NQA’s has taken place during the last 25 years or so in Western-oriented societies (Europe, Japan and United States of America) when business and commercial activity was markedly different to the conditions that apply in Libya.

It is essential to show that the nature of “Total Quality” or “Excellence” approach, the two words are used indiscriminately in the literature and no differences were found and it is more a question of “fashion” than a real evolution in the approach. This same goes for the usage of many names of business excellence models in the literature such as; Business Excellence Models (BEM/BE), National Quality Awards (NQA), Performance Measurement Frameworks/Indicators (PM/PMI), Value-Creation models, and TQM Self-assessment Frameworks, etc.

The primary objective of a NQA is to enable organisations to attain continuous performance improvement, maintain consistency, and achieve the desired level of business excellence. However, a major issue arises as to the application of the NQA in different cultural and operational backgrounds and any additional complexities of social systems (Trompenaars, 1993).
The above development of the discipline demonstrates how TQM has evolved from being narrowly focused on statistical process control to encompass a variety of technical and behavioural methods for improving organisational performance. Whereas statistical process control is a precise set of quality improvement techniques, TQM extends these methods to all functions and management levels of an organisation (Grant et al., 1994). The change of scope moved quality management to a completely new arena: a holistic approach for the general management of an organisation. In the late 1990s, the emphasis on the use of original quality tools faded away, and TQM evolved to a wide set of management principles, practices and approaches. The researcher sees that the major problems arising from the expansion of the scope of TQM are how to define quality in a larger context and how to take account of additional complexities of managing social systems.

During the late 1990s, additional developments took place. Early analysis of TQM identified the role of quality in strategy as one of the main differences between the TQ and management theory perspectives (Dean and Bowen, 1994; Cole, 2000). This difference was evident in the early years of the American NQA-Malcolm Baldrige National Quality Award, but the modification of the award criteria in 1995 changed this limited scope of quality award criteria in the area of strategic planning. The strategy development process was given a wider scope and included items beyond planning for quality. If we consider NQA's to be a holistic management discipline, this development is well justified from a management theory standpoint. Quality is a potentially important source of competitive advantage, but it is not the only one (Dean and Bowen, 1994 and Cole, 2000). However, this development further separates TQM from its original application.

The foundation and core concepts of total quality management are still based on the same principles that were initially used to control the manufacturing process. The scope of TQM has radically expanded to include all management processes of an organisation. However, in this process, the foundation and core concepts of quality management have not been fully analysed and re-evaluated. Research done by Cameron and Sine, (1999) is the only attempt to identify various cultural assumptions related to the development of the discipline from quality control to total quality management.
2.3 The salient concepts of TQM

2.3.1 Introduction

Deming, (1986) and Juran, (1989), both expressed a strong agreement that quality must be a fundamental business strategy for a company to survive and grow in a competitive environment. Implementing TQM creates an organisational culture that fosters continuous improvements in everything by everyone at all times, and requires changes in organisational processes, strategic priorities, individual belief, attitudes and behaviours (Dale, 1999). However, management officials might see the new culture as a threat that might reduce their power and authority, and hence oppose such change (Barnett, 1991).

2.3.2 Continuous improvement initiatives

Since the World War II, various continuous improvement initiatives were developed under different names driven by advances in technology. The tools, concepts and methodologies for transformation, the degree of innovation, the naming conventions and the manner in which they are packaged and presented, will continue to vary but the need will not decline. Terms such as Total Quality Management (TQM), Business Process Reengineering (BPR), Benchmarking (BM), Total Productive Maintenance (TPM), Six Sigma, Kaizen, Quality Control Circles (QCCs), Lean Manufacture, Just in Time (JIT), Investors in People (IIP), Management of Change, Empowerment, etc., all represent a family of change methods that transform work processes and organisations in ways that range from incremental to radical.

All the above initiatives intend to transform the organisation in order to improve its performance effectiveness and efficiency. However, the question that arises is which one to choose and or to start with. Very broadly, the choice depends on organisational maturity. Typically, organisations start with basic quality management tools and techniques such as 5S (Ho and Fung, 1994), continue with implementation of Total Productive Maintenance philosophy (Hirano, 1996), then move towards implementation of ISO 9000 standard series ISO 9001:2000 and, furthermore, aim towards maturity models such as MBNQA or European Foundation for Quality Management (EFQM) Business Excellence Models (Hakes, 1994). Each step in this journey presents a further step in the maturity of a management system that is based on customer focus and customer satisfaction.
2.3.3 TQM tools and techniques

Quality improvement process requires to be continually monitored and properly measured. Management provides the most suitable environment and techniques for the workforce, through proper education and training, in order for them to be able to use the newly developed tools and techniques for the improvement. Many systems and tools have been developed to support the TQM process. A few are sophisticated statistical processes demanding specialised knowledge. However, most are easy-to-use techniques, available to every employee, to assist objective communication about their day-to-day work issues. The one common thread is that all tools encourage collaboration and teamwork between management and workers. They can be broadly categorised as: (a) Measurement; (b) Process Management; and (c) Problem Solving & Corrective Action.

As part of a quality improvement strategy, fast-track projects, quality circles and cross-functional action teams apply the technique to achieve a breakthrough in relation to variation in processes. As suggested by Dale and Cooper, (1992), depending on the type of the process, there is a range of different analytical and quality improvement techniques such as: Flowcharts, Matrices, Fishbone Diagrams, Process Models, Focus Groups, Audits, Customer Surveys (Internal/External), Control Plans, Process Capability Studies and control charts. However, improving process efficiency and eliminating variation could be achieved by means such as: Statistical Tools and the 7 new quality tools, Design of Experiments (DOE), Continuous Improvements (Kaizen), Education and training, Benchmarking, and Total Productive Maintenance (TPM).

These tools help to expand the scope of company wide quality efforts; set up and manage the systems necessary to resolve major quality problems; anticipate potential quality problems and actually eliminate defects before they happen.
2.3.4 TQM frameworks

2.3.4.1 Quality gurus based

Efforts for adopting quality improvement initiatives by both manufacturing and service industry evolved in the 1960's when organisations started to implement quality control techniques and later quality assurance programmes. However, literature revealed that all these efforts failed to attain quality improvements that meet continuous demands of customer requirements. As a result the TQM approach has advanced to overcome such problem.

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<tbody>
<tr>
<td>1) Do It Right the First Time</td>
<td>I. The System of Profound Knowledge</td>
<td>The Spiral of Progress in Quality:</td>
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<tr>
<td>2) Zero Defects and Zero Defects Day</td>
<td>II. The Plan-Do-Check-Act Cycle</td>
<td>(1) Identifying the activities that could meet the company goals of fitness for use.</td>
</tr>
<tr>
<td>3) The Four Absolutes of Quality:</td>
<td>III. Prevention by Process Improvement</td>
<td>(2) Assigning the activities to the various departments and organisations around the spiral.</td>
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<tr>
<td>- Quality is conformance to the requirements</td>
<td>IV. The Chain Reaction for Quality Improvement</td>
<td>(3) Providing the facilities and tools needed to conduct these activities.</td>
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<tr>
<td>- The system of quality is prevention</td>
<td>V. Common Cause and Special Cause Variation</td>
<td>(4) Conducting the assigned activities within the designated departments.</td>
</tr>
<tr>
<td>- The performance standard is Zero Defects (Do it right the first time):</td>
<td>VI. The Deadly and Dreadful Diseases.</td>
<td>(5) Ensuring that these activities are properly carried out.</td>
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<tr>
<td>- The measurement of quality is the price of non-conformance</td>
<td>VII. The 1 14 points:</td>
<td>(6) Co-ordinating the departmental activities.</td>
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<td>4) The Prevention Process;</td>
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<td>The Breakthrough Sequence:</td>
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<td>5) The Quality Vaccine:</td>
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<td>- Policy making.</td>
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<td>- determination</td>
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<td>- Setting objectives for breakthrough.</td>
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<td>- education</td>
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<td>- Breakthrough in attitudes.</td>
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<td>- implementation</td>
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<td>- Use of Pareto principle.</td>
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<td>- Comprehension</td>
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<td>- Creation of diagnostic arm.</td>
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<td>- Commitment</td>
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<td>- Diagnosis.</td>
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<td>- Competence</td>
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<td>- Breakthrough in cultural pattern.</td>
</tr>
<tr>
<td>- Communication</td>
<td></td>
<td>- Transition to the new level.</td>
</tr>
<tr>
<td>- Correction</td>
<td></td>
<td>- The Project-by-Project Approach.</td>
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<tr>
<td>- Continuance</td>
<td></td>
<td>- The principle of the Vital Few and Trivial Many.</td>
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</tbody>
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The Juran Trilogy:
- planning,
- quality control,
- quality improvement

Table 2-1 Quality Guru's Frameworks

However, the TQM definition did not develop as a result of academic work and systematic analysis of existing management and organisational theory (Grandzol, 1997). It is based on the concepts of leading visionaries whose work has set the corner stone for most of the
contemporary TQM frameworks and practices, like Deming, Ishikawa, Juran and Crosby. The work of some of these experts, whose names have been linked to TQM since its start, is briefly introduced (Pike & Banes, 1994). Table 2-1 above provides the Quality Guru's Frameworks, whereas, Table 2-2 provides a comparison between Quality Guru's Approaches.

<table>
<thead>
<tr>
<th>Crosby</th>
<th>Deming</th>
<th>Juran</th>
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<tbody>
<tr>
<td>transforming the culture of the organisation.</td>
<td>change of management style.</td>
<td>problems are thought of as projects,</td>
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<tr>
<td>route for attaining management commitment.</td>
<td>organisations as systems.</td>
<td>project-by-project approach</td>
</tr>
<tr>
<td>individual commitment to quality at each level of the organisation.</td>
<td>use of statistical thinking to understand how systems function.</td>
<td>all improvements can be made project by project.</td>
</tr>
<tr>
<td>each organisation must create its own quality improvement process plan.</td>
<td>The application of the PDCA cycle.</td>
<td>annual formation of teams to analyse problems and find solutions to them.</td>
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<tr>
<td>effective in transmitting the need to change attitudes and behaviours.</td>
<td>quantitative methods to analysis and reduction of variation in all work processes.</td>
<td>upper management heavily involved.</td>
</tr>
<tr>
<td>emphasises measuring the cost of doing things wrong versus the cost of doing things right the first time.</td>
<td>stresses that management and leadership.</td>
<td>use of graphics and statistical methods.</td>
</tr>
<tr>
<td>does not emphasise a statistical basis for reduction of variation.</td>
<td>changing the attitudes of top leadership.</td>
<td>systems approach to quality through the spiral of progress,</td>
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<tr>
<td></td>
<td>emphasises leadership responsibilities.</td>
<td>links all of the functions necessary to launch a product or service.</td>
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<td></td>
<td>provides leaders with the 14 Points.</td>
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</table>

| Table 2-2 Comparison of Quality Guru's Approaches

In conclusion, the “Quality Gurus”’ work showed the development of quality initiatives from hard to soft management discipline. However, numerous attempts have been made to define the TQM discipline and derive a theory based on their work. Tamimi, (1993) investigated developing an instrument for operationalising and testing Deming's theory of TQM. Tamimi, (1993) indicated that both Deming and Crosby recognised the role of top management as a critical factor to any successful quality planning environment, yet few have attempted to show how to measure it or implement it. He added that although Deming's philosophy has been considered by many as the basic guidelines to implementing TQM, there is little guidance in the literature on how to measure or implement Deming's practices.

Hackman and Wageman, (1995) provide a conceptual analysis of total quality management (TQM) that examines whether there really is such a thing as TQM or whether it has become mainly a banner under which pot-pourri of essentially unrelated
organisational changes are undertaken. The study concluded that TQM reflected the degree to which the versions of TQM promulgated by its founders (gurus) and observed in organisational practice share a common set of assumptions and prescriptions. They, however, found that TQM did not clearly distinguish itself from contemporary organisational practices. On the other hand TQM practices are found to be prescriptive and managerial in nature; they do not provide us with a theoretically or empirically valid framework for TQM.

A common factor among most approaches used to define TQM is the lack of recognition of the different conceptual levels inherent in the discipline. This deficiency is addressed by Hackman and Wageman's, (1995) multilevel conceptual framework, which consists of assumptions, change principles and practices. Their analysis provides us with some indication as to why (and which) quality management practices are successful in certain situations. On the other hand, Dean and Bowen, (1994) introduced a three-level conceptual framework: principles, practices and techniques. Their research is broadened with specific emphasis placed on connecting TQM with research and concepts in the field of organisational culture.

2.3.4.2 Contemporary frameworks

While most management researchers agree that TQM is one of the most significant management inventions of the century, the real influence for contemporary management practices comes from widely spread practical applications of TQM. Two major frameworks, the ISO 9000 family of quality standards and the Quality Awards, are generally accepted as models for Total Quality Management.

However, others may question whether the IQA's and ISO 9000 series are contemporary models of TQM. Juran, (1996) states that the confusion about the definition of TQM “has been reduced by the publication of the Malcolm Baldrige' criteria...” By the early 1990s, this wide exposure had made the MBNQA criteria the most widely accepted definition of what is included in TQM. Again, several studies support the conclusion that IQA's are an implementation of TQM discipline. ISO 9000:94 based quality systems have traditionally taken only a limited approach to TQM, focusing mainly on ensuring the quality of the sales-delivery process, but the recent developments of ISO 9000:2000 quality management
standards are consistent with the philosophy and practices of quality awards, (Garwin, 1988 and Conti, 1999).

These two frameworks give a mature, well-defined, and widely accepted definition of Total Quality Management. Studies indicate that TQM did not reach an integrated set of commonly accepted practices before there was general acceptance of the ISO 9001 as quality management systems and quality award models (Wiele, 1998 & 2000). They provide a consistent and comprehensive definition of total quality management, in comparison to the work of individual quality gurus.

2.3.4.3 ISO 9001 standard

Over the past fifteen years, corporate concerns about quality, environment, health and safety, and care for employees have led to the development of well recognised national and international standards against which management systems are developed and evaluated. Such standards include the well known ISO 9000, ISO 14000, BS 8800, and OHAS 18001.

Figure 2-3 The ISO 9000:2000 model

Source: ISO 9000:2000 Standards
The ISO 9000 standards were developed with the primary goal of being used in international trade (Wiele, 1998). The core objectives in creating these standards were to break down trade barriers and to rationalise business-to-business relationships (Conti, 1999). This process has led to situations where many organisations require their supplier to be certified. This is the case of most of the Libyan organisations that sought ISO 9000 certification, excluding oil producing companies who are seeking ISO 9000 criteria as a process improvement initiative, rather than customer requirement. ISO 9001 certification demonstrates that an organisation has implemented the minimum level of quality control. Beyond this symbolic role, which actually can lead to significant business benefits in the form of simplified and standardised business relationships, ISO 9001 standards are used to improve the internal effectiveness of the production processes.

Many organisations regard ISO certification as the first step toward the implementation of the full TQM system. All requirements of the ISO standard are compatible with quality award criteria, and it can be considered as a subset of quality award criteria, but the latest ISO 9000: 2000 version is more comprehensive in scope and can be considered an alternative for quality award criteria (Cole, 1999). The current scope of the quality standard has been considered to cover all significant areas of the management. The ISO 9000:2000 standards are a collection of three documents:

A. Quality Management System – Fundamentals and Vocabulary
B. Quality Management System – Requirements (ISO 9001)
C. Quality Management system – Guidelines for Performance Improvement (ISO 9004)

In addition to detailed requirements, eight quality management principles have been identified in ISO 9000:2000 (Quality Management system – Fundamentals and Vocabulary), which “can be used by top management in order to lead an organisation towards improved performance”. The principles, which provide a basis for value based management are (1) Customer focus; (2) Leadership; (3) Involvement of people; (4) Process approach; (5) System approach to management; (6) Continual improvement; (7) Factual approach to decision making; (8) Mutually beneficial supplier relationships

The new ISO 9004:2000 standard includes guidelines for self-assessment. The self-assessment approach is “intended to provide a simple, easy-to-use approach to determine
Investigating the factors affecting the development of NQA

the relative degree of maturity of an organisation's quality management system and to identify the main areas for improvement" (ISO 9000:2000, Guidelines for Performance Improvement: 107).

2.3.4.4 National Quality Awards

Quality Awards' assessment procedures seem to be the only comprehensive means available to date by which TQM initiatives can be thoroughly monitored and assessed, providing any business with a competitive internal mechanism necessary to face the imposition of future new barriers to trade in the form of technical or quality standards requirements.

The concepts of TQM have come to the fore in recent times, being adopted by organisations as the means of understanding and satisfying the needs and expectations of their customers and taking costs out of their operations (Dale, 1999). Meanwhile, the pursuit of corporate excellence as a way of managing businesses for competitive advantage has been increasingly recognisable and has led, among others to the formation of the European Foundation for Quality Management (EFQM) in 1988 (Hakes, 1997). The EFQM subsequently developed its BE model and used it as a framework for the award of the EQA and the associated national quality awards (Adebajo, 2001) and (EFQM, 2002). The EFQM model was largely based on the concept of TQM as both a holistic philosophy and an improvement on other TQM-based models, such as the MBNQA. Recent developments of these national and regional quality awards serve as models of TQM and offer a continually changing blueprints and/or tools for self-assessment and benchmarking (Pun, Chin and Lau, 1999).

Many quality awards (QAs) have been developed all over the world and they differ to some degree in the way they are presented, and in the specific criteria used (Puay et al., 1998). However, there is considerable similarity on the general translation of the quality management philosophy into the business model used. These International Quality Awards (IQA's) form a comprehensive set of quality management principles and practices. They offer a paradigm for implementing quality strategies, benchmarking best practices and performing self-assessments, or competing with other organisations in organisational excellence.
Investigating the factors affecting the development of NQA

The design of NQA's is to promote quality awareness, understand the requirements for quality excellence, and share information on successful strategies and their benefits. NQA's contain typically from seven to ten examination criteria and a further 20 to 30 sub-criteria. The awards are made yearly to only the most deserving and well-run organisations. NQA's vary in many ways including:

- different award categories for different organisational sizes
- awards for the manufacturing and service sectors
- awards for not-for-profit organisations
- awards for different levels of quality management excellence attainment

The awards are administered usually by government statutory bodies, with participation of judges and examiners from both public and private business organisations.

Three major quality awards, the Malcolm Baldrige National Quality Award (MBNQA), the European Quality Award (EQA) and the Deming Prize (DP) are the most noted quality award models (Vokurka, 2000). Along with these awards, various quality awards have been set up by many countries to encourage their companies to adopt TQM and to provide a platform for measurement against world class standards.

For instance, the UK and the Northern Ireland Quality Awards Guide to Entry The Northern Ireland Quality Award, (1998) are identical to the EQA, while the Australian Award is based on the MBNQA criteria (Abraham et al., 1997). There are several Arab countries that have developed their NQA's, such as the Dubai Quality Award the first Arabic Quality Award, which is identical to the EFQM (Dubai Quality Award, 1995). The Jordanian Quality Award which has been developed in the year 2000 and named after King Abdullah the Second "King Abdullah II Award for Excellence", is based on the MBNQA criteria. There are over 69 NQA's world wide developed over the last decade. Most are based on either one / or the three major NQA's above mentioned, as per the next Table 2-3 National Quality Awards by United Nations Region (Asian Productivity Organisation 2001).

<table>
<thead>
<tr>
<th>Region</th>
<th>Country</th>
<th>Award</th>
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<tr>
<td>Sub-Saharan Africa</td>
<td>Mauritius</td>
<td>Mauritian National Quality Award</td>
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<td>East Asia and the Pacific</td>
<td>South Africa</td>
<td>South African Excellence Award</td>
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<tr>
<td></td>
<td>Australia</td>
<td>Australian Business Excellence Award</td>
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<tr>
<td>Region</td>
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<tr>
<td></td>
<td>Brunei</td>
<td>Brunei Civil Service Excellence Award</td>
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<td>Fiji</td>
<td>Fiji National Quality Award</td>
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<td>Hong Kong</td>
<td>Hong Kong Management Association (HKMA) Quality Award</td>
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<td>Indonesia</td>
<td>Paramakarya [Indonesian National Productivity Award]</td>
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<td></td>
<td>Japan</td>
<td>Deming Prize</td>
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<td>Republic of Korea</td>
<td>Korean Quality Grand Award</td>
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<td>Malaysia</td>
<td>Malaysian Prime Minister’s Award</td>
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<td>Mongolia</td>
<td>National Productivity Award</td>
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<td>New Zealand</td>
<td>New Zealand Business Excellence Award</td>
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<td>Philippines</td>
<td>Philippine Quality Award</td>
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<td>Singapore</td>
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<td>Republic of China</td>
<td>Taiwan National Quality Award</td>
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<td>Vietnam</td>
<td>Vietnam Quality Award</td>
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<td>South Asia</td>
<td>India</td>
<td>Rajiv Gandhi National Quality Award</td>
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<td>Nepal</td>
<td>Federation of Nepalese Chambers of Commerce &amp; Industry (FNCCI) National Excellence Award</td>
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<td>Pakistan</td>
<td>National Productivity Award</td>
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<td>Sri Lanka</td>
<td>Sri Lanka National Quality Award</td>
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<td>Denmark</td>
<td>Danish Quality Prize</td>
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<td>France</td>
<td>Prix Français de la Qualité [French Quality Award]</td>
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<td>Germany</td>
<td>German National Quality Award</td>
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<td>Greece</td>
<td>Hellenic National Quality Award</td>
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<td>Hungary</td>
<td>Hungarian Quality Development Center Award</td>
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<td>Polish National Quality Award</td>
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<td></td>
<td>Portugal</td>
<td>Portuguese Quality Award</td>
</tr>
<tr>
<td></td>
<td>Russia</td>
<td>Quality Awards of the Government of the Russian Federation</td>
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<tr>
<td></td>
<td>Scotland</td>
<td>Quality Scotland Business Excellence Award</td>
</tr>
<tr>
<td></td>
<td>Slovakia</td>
<td>The Slovak Republic Award for Quality</td>
</tr>
<tr>
<td></td>
<td>Slovenia</td>
<td>Slovenian National Quality Award</td>
</tr>
<tr>
<td>Region</td>
<td>Country</td>
<td>Award</td>
</tr>
<tr>
<td>----------------</td>
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<td>------------------------------------------------------------</td>
</tr>
<tr>
<td>Spain</td>
<td></td>
<td>Premio Principe Felipe a la Calidad Industrial</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[Prince Philip Industrial Quality Award]</td>
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<tr>
<td></td>
<td></td>
<td>Premio iberoamericano de la Calidad</td>
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<tr>
<td>Sweden</td>
<td></td>
<td>Swedish Quality Award</td>
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<td>Switzerland</td>
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<td>Swiss Quality Award</td>
</tr>
<tr>
<td>Turkey</td>
<td></td>
<td>TUSIAD-KalDer Quality Award</td>
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<tr>
<td>United Kingdom</td>
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<td>UK Business Excellence Award</td>
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<tr>
<td>Wales</td>
<td></td>
<td>The Wales Quality Award</td>
</tr>
<tr>
<td>Egypt</td>
<td></td>
<td>Egyptian National Quality Award</td>
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<tr>
<td>Israel</td>
<td></td>
<td>Yitzhak Rabin National Award for Quality and Excellence in</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Public Service</td>
</tr>
<tr>
<td>Jordan</td>
<td></td>
<td>King Abdullah II Award for Excellence</td>
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<td>Oman</td>
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<td>Oman Award for Excellence</td>
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<td>Qatar</td>
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<td>Qatar Quality Award</td>
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<tr>
<td>United Arab Emirates</td>
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<td>Dubai Quality Award</td>
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<tr>
<td>Argentina</td>
<td></td>
<td>Premio Nacional a la Calidad [National Quality Award]</td>
</tr>
<tr>
<td>Brazil</td>
<td></td>
<td>Prêmo Nacional da Qualidade [National Quality Award]</td>
</tr>
<tr>
<td>Canada</td>
<td></td>
<td>Canada Awards for Excellence</td>
</tr>
<tr>
<td>Chile</td>
<td></td>
<td>Premio Nacional a la Calidad [National Quality Award]</td>
</tr>
<tr>
<td>Colombia</td>
<td></td>
<td>Premio Colombiano a la Calidad [Colombia Quality Award]</td>
</tr>
<tr>
<td>Costa Rica</td>
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<td>Costa Rica Excellence Award</td>
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<tr>
<td>Ecuador</td>
<td></td>
<td>Ecuador National Quality Award</td>
</tr>
<tr>
<td>Mexico</td>
<td></td>
<td>Premio Nacional de Calidad [National Quality Award]</td>
</tr>
<tr>
<td>Paraguay</td>
<td></td>
<td>Paraguay National Quality Award</td>
</tr>
<tr>
<td>Peru</td>
<td></td>
<td>Peruvian National Quality Award</td>
</tr>
<tr>
<td>United States</td>
<td></td>
<td>Malcolm Baldrige National Quality Award</td>
</tr>
<tr>
<td>Uruguay</td>
<td></td>
<td>Premio Nacional de Calidad [National Quality Award]</td>
</tr>
</tbody>
</table>

| Table 2-3 IQA by UN region |

Source: Asian Productivity Organisation (APO), (2001)

Chuan and Soon, (2000) in their comparative analysis of national and regional quality awards, found significant similarities in the criteria used for assessing award applicants. One reason may be that countries seeking to establish national quality awards look toward these established awards as models for TQM. Kanji and Tambi, (1999) stated that most of the models in use (e.g. DP, EQA, and MBNQA) are indicative models. The detailed content and structure of other quality awards differ, but they share the same set of values and principles which include: (1) Leadership; (2) Resources management; (3) Policy and
strategy; (4) Human resource management; (5) Process quality; (6) Results; (7) Customer satisfaction

The TQM approach to performance measurement is consistent with Business Excellence (BE) initiatives under way in many companies: cross-functional integration, continuous improvement, customer/supplier partnerships and team rather than individual accountability. However, most researchers agree that IQA's are considered as the most significant means by which TQM efforts within an organisation can be evaluated, assessed and measured. Through quantitatively assessing the degree of the organisation conformance to the awards criteria, items and areas, an organisation can assess its TQM status and plan its future efforts accordingly. Juran, (1996); Dean and Bowen, (1994) agree that quality awards, such as the MBNQA and the EQA, are currently the most demonstrative philosophies of the TQM discipline.

2.3.4.5 ISO 9000 vs. IQA's

Comparison of the two approaches showed that the quality management system in the ISO 9000 family and IQA's are based on similar principles. The main difference in these two models lies in the scope of applications, which is considerably larger in the IQA's. However, from the above presentation and review of relevant literature on both ISO 9000: 200 and IQA's, one can see the difference very clearly between the two frameworks. ISO 9001: 2000 "specifies requirements for a quality management system", whilst the excellence models are "a non prescriptive framework which recognises there are many approaches to achieving sustainable excellence". The model's application to "all activities and all interested parties/stakeholders of an organisation" provides for a far wider scope than ISO 9001:2000, with its focus on customer and regulatory requirements only. The author has made an endeavour on the linkage and contribution of ISO 9001: 2000 to IQA's as shown on Table 2-4 below.

Research showed that organisations which succeeded in successfully implementing TQM reaped substantial rewards. But the low probability of success deterred many organisations from trying TQM. Instead, many organisations opted for ISO 9000. ISO 9000 promises not world-class performance levels, but "standard" performance. But it provides clear criteria and a guarantee that meeting these criteria will result in recognition.
Investigating the factors affecting the development of NQA

<table>
<thead>
<tr>
<th>No</th>
<th>IQA's Criteria</th>
<th>Contribution</th>
<th>ISO 9001:2000 elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Leadership system</td>
<td>Low/Medium</td>
<td>5.1, 5.2, 5.3, 5.4, 5.5, 5.6</td>
</tr>
<tr>
<td>2</td>
<td>Policy &amp; Strategy</td>
<td>Medium</td>
<td>5.2, 8.2.1, 5.3, 5.4.1, 5.4.2, 5.5.4, 5.6, 8.2, 8.4</td>
</tr>
<tr>
<td>3</td>
<td>Customer satisfaction</td>
<td>High</td>
<td>5.6, 7.2.3, 8.2, 8.2.3, 8.4</td>
</tr>
<tr>
<td>4</td>
<td>Information &amp; analysis</td>
<td>Medium</td>
<td>8.2</td>
</tr>
<tr>
<td>5</td>
<td>People management</td>
<td>Low</td>
<td>5.1, 5.5.2, 6.2, 6.4</td>
</tr>
<tr>
<td>6</td>
<td>Process management</td>
<td>High</td>
<td>4.1 &amp; 4.2, 5.2, 5.6, 7.2, 7.3, 8.2, 8.4, 8.5</td>
</tr>
<tr>
<td>7</td>
<td>Resources management</td>
<td>Low/Medium</td>
<td>5.5.6, 5.5.7, 6.1, 6.3, 6.4, 7.2.2, 7.3.3, 7.5.1</td>
</tr>
<tr>
<td>8</td>
<td>Results</td>
<td>Low/Medium</td>
<td>5.3, 5.6, 6.2.2, 7.2.3, 7.4.1, 8.2.3, 8.2.4</td>
</tr>
</tbody>
</table>

Table 2-4 Linkage and contribution of ISO 9000:2000 to Excellence Models

2.3.4.6 Conclusion

Where the system remains separate from the mainstream management of the organisation, dependent upon the efforts of the quality manager and the threat of the external assessor to gain it attention, then neither the necessary culture nor the maturity is present within the organisation to take the next step towards excellence. Introducing the excellence model at this stage and assessing the organisation against it would only serve to highlight these existing weaknesses. ISO 9001:2000 remains as a useful and necessary step on the excellence journey. In determining the steps on that journey an organisation would do well first to consider how effectively it is using its current quality management system.

Used well, a quality management system can make a significant contribution to an organisation's focus on excellence, whilst a poorly implemented and supported system will undermine any effort to achieve that status. However, the ISO 9000:2000 has moved even closer to the Business Excellence, see Table 2-4 above.

For those aspiring to excellence, however, focus and efforts need to extend well beyond the requirements of ISO 9000:2000 and encompass other management standards, tools and techniques. The excellence models provide the holistic framework around which an organisation can assess its use of these tools and standards and choose those necessary to move it forward. Standards such as ISO 9001:2000 provide complementary rather than competing approaches.
2.3.5 TQM implementation approaches

Lindsay and Petrick, (1997) and Lewis and Smith, (1994) suggested six common approaches that would be used to develop and/or implement TQM:

1. Guru approach. The writings of Deming's 14-point model, Crosby's 14 steps and Juran's trilogy are used for analysis and implementation.

2. Japanese model approach. This uses the writings of Japanese writers such as Ishikawa and the educational guidelines (e.g. Kaizen, 5S, etc.) of the Union of Japanese Scientists and Engineers.

3. Total quality element approach. This uses elements (e.g. quality circles, statistical process control and quality function deployment) of continuous improvement rather than full implementation.

4. Hoshin planning approach. This focuses on successful planning, deployment and execution and diagnosis of quality practices and performance measurement.

5. Quality awards/business excellence criteria approach. This includes such criteria as the Deming Quality Award Japan, Malcolm Baldrige National Award in the USA, the European Quality Award in Europe, and similar quality awards, to identify areas for improvement.

6. Industrial company/leader model approach / (Benchmarking). This is where leaders from one organisation visit an organisation using TQM, identify its system and integrate this information with their own ideas to create a customised approach. Visiting and learning from the quality/excellence award winners is an example of this approach.

As argued by Lindsay and Petrick, (1997), while all these approaches work, the most useful TQM implementation plan is an integrated blend of them. The plan should meet a number of criteria to incorporate the organisational development and changes and be operational at the same time. If TQM is typical of other major change processes, it should be implemented using the principles that apply to any organisational change. In particular, each situation should be diagnosed periodically and organisation change efforts redirected throughout the ongoing TQM implementation. There is a universal set of quality practices that, if implemented, will lead to high performance (Dale, 1999 and Kanji, 1997).
TQM is "an approach to improving the competitiveness, effectiveness and flexibility of a whole organisation. It is essentially a way of planning, organising and understanding each activity, and depends on each individual at each level" (Oakland, 1993). TQM involves placing the customer as the focal point of operations. It involves the bottom-down communication and deployment of objectives, and the bottom-up implementation of continuous improvement activities.

TQM can generate improved products and services, reduced costs, more satisfied customers and employees and improved bottom line financial performance. Although many adherents openly praise TQM, others have identified significant costs and implementation obstacles (Powell, 1995; Reger et al., 1994; Sitkin et al., 1994; Kekale and Kekale, 1995; Doyle, 1992). Critics have suggested, for instance, that TQM entails excessive retraining costs, consumes inordinate amounts of management time, increases research work and formality, demands unrealistic employee commitment levels, emphasises process over results, and fails to address the needs of small firms, service firms or non-profit organisations.

However, literature revealed that TQM has failed in certain circumstances. Hence, these failures have been attributed to lack of cooperation and excessive time, financial commitments, implementation problems (Reger et al., 1994) or a disregard for contextual factors (Sitkin et al., 1994). Reasons for friction or failure to implement a quality programme may include a mismatch of organisational culture (Kekale and Kekale, 1995), a lack of management leadership and inadequate training (Doyle, 1992).

2.3.6 TQM critical success factors

2.3.6.1 Introduction

Researchers indicated that TQM consists of critical success factors (CSF's) and methods (Sitkin et al., 1994; Wilkinson et al., 1998; Zhang, 2000). These methods are a set of practices, tools and techniques, deriving from the critical factors, and are the basic elements required to implement such factors. These factors which are influencing the success or failure of TQM implementation have received much research interest (Baidoun, 2000). As to the fact that effective organisational transformation to TQM has been linked to the extent to which firms successfully implement certain quality management practices.
Kanji, (1998) defined critical success factors (CSF's) as the key areas of an organisation which, if properly managed, will improve the organisation's competitiveness. CSF's are the few things that must go well to ensure success for managers / organisations (Kanji and Tambi, 1999). Digman (1990) described CSF's as the areas where things must go right to ensure successful competitive performance for an organisation. Oakland, (1995) has defined CSF's in terms of what an organisation must accomplish to achieve its mission.

However, for an organisation to achieve business excellence it is necessary to adopt a TQM process and the critical success factors (Kanji & Tambi, 1999). Many researchers and practitioners believe that few well-defined performance dimensions and critical success factors can help develop specific measures to monitor progress and performance towards excellence (Kanji, 2001 and Neely et al., 1995).

2.3.6.2 TQM- Principles vs. TQM-CSF

Saylor, (1992) and Hakes, (1991) have classified the Principles of TQM into ten major headings: (1) leadership; (2) commitment; (3) total customer satisfaction; (4) continuous improvement; (5) total involvement; (6) training and education; (7) ownership; (8) reward and recognition; (9) error prevention; and (10) co-operation and teamwork.

In recent surveys carried out by Kanji & Yui, (1997); Kanji & Tambi, (1999), indicate that respondents regard the prime principles and core concepts of TQM as the critical success factors for the successful implementation of TQM. However, the quality management practices outlined by quality gurus such as Deming, (1986), Crosby, (1979), and Juran, (1986) discussed earlier in Section 2.3.4 "Quality gurus based frameworks" which include: "top management commitment, training and education, supplier management, process management, and human resource development" are considered as an example of CSF's. Kanji, (1996) argues that the CSF's of TQM can also be derived from the generic TQM assessment models (e.g. the Deming, Baldridge, and European) and the main TQM principles that are prescribed by quality gurus. Similarly, various balanced scorecard techniques (Kaplan & Norton, 1996) and excellence award models (EFQM, 2002 and NIST, 2002) are examples that incorporate the principles identified using a CSF's approach and have been empirically tested and validated in different contexts.
Saraph et al., (1989) used organisational and managerial aspects of the works of a number of quality management gurus such as Deming, Juran and Crosby to 'organise and synthesise the critical factors identified by them. They provided a synthesis of the quality literature by identifying eight CSF's of quality management in a business unit. The eight critical factors identified were as per Table 2-5. This study was originally conducted in the USA and was later replicated in three other countries including India by Motwani et al., (1994), the United Arab Emirates by Badri et al., (1995) and Singapore by Quazi et at., (1998). Overall, despite certain differences, all three studies found the Saraph et al., (1989) instrument to be valid and reliable.

Several replication studies attempted to develop an appropriate set of critical quality management constructs representing an integrated approach to TQM implementation (e.g. Adam 1994, Flynn et al. 1994, 1995, Powell 1995, Cunningham and Ho 1996, Black and Porter 1996, Ahire et al. 1996, Kuei et al. 1997, Ruggieri and Merli 1998, Rungtusanatham et al. 1998, Quazi et al. 1998, Anderson et al. 1998, Samson and Terziovski 1999, Kannan et al. 1999, Dow et al. 1999, Yusof and Aspinwall 2000). These empirical studies used the quality management prescriptions of the quality pioneers mentioned earlier along with other quality management literature and award criteria, such as the MBNQA and the EFQM to develop measurement items. Most of these studies' primary goals were to identify the critical factors of TQM and determine the relationships between these factors and firm performance outcomes.

A similar study on critical success factors was initiated by Youssef and Zairi, (1995) in an attempt to verify the applicability of CSF's on a list of 22 critical factors based on the MBNQA criteria and the teachings of the three TQM gurus to organisations operating on a global basis. Similarly Thiagarajan and Zairi, (1997) developed a questionnaire based on 22 critical factors short listed from the teachings of quality gurus such as Deming, Crosby and Juran. The list was then finalised by comparing it with activities which award winning organisations tend to undertake. Ninety-two organisations were targeted, including national quality award winning organisations in the USA and various quality experts. The project was replicated in Europe and in particular the UK health sector, Asia (Malaysia and Singapore) and in the Middle East.
The findings of the study based on the 22 factors generated by Ramirez and Loney, (1993) proved to be a very useful vehicle for checking applicability, order of criticality and relevance of TQM in a much wider context. However, the study concluded that the Asian countries consider TQM to be very important for similar reasons given for the previous sample. Malaysia in particular is a country which is enjoying strong economic growth; together with Singapore, both are countries attractive to foreign capital investment because of low cost, high level of skills and political stability.

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Management leadership</td>
<td>Top management commitment</td>
<td>Role of top management</td>
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<td>Organisation</td>
<td>Employee training</td>
<td>Role of quality department</td>
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<tr>
<td>Education and training</td>
<td>Design quality management</td>
<td>Training</td>
</tr>
<tr>
<td>Quality in design</td>
<td>Supplier quality management</td>
<td>Product service design</td>
</tr>
<tr>
<td>Quality in suppliers</td>
<td>Internal quality information usage</td>
<td>Supplier quality management</td>
</tr>
<tr>
<td>Quality in process</td>
<td>Employee involvement</td>
<td>Process management</td>
</tr>
<tr>
<td>Fact-based management</td>
<td>Employee empowerment</td>
<td>Quality data and reporting</td>
</tr>
<tr>
<td>Human resource management</td>
<td>Customer focus</td>
<td>Employee relations</td>
</tr>
<tr>
<td>Customer focus</td>
<td>Benchmarking</td>
<td></td>
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<tr>
<td>Tools and techniques</td>
<td>SPC usage</td>
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<tbody>
<tr>
<td>Visionary leadership</td>
<td>Employee involvement</td>
<td>Role of division top management and quality policy</td>
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<td>Internal and external cooperation</td>
<td>Senior executive involvement</td>
<td>Role of the quality department</td>
</tr>
<tr>
<td>Learning</td>
<td>Employee satisfaction</td>
<td>Training</td>
</tr>
<tr>
<td>Process management</td>
<td>Compensation</td>
<td>Product/service design</td>
</tr>
<tr>
<td>Continuous improvement</td>
<td>Customers</td>
<td>Supplier quality management</td>
</tr>
<tr>
<td>Employee fulfilment</td>
<td>Design and conformance</td>
<td>Process management/operating</td>
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<td>Knowledge</td>
<td>procedures</td>
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<tr>
<td></td>
<td>Employee selection and development</td>
<td>Quality data and reporting</td>
</tr>
<tr>
<td></td>
<td>Inventory reduction</td>
<td></td>
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</thead>
<tbody>
<tr>
<td>Committed leadership</td>
<td>Corporate quality culture</td>
<td>Management leadership</td>
</tr>
<tr>
<td>Adoption and communication of TQM</td>
<td>Strategic quality management</td>
<td>Continuous improvement systems</td>
</tr>
<tr>
<td>Closer customer relationships</td>
<td>Teamwork structures</td>
<td>Education and training</td>
</tr>
<tr>
<td>Closer supplier relationships</td>
<td>External interface management</td>
<td>Supplier quality management</td>
</tr>
<tr>
<td>Benchmarking</td>
<td>Supplier partnership</td>
<td>Systems and processes</td>
</tr>
<tr>
<td>Increased training</td>
<td>Operational quality planning</td>
<td>Measurement and feedback</td>
</tr>
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<td>Open organisation</td>
<td>Quality improvement measurement systems</td>
<td>Human resources management</td>
</tr>
<tr>
<td>Employee empowerment</td>
<td>Communication of improvement</td>
<td>Improvement tools and techniques</td>
</tr>
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<td>Zero defects mentality</td>
<td>Information</td>
<td>Resources</td>
</tr>
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<td>Flexible manufacturing</td>
<td>People and customer management</td>
<td>Work environment and culture</td>
</tr>
<tr>
<td>Process improvement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measurement</td>
<td>Customer satisfaction orientation</td>
<td></td>
</tr>
</tbody>
</table>

Table 2-5 A sample of TQM CSF worldwide
Most researchers categorised CSF based on their degree of importance. Williams and Ramprasad, (1996) have categorised CSF into four classes that indicate their degree of importance. Similarly Thiagarajan, (1995) in his PhD dissertation provided a hierarchical order of importance of CSF’s (first-level, second-level and third-level factors). He also found that critical success factors differ in terms of degree of importance and that organisational culture influences the TQM implementation process, which contradicts the work of Motwani et al (1994) above mentioned.

Table 2-5 above provides a sample of TQM-CSF worldwide. All these CSF are based on literature review that was carried out by the researchers. Although, these studies have provided different results, they have identified a common set of practices considered essential for the success of TQM implementation.

On the other hand, comparing most of the above mentioned empirical research studies carried out in several countries world wide, and covering similar categories, has resulted in identifying 18 common CSF as per Table 2-6 next.

<table>
<thead>
<tr>
<th>No.</th>
<th>TQM factor</th>
<th>No. of studies in which the factor was extracted</th>
<th>No. of country categories in which the factor is present</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Top management commitment and leadership</td>
<td>67</td>
<td>23</td>
</tr>
<tr>
<td>2</td>
<td>Customer focus</td>
<td>53</td>
<td>21</td>
</tr>
<tr>
<td>3</td>
<td>Information and analysis</td>
<td>53</td>
<td>17</td>
</tr>
<tr>
<td>4</td>
<td>Training</td>
<td>50</td>
<td>19</td>
</tr>
<tr>
<td>5</td>
<td>Supplier management</td>
<td>47</td>
<td>17</td>
</tr>
<tr>
<td>6</td>
<td>Strategic planning</td>
<td>38</td>
<td>16</td>
</tr>
<tr>
<td>7</td>
<td>Employee involvement</td>
<td>32</td>
<td>18</td>
</tr>
<tr>
<td>8</td>
<td>Human resource management</td>
<td>26</td>
<td>16</td>
</tr>
<tr>
<td>9</td>
<td>Process management</td>
<td>26</td>
<td>13</td>
</tr>
<tr>
<td>10</td>
<td>Teamwork</td>
<td>22</td>
<td>9</td>
</tr>
<tr>
<td>11</td>
<td>Product and service design</td>
<td>21</td>
<td>11</td>
</tr>
<tr>
<td>12</td>
<td>Process control</td>
<td>21</td>
<td>8</td>
</tr>
<tr>
<td>13</td>
<td>Benchmarking</td>
<td>16</td>
<td>12</td>
</tr>
<tr>
<td>14</td>
<td>Continuous improvement</td>
<td>16</td>
<td>10</td>
</tr>
<tr>
<td>15</td>
<td>Employee empowerment</td>
<td>16</td>
<td>6</td>
</tr>
<tr>
<td>16</td>
<td>Quality assurance</td>
<td>15</td>
<td>12</td>
</tr>
<tr>
<td>17</td>
<td>Social responsibility</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>18</td>
<td>Employee satisfaction</td>
<td>9</td>
<td>6</td>
</tr>
</tbody>
</table>

Table 2-6 Most commonly extracted factors across the countries worldwide.
Although the term critical success factors has not been used in most of the BEMs, nevertheless, it is said that an organisation system must be guided through the TQM principles and core concepts by top-management leadership in order to achieve business excellence (Kanji, 1998). In addition, the understanding given in this section that the components of the three major BE models are based on the synthesising of those critical requirements for quality management, which were prescribed by eminent quality practitioners such as Juran, Deming, Crosby, Garvin, Feigenbaum, Ishikawa and Taguchi. Kanji & Tambi, (1999) stated that for those companies, which wish to achieve business excellence may need to adopt TQM - critical success factors that form the business excellence model. However, while empirically investigating quality practices in Indian organisations, Motwani et al., (1994) observed, "It is not necessary for all the factors to be present to ensure the success of the total quality programme of the organisation".

### 2.3.6.3 Classification of CSF

Despite the fact that researchers and practitioners have defined TQM critical success factors (CSF's) very clearly, Kanji, (2001) believes that a few well-defined performance dimensions and critical success factors (CSF) can help develop a BEM with specific measures to monitor progress and performance towards excellence. In many circumstances, these measurement systems are embedded in the CSF. Kanji, (2001) adds that despite being at some extent organisation or industry-specific, these factors can be grouped into some principles that have been systematically proven to be universally valid. Kanji, (2001) argues that the criteria for performance measures are rooted in these factors of the organisation, and ultimately, correspond to the determinants of BE. These factors are sometimes referred to as soft and hard factors. Hence, these 'soft' and 'hard' quality factors reflect the TQM model proposed by (Oakland, 2000) and (Thiagarajan and Zairi, 1997).

Moreover, literature has also grouped CSF's elements into two dimensions: the management system -leadership, planning, human resources, etc. and the technical system (Evans and Lindsay, 1999); or into the "soft" and "hard" parts (Wilkinson et al., 1998). The technical / hard part, according to Wilkinson et al. (1998), includes production and work process control techniques which ensure the correct functioning of such processes, including process design, the "just in time" philosophy, the ISO 9000 norm and
the seven basic quality control tools. The two dimensions reflect all the issues that a manager must bear in mind for a successful TQM implementation.

Thiagarajan and Zairi, (1997) argue that the 'soft' quality factors may best be seen as issues discussed under leadership, internal stakeholders management and policy. They are issues that impact on maximising organisation-wide support and involvement in attaining the quality goals of an organisation. They include: "Senior executives' commitment and involvement, actively demonstrated; comprehensive policy development and effective deployment of goals; entire workforce commitment to quality goals of the organisation; supervisors, unit heads and divisional managers assuming active new roles; empowerment; effective communication; internal customer-supplier concept; teamwork; system for recognition and appreciation of quality efforts; and training and education."

While the effective manipulation of the 'soft' factors is essential to the attainment of the quality goals of the organisation, they must be supported by the 'hard' factors to manage, track and improve the journey towards achieving the goals. They include: "benchmarking, performance measurement; management by fact, managing by processes, self-assessment, quality control tools and techniques, cost of quality process, documented quality management system, supplier management, and customer management."

(Thiagarajan and Zairi, 1997)

2.3.6.4 Conclusion

In conclusion, the literature reviewed above shows no indication that specific factors were critical only in one country or in certain countries. These studies reveal that, for the most part, the set of factors used in a study were valid in most countries. However, this does not prove that the TQM factors are universal. First, in most of these studies, the measurement instrument was validated in only few countries. Second, whether or not a TQM factor is critical in a certain country should not be judged by the extent of its adoption or validity in that country, but by its contribution to the performance of the companies surveyed in that country.
2.4 TQM assessment frameworks

2.4.1 Introduction

The performance measures such as customer satisfaction or continuous improvement are very dynamic targets. The most forward thinking organisations assess current total quality performance against its past performance (Porter and Tanner, 1996). The result of this assessment determines the organisational maturity in its journey towards business excellence.

The quality award models or excellence models have stimulated the use of self-assessment as a way of measuring progress on the quality journey, and give direction to further improvement activities.

2.4.2 Self-assessment

EFQM, (2002) and Henderson, (1997) have defined Self-assessment as a comprehensive, systematic and regular review of an organisation's activities that ultimately result in planned improvement actions. Neely, (1998) stated that the assessment process helps organisations identify their strengths and shortcomings and best practices where they exist. Karapetrovic and Willborn, (2001) add that self-assessments are aimed at identifying strengths, weaknesses and opportunities for improvement. The objective of self-assessment is to identify and act on the areas of the improvement process that require additional effort, while recognising and maintaining that which is already going well. They do generate the results and valuable inputs into the annual corporate planning cycle, and also encourage the integration of a range of quality initiatives and performance improvements that may have been separately pursued across the organisation (Beasley, 1994; Pun et al., 1999 and Van der Wiele and Brown, 1999). The three main elements in self-assessment are model, measurement and management (Hillman, 1994). The key benefit of the use of the Business Excellence Models (BEM) is the opportunity for self-assessment and benchmarking (Adebanjo, 2001).

EFQM has been a major stimulus to self-assessment in the UK and throughout Europe (Wilson, 1998, Jones, 1999, Brereton, 1996, Porter and Tanner, 1996). Hence, Wu et al., (1997) developed a self-assessment instrument based on the seven categories of the
Investigating the factors affecting the development of NQA

MBNQA and Missouri Quality Award (MQA). The objective of the study was to develop a simple and effective self-assessment instrument that could be used in place of a full-scale Baldrige assessment. On the other hand, Brown, (1997) reported the development of a self-assessment questionnaire to assess an organisation's level of quality management practices using the 1997 Baldrige criteria.

Prybutok and Stafford, (1997) reported the development and use of a self-assessment survey based on MBNQA for a Health Care Organisation in the USA. The assessment instrument was developed by examining the content of each major (MBNQA) criterion. However, it is reported that due to incompleteness of the returned questionnaires, factor analysis, reliability and validity checks could not be carried out. Only descriptive statistics were used to create a profile of current quality management practices in the organisation.

Assessing changes that can affect a company must be part of a deliberate process that can convert change concepts for new products, services, customers and markets (Zairi and Whymark, 2000b). Henderson, (1997) argues that organisations must establish their performance measurement systems with self-assessment orientation. Otherwise, this may result in fragmentation of efforts, slow response and weak productivity growth in the organisations.

However, the implementation of self-assessment against an excellence model should focus on the whole organisation and on continuous improvement in every aspect of the organisation. This process usually involves many people. Organisations interested in using self-assessment against an excellence model must have clear, defined goals and objectives, and be aware of the costs and resources required. Implementing self-assessment against the award criteria is an organisational change process involving deep changes, and it can be expected that there will be resistance to the change (Van der Wiele et al., 2000).

2.4.3 National Quality Awards (NQA’s)

There has been in the last few years what can only be described as an explosion of interest in national and international quality awards as predicted by (Juran, 1996). The popularity of such awards is illustrated by the fact that there are over 385,000 references to
Investigating the factors affecting the development of NQA

the European Foundation for Quality Management (EFQM) on the World Wide Web* (Neely, 1998). Ever since the Malcolm Baldrige National Quality Award was established in 1987, many other countries have developed their own versions of a national quality award (NQA). These NQA's tend to follow the general framework of the MBNQA with different emphases on criteria items such as leadership, customer focus, resource management and impact on society (Kay C. Tan, 2002).

Business Excellence Models are a practical tool to help organisations assess their performance against criteria, which reflect the crucial areas for quality management systems. In doing so, the organisation can determine where they are on the path to excellence (Porter and Tanner, 1996). However, for better understanding of the assessment criteria of the major national quality awards, it seems reasonable to have a brief description of the selected frameworks. The salient features of the three national quality awards, i.e. Deming Prize (DP), Malcolm Baldrige National Quality Award (MBNQA) and the European Quality Award (EQA) are presented in Table 2.7 next. Similarities and differences of these three models are also discussed. A summary of the comparative framework of major IQA's is presented in Table 2-7.

<table>
<thead>
<tr>
<th>No</th>
<th>Criterion</th>
<th>Description of Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Leadership system</td>
<td>Examines how the company can achieve continuous quality and performance excellence through the driving forces of the executives of all levels of the organisation.</td>
</tr>
<tr>
<td>2</td>
<td>Policy &amp; Strategy</td>
<td>Examines how the company develops, communicates, implements, and improves its strategy and policy to achieve company performance excellence and strategy competitive position.</td>
</tr>
<tr>
<td>3</td>
<td>Customer satisfaction</td>
<td>Examines the ability of the company in satisfying the need and expectations of the customers through gain in customer and market knowledge and enhancement in customer relationship.</td>
</tr>
<tr>
<td>4</td>
<td>Information &amp; analysis</td>
<td>Examines the section, analysis and unification of information and data in the organisation itself and within and outside the organisation's industry and markets.</td>
</tr>
<tr>
<td>5</td>
<td>People management</td>
<td>Examines how the company plans and develops its human resources to achieve the maximum potential of its workforce.</td>
</tr>
<tr>
<td>6</td>
<td>Process management</td>
<td>Examines the design, management evaluation and improvement of the various key processes to achieve product and service excellence.</td>
</tr>
<tr>
<td>7</td>
<td>Resource management</td>
<td>Examines the management of various resources in the organisation namely financial, materials technology, intellectual property and assets.</td>
</tr>
<tr>
<td>8</td>
<td>Impact on society</td>
<td>Examines how the company addresses its responsibilities to the public in three major areas: social responsibility community and environmental conservation.</td>
</tr>
<tr>
<td>9</td>
<td>Partnership</td>
<td>Examines how the company selects and manages its suppliers/partners to ensure that they attain the expected quality requirements.</td>
</tr>
<tr>
<td>10</td>
<td>Results</td>
<td>Examines the company's performance in two areas: financial and market results, and operational productivity results.</td>
</tr>
</tbody>
</table>

Table 2-7 A summary of the comparative framework of major IQA's
2.4.3.1 Deming Prize (DP)

The Deming Prize was the first to be established back in 1951. It was set up by the Union of Japanese Scientists and Engineers to commemorate Dr Deming's contribution to Japanese industry and to promote further the continued development of quality control in Japan. The Deming Prize has a total of five categories, namely: the Deming Prize for Individuals (DPI); the Deming Application Prize (DP); the Deming Application Prize for Small Companies (DAPSC); the Deming Application Prize for Divisions (DAPD); and the Quality Control Award for Factories (QCAF). Non-Japanese companies have been allowed to apply for and receive the DP since 1984. However, those categories of DP which are open to overseas companies do not include the DPI and the QCAF. The aim of the examination is to find out how well a company implements total quality control (TQC) by assessing its quality assurance policies and activities, the implementation of company-wide quality control (CWQC) practices, and the results achieved (quality improvement, productivity improvement, cost reduction, expanded sales, increased profits, etc.) through application of statistical techniques and quality circles.

2.4.3.2 Malcolm Baldrige National Quality Award (MBNQA)

The MBNQA is an annual, national, US quality award established in 1987. Its purpose is to promote quality awareness and understanding of the requirements for quality excellence, to recognise quality achievements of US companies, and to publicise successful quality strategies. The award has three eligibility categories, namely manufacturing and service companies or their subsidiaries and small businesses. Up to two awards may be given in each category each year. Winning companies are allowed to publicise and advertise their awards, and are expected to share with other organisations information about their successful quality strategies.

The award assessment is based on a set of examination criteria, outlined in the written application that each applicant ought to submit, and includes information and data on the company's quality processes and quality improvement results. The criteria for performance excellence provide organisations with an integrated, results-oriented framework for implementing and assessing processes for managing all operations (NIST, 1999b). The framework consists of seven criteria - leadership, strategic planning, customer and market focus, information and analysis, human resource focus, process management, and
business results as per Figure 2-4. A total of 1,000 points is allocated to these seven categories. Each category is subdivided into 28 examination items. Each examination item emphasises a major quality system requirement and includes a set of specific areas to address; each area illustrates the type and amount of information the applicant should provide.

![Diagram of Baldrige Award criteria framework](image)

**Figure 2-4** Baldrige Award criteria framework; **Source:** MBNQA (2000)

Although the point value of each examination category/item is subject to change every year, customer satisfaction has always been the most important category as it is the overall goal of the quality system. It currently carries more than twice the point values of the others and 30% of the total points available.

### 2.4.3.3 European Quality Award (EQA)

The European Quality Award (EQA) criteria are based on the European Foundation for Quality Management's (EFQM) model for business excellence. The EFQM was founded by 14 of the leading Western European businesses in 1988. In recognition of achievement as a feature of the policy of the EFQM, the European Quality Award (EQA) was established in
Investigating the factors affecting the development of NQA

1991 with the support of the European Organisation for Quality (EOQ) and the European Commission (EC). The aim of the EQA is to enhance the position of Western European companies in the world market by accelerating the acceptance of quality as a strategy for global competitive advantage, and by stimulating and assisting the development of quality improvement activities.

The European Quality Award has two categories: the European Quality Prize (EQP), which is awarded to companies which demonstrate excellence in the management of quality as their fundamental process for continuous improvement; and the EQA which is awarded to the most successful exponent of TQM in Western Europe. Most businesses may apply for the award as long as they are eligible Western European companies; that non-eligible is all government agencies, not-for-profit organisations, trade associations and professional societies.

![Image]

**Figure 2-5** The European Quality Award (Business Excellence Model)

*Source: EFQM (2000)*

The examination process consists of three main sections: initial assessment, site visits, and final review and decision. The award assessment criteria have nine categories that are divided into two groups, the results and the enablers as per
Investigating the factors affecting the development of NQA

Figure 2-5. In other words, the award assesses how the customer and people satisfaction, impact on society, and business results are being achieved through leadership, people management, policy and strategy, resources and processes. A maximum total of up to 1,000 points is allocated to these nine award criteria. Each criterion carries a different number of points in accordance with its relative value within the award.

In September 1995, the EQA was extended to include public sector and voluntary organisations. The following year, an award for small and medium enterprises was introduced. The model belongs to the TQM strand of the broad quality improvement. It therefore gives greater weight in its application to organisational cultures and values than organisational structure and procedures.

Along with the above mentioned awards, various quality awards have been set up by many countries to encourage their companies to adopt TQM and to provide a platform for measurement against world class standards. Most of these awards are either identical to one of the three internationally recognised quality awards or their criteria are largely built upon the criteria of these awards. For instance, the UK and the Northern Ireland Quality Awards Guide to Entry the Northern Ireland Quality Award, (1998) are identical to the EQA. The Australian Quality Award Abraham, Fisher and Crawford, (1997) is based on the MBNQA criteria, where as the criteria for Dubai Quality Award, (1995), are identical to the MBNQA. Other quality awards such as the Malaysian Prime Minister’s Quality Award, (1996); the French Quality Award (1996); the Jordanian Quality Award “King Abdullah II Award for Excellence” have also been developed in line with the above models, or have used them for guidance during the development of their model, such as the Malaysian award.

2.4.4 Critique

The paucity of research on developing a specific regional model tailor made for the developing countries such as in Libya, has limited the thesis critique. However, Researchers have compared among the different national quality awards such as (Kay C. Tan, 2002; and Puay et al 1998); while others limited their analysis and comparisons to the three internationally recognised quality awards such as (Bohoris, 1995 and Tummala and
Tang, 1996). The comparisons were in regards to their concepts, criteria and application procedures.

Boaden and Dale, (1992) mentioned that the quality awards are only applicable to organisations that have been undertaking quality improvement for a number of years.

Black and Porter, (1995) indicated that the MBNQA guidelines are based on empirical evidence, which has contributed to the debate concerning its suitability.

Zink, (1995) draws attention to the holistic nature of the BEMs. He analyses a variety of management concepts including lean production, kaizen and business process re-engineering and concludes that they represent "only fragmented visions" Zink, (1995). Zink, (1995) argues that these approaches need to be "embedded in a comprehensive context ... continuous improvement, process optimisation, customer orientation, and economic success, along with aspects such as environmental protection and people satisfaction".

Bohoris, (1995) compared the three internationally recognised quality awards along with three major criteria, 23 items and 49 areas of examination. He concluded that each TQM award model has its unique system and set of examination criteria, items and areas different from the other two in terms of purpose, overall approach, values and concepts, and their contribution to TQM efforts. While the Deming prize emphasises the adoption of Company Wide Quality Control (CWQC); the overall emphasis of MBNQA is on customer satisfaction; and the EQA uniquely includes the dimensions of community perception of the company, and employees' satisfaction as measures of quality performance.

Tummala and Tang, (1996) conducted a comparison between the MBNQA and the EQA. They concluded that both awards are results-oriented and give maximum weight to customer satisfaction. They indicated that EQA is more broad based than MBNQA and covers additional criteria such as financial results and impact on society.

Davis et al, (1996) described both the EQA and MBNQA as being excellent and robust models, however, they observed that MBNQA has often been criticised for its lack of results-orientation, while the EQA has always been much more results-oriented. Looking at both models, we could see that the EQA gives more weight to the results criteria (50 %)
whereas the MBNQA gives lesser weight (45%). Conti, (1997) mentioned that the EQA shows substantial differences with respect to MBNQA at the level of the model, while at the assessment process level, there are no significant differences.

Nevertheless, in the wide application of the self-assessment schemes, some researchers placed their reservations on a specific award while others have their observations on the general award schemes:

Lascelles and Peacock, (1996) stated that "Business excellence models define success for a variety of stakeholders in both financial and non-financial terms". Porter and Tanner, (1996) argue that one major weakness of the EQA framework is that the implementation of action plans is left to the responsibility of the line manager. In comparison with the corrective action plans featured by ISO 9000, for example, the implementation and review processes of self-assessment is less structured. Porter and Tanner, (1996) also suggest that in some cases, e.g. where there is a well-developed tradition of self-assessment within the organisation, it is necessary to develop a hybrid framework that overcomes limitations of individual frameworks such as the EQA. Similarly, in relation to business results, Porter and Tanner, (1996) suggest that this criteria should be extended to include the quality results of products and services, the quality results of business and support services, and the quality results of suppliers.

Wiele and Williams et al., (1996) indicated that the EFQM, (1995) defined "self-assessment" as "a cyclic, comprehensive, systematic and regular review of an organisation activities and results against a TQM model (e.g. MBNQA, EQA and other recognised national or regional quality awards) culminating in planned improvement actions". The following steps were found to be critical in any TQM self-assessment process unit management, developing an improvement plan, linking self-assessment: outcomes with the business planning process, senior management improvement plan targets, and the business unit management team presenting the improvement plan to the senior management monitoring team.

Hewitt, (1997) mentioned that winners of both the European and UK Quality Awards have all been large organisations. She indicated that the model needs to be interpreted for the requirements of small businesses as such interpretation is still lacking.
Aly, (1997) observed that cultural factors do not affect the use of self-assessment significantly and that the practice of self-assessment is very much applicable in the Middle East environment.

Black & Crumley, (1997) identified that the broad spectrum of issues covered by the model throws up a further problem for a company new to the excellence philosophy.

Dyason and Kaye, (1997) observed that companies are in general, a long way from the maturity needed to address fully the criterion associated with self-assessment frameworks.

Longbottom, (1998) indicated that, although, the award schemes provide a practical way for implementing quality improvement, they are not a panacea.

Fountain, (1998) indicated that the majority of the literature on self-assessment proves that there is no 'best' framework, only an appropriate framework, with the choice of model often dependent upon the company's top management preference.

Puay et al, (1998) identified differences and similarities among nine national quality awards through a comprehensive framework consisting of nine criteria items and 28 criteria sub-items. They concluded that national quality awards differ in their emphasis on the framework criteria items. A country's economic development status has been observed to play a contributory role in creating the differences emphasised (Puay et al, 1998). A comparison of major models and the Jordanian King Abdullah II Quality Award is presented in Table 2-8 below.

<table>
<thead>
<tr>
<th>No</th>
<th>Criteria</th>
<th>DP</th>
<th>MBNQA</th>
<th>EFQM</th>
<th>Jordanian</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Leadership</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>Strategy &amp; policy</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>Customer focus</td>
<td></td>
<td>Yes</td>
<td></td>
<td>under resource management</td>
</tr>
<tr>
<td>4</td>
<td>Information &amp; analysis</td>
<td>not explicit (info. is resources)</td>
<td>Yes</td>
<td>not explicit (info. is resources)</td>
<td>under resource management</td>
</tr>
<tr>
<td>5</td>
<td>People management</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td>people management / people satisfaction</td>
</tr>
<tr>
<td>6</td>
<td>Process management</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>7</td>
<td>Resource management</td>
<td>not explicit (part of leadership function)</td>
<td>not explicit (part of Leadership function)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>8</td>
<td>Impact on society</td>
<td>social responsibility (under leadership)</td>
<td>social responsibility (under Leadership)</td>
<td>Yes</td>
<td>under results</td>
</tr>
<tr>
<td>9</td>
<td>Partnership</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>under strategic planning</td>
</tr>
<tr>
<td>10</td>
<td>Results</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Table 2-8 Comparison of the three major IQA's and King Abdullah II Quality Award
Major research on the BEMs implementation has been done in Europe by Van der Wiele et al., (1996), Australia Brown & Van der Wiele, (1996b) and USA van der Wiele et al., (2000a). Wilkes and Dale, (1998), indicated that there are two major advantages of any empirically derived TQM framework. First, it should be generated from different individual perceptions. Second, if it is in a scientifically valid research.

2.4.5 Conclusion

In conclusion the literature review revealed that self-assessment can be a valuable input into the annual business planning cycle; in this way the organisation's strategic direction can perhaps reflect a more business-focused approach. It encourages the integration of a range of quality initiatives which may have been separately pursued across the organisation. Such initiatives could include customer care programmes, business process re-engineering (BPR) and registration as an Investor in People (IP). Literature also suggests that most of the self-assessment tools are based on BEMs /NQA's.

In the short history of the development of NQA's, three awards have played a key role in the quality revolution in Japan, Western Europe, and the USA. They are the Deming Prize (DP), the European Quality Award (EQA), and the Malcolm Baldrige National Quality Award. Their success in raising the performance and competitiveness of industries in their respective countries has drawn much world attention. Many countries have modelled their award programs based on these three awards.

Having reviewed and compared the three main national quality awards, i.e. the MB, EQA and DP, it has been found that each model has its unique award system and set of examination criteria, different from the other two in terms of purpose, overall approach, underlying values and concepts represented in their frameworks, and their contributions to the practice of TQM.

The oldest of the three, the DP, was established to ensure that good results are achieved through successful implementation of Company-Wide Quality Control (CWQC) activities. It serves as a symbol for company-wide quality efforts, the pursuit of continuous improvement, and the extension of quality management to the suppliers of the firm. Its framework is focused on the implementation of a set of principles and techniques, such as
Investigating the factors affecting the development of NQA

process analysis, statistical methods and quality circles. Therefore, most of its criteria are confined to the application of these principles and techniques. Even criteria such as company policy and planning, results, or future plans, which are considered in a broader text in both MB and EQA, are primarily concerned with quality assurance activities and quality results, especially the elimination of defects. Its evaluation dimensions such as cost, productivity, delivery, safety and environment, are not as explicitly measured as in the MB and EQA.

The MB was established to promote quality awareness, understand the requirements for quality excellence, and share information about successful quality strategies and benefits. As the MBNQA was promoted by the US Department of Commerce under a climate of intense industrial competition, its overall approach still places emphasis on customer satisfaction to achieve competitiveness. The principle behind its award criteria is that leadership drives the activities (such as people management, policy and strategy, management of processes, and management of resources) towards excellence in quality results and customers' satisfaction. These results need to be quantifiable, measurable and benchmarked.

Finally the EQA was developed to enhance the position of Western European companies in the world market through accelerating the acceptance of quality as a strategy for global competitive advantage, and stimulating and assisting the development of quality improvement activities. It was also developed for the purpose of supporting the evolution of the European Common Market and the emergence of a new Western European management identity. That is why the model includes dimensions such as the community's perception of the company and employees' satisfaction as measures of quality performance. The rationale for the EQA model is that the results, including customer and people satisfaction, and impact on society, are achieved through leadership driving the enablers, such as policy and strategy, people management, resources, and processes, leading to excellence in business results. As the latest national quality award model, the EQA has introduced a host of new ideas like impact on the community, employee satisfaction, and financial and non-financial results. Some of them, however, are broadly defined and may lead to difficulties in assessment. Nevertheless, the EQA model represents a radically broader guideline for addressing total quality issues.
In summary, the DP focuses on the dissemination of CWQC, continuous improvement and relations with suppliers. The most important aspect is the thorough application of statistical QC techniques. The MB accepts that quality is customer-driven and therefore focuses on customer satisfaction, benchmarking, competitive comparisons with the industry average, the industry leader, and the principal competitors in the company’s key markets. The EQA focuses on the relations with the community, and customers’ and employees’ satisfaction. Finally, another major difference between the DP and the other two is that certain examination criteria such as human resource management, customer satisfaction, impact on society, and operational results are not included in the former.

The literature also revealed that most of the IQA’s developed up to date are based on either one or all of the major NQA’s (DP, MBNQA and EFQM). The models are either copied identically or partially modified to suit the country’s quality maturity, culture and socio-political development. For example, the Egyptian model developed in 1997 and the Jordanian developed in the year 2000 both are based on the MBNQA model. The Israeli model developed in the year 2000 contains features of the MBNQA, whereas the South African model which is also developed in 2000 is based on the EQA and contains features from MBNQA. However, some of the Latin American countries models (Argentina - 96 and Chile – 97) contain features of all three models. On the other hand, The Malaysian model developed in 2000 has its own identity.

Reviewing and comparing of all the above discussed models showed that there is an overwhelming emphasis on the results criterion. The reason for this is logical enough. Without an emphasis on results, an organisation may be misled into implementing a quality management system that will not help it improve the quality of its products and services or its overall organisational performance. Quality systems and processes and strategy and planning received the next highest weights. These two criteria help organisations construct a quality infrastructure that will generate continuous improvement in their quality efforts. The least emphasised criteria are people satisfaction, supplier and partner relationship and Impact on society.

However, these awards are still subject to criticisms. The major ones are the lack of specific regional situation. More research has to be conducted to develop a tailor made TQM model for the specific environmental circumstances particularly within the developing
Investigating the factors affecting the development of NQA countries such as the Middle Eastern countries and the North African context. The Model may contain the criteria, items and areas of the three award models emphasising the root causes that impede TQM implementation based on the country's quality maturity level socio-political and cultural background (Puay et al, 1998).

2.5 Factors affecting the development of NQA's

2.5.1 Introduction

Although the existence of international differences in managerial patterns and practices has been long recognised, studies of management approaches such as TQM tend to take an individualistic perspective best suited to the pursuit of organisations in developed countries. However, developing management models in the developing countries, taking into account relevant ethnic backgrounds, where values and institutions are different, may assist in the improvement of management practices in these countries. It may also help in providing a healthier ground for overcoming the problems of inefficient and unproductive organisations.

As depicted earlier, the existing literature suggests that the development of BEM models should take into account the socio-economic development, culture and quality maturity level of the country. However, TQM in the developing countries is found to be an under-researched area. The widely held views expressed in the literature, that BEM must be tailor made to suit the country's contextual environment, led to the emphasis of this section.

There is a lot of existing studies on business excellence in the industrialised nations yet in the developing countries not so much has been done, and literature supports the topic of study is very much lacking. Thus, there is a need for a strategic approach which allows developing countries to develop their own understanding of business excellence. Some studies suggest that, these countries should base their models on the local economic structure, social characteristics, and TQM maturity level (Puay et al, 1998 and Chuan & Soon, 2000). Whereas, some other countries have used existing models praxis, scaled them down and applied them accordingly in line with their business environment, such as the case of the King Abdullah II Excellence Model of Jordan.
TQM assessment models have played a significant role in the organisations performance excellence, specifically in the western world and the Pacific Rim region. Much of these success stories were studied, analysed and identified. Some quality advocates (e.g., Deming, 1986, Crosby, 1979 and Juran, 1986) suggest the universality of TQM practices whereas others oppose this "universality" such as Goonatilake, (1998), Mersha, (1997), Roney, (1997), Rungtusanatham et al., (1998) and Yoshida, (1989). Newman & Nollen, (1996) have reported that differences in socio-political and socio-economic factors would hinder the cross-cultural transferability and applicability of TQM concepts, principles, and practices.

Jaeger, (1990), Easterby-Smith, et al., (1995), Hofsted (1980), and Laurent (1986) affirmed that most management theories and practices are culture bound. This is because people are products of the family convictions, religious traditions and forms of education and beliefs that shape their behaviours and expectations.

Even though TQM has been very popular world-wide among organisations and academics, there is little evidence of empirical research being conducted on implementing TQM in developing countries (Baidoun & Zairi, 2003). Previous studies on TQM implementations were mostly carried out in the developed countries, and widely acknowledged the limitation of the findings on their applicability across national boundaries (Dawson, 1994; Rao et al., 1999). Muna, (1980) attempted to define the main characteristics of management organisation and behaviour in Arab countries. Others have studied Arab management and behaviour within specific national cultures (Suleiman, 1984). In most of these studies it was reported that contextual factors such as politics and culture played an important role in developing new management initiatives.

2.5.2 Political and Socio-Economic Development

Many countries, especially developing countries, have yet to establish a NQA. It is probably safe to say that the political, economic and social climate of a country will either help or hinder the development of a new NQA programme. The following factors were observed to cause significant hindrance to the successful establishment of a new NQA (Tan Kay Chuan & Lim Chai Soon, 2000).
Ronen, (1986) stated that differences among organisations in different countries are not attributed only to the national culture in which the organisation is located, it could also arise and persist because of other factors such as the country's level of development, natural resources, infrastructure, demography, and level of education. Another argument was raised by Chuan & Soon, (2000), that a country's level of quality maturity is tied closely to its economic development.

In an interview with Quality Digest Junji Noguchi (Executive Director, Union of Japanese Scientists and Engineers (JUSE)) stated that the market structure of an economy refers to the types of industries and the sizes of the organisations present in that country. The structures of large and small organisations clearly differ. So do the management styles adopted. For example, large organisations have a need to emphasise more the cooperation aspects between different work units. Smaller organisations, on the other hand, may place more emphasis on the speed of delivery or the shortening of cycle time. Each NQA has to strike a balance between the emphasis placed on each of its award criteria by considering the combination of types, and sizes of business organisations, that exist in that country (McLaughlin, 1995).

Hambrick, (1981) stated that organisations are embedded in their environment; however they are not so tightly fixed as to totally restrict strategic manoeuvres. DeLone and McLean, (1992) mentioned the importance of considering other organisational and environmental factors when it comes to developing new initiatives. Hamilton, and Davis presented environmental variables that "define the resources and constraints" of the organisation function. For example, "the external environment includes legal, social, political, cultural, economic, educational, resource and industry/trade considerations... The organisational environment is marked by the organisational goals, tasks, structure, volatility, and management philosophy / style", (Hamilton, and Davis, 1980, p. 916).

### 2.5.2.1 Investigating the Economic Development

In July 2001, the United Nations Development Program released the Human Development Report 2001, UNDP, (2001). Central to the report is the statement that technology today is an important factor of economic growth and development in countries. With the internet, agricultural biotechnology advances and new generations of pharmaceuticals reaching the
market, it is time for a new partnership between technology and development. In other words, technology itself has become a source of economic growth (Brown, 2001). Quinn et al., (1996) added that IT is critical for innovation and business competitiveness.

As stated in the above section, an up to date investigation of the Socio-Economic Development is needed when it comes to developing any management model tailor made specifically for the country under study. Accordingly, many techniques do exist for such investigation; these include the Technological Achievement Index (TAI) that was developed under the Human Development Report UNDP, (2001).

**Composition of the Growth Competitiveness Index**

The Growth Competitiveness Index is composed of three component indexes: the technology index, the public institutions index, and the macroeconomic environment index. These indexes are calculated on the basis of both “hard data” and “survey data.” Table 2-9 the Technology Achievement Index, provides these indexes.

<table>
<thead>
<tr>
<th>No</th>
<th>Dimension of the TAI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Technology Creation</td>
</tr>
<tr>
<td></td>
<td>Patents granted to residents (per million people) 2002</td>
</tr>
<tr>
<td></td>
<td>Receipts of royalties and licenses fees (US$ per 1000 people) 2002</td>
</tr>
<tr>
<td>2</td>
<td>Diffusion of Recent Innovation</td>
</tr>
<tr>
<td></td>
<td>Internet hosts (per 1000 people) 2002</td>
</tr>
<tr>
<td></td>
<td>High and medium technology exports (as % of total goods export) 2002</td>
</tr>
<tr>
<td>3</td>
<td>Diffusion of Old Innovation</td>
</tr>
<tr>
<td></td>
<td>Telephones (mainline and cellular, per 1000 people) 2002</td>
</tr>
<tr>
<td></td>
<td>Electricity consumption (Kilowatt-hours per capita) 2002</td>
</tr>
<tr>
<td>4</td>
<td>Human Skills</td>
</tr>
<tr>
<td></td>
<td>Mean years of schooling (age 15 and above) 2002</td>
</tr>
<tr>
<td></td>
<td>Gross tertiary science enrolment ratio (%) 2002</td>
</tr>
</tbody>
</table>

*Table 2-9 the Technology Achievement Index*

*Source: UN development index (2001)*

Researchers categorised countries into two groups: the core innovators and the non-core innovators. Core innovators are countries with more than 15 US (United States) utility
Investigating the factors affecting the development of NQA

patents registered per million population; non-core innovators are all other countries. For the core innovators, extra emphasis is placed on the role of innovation and technology.

**The weightings for the core innovators are as follows:**

\[
\text{Growth Competitiveness Index for core innovators} = \frac{1}{2} \text{ technology index} + \frac{1}{4} \text{ public institutions index} + \frac{1}{4} \text{ macroeconomic environment index}
\]

\[
\text{Growth Competitiveness Index for non-core innovators} = \frac{1}{3} \text{ technology index} + \frac{1}{3} \text{ public institutions index} + \frac{1}{3} \text{ macroeconomic environment index} \quad \text{(i.e. a simple average of the three component indexes)}
\]

**2.5.2.2 Technology index components**

The technology index is calculated for the core and non-core innovators as follows:

- technology index for core innovators = \( \frac{1}{2} \) innovation sub-index + \( \frac{1}{2} \) information and communication technology sub-index

- technology index for non-core innovators = \( \frac{1}{8} \) innovation sub-index + \( \frac{3}{8} \) technology transfer sub-index + \( \frac{1}{2} \) information and communication technology sub-index

Information technology (IT) forms the "back-bone" of several industries such as banking, airlines and publishing, and is an increasingly important value-adding component of consumer products such as television sets, cameras, cars and mobile phone sets. IT is today a dominant force in enabling companies to exploit new distribution channels, create new products and deliver differentiated value-added services to customers. In reality, there is often little difference between an organisation's IT strategy and its business strategy. IT is critical for innovation and business competitiveness (Quinn *et. al.*, 1996):

The Human Development Report 2001 introduced a new index, the technology achievement index (TAI). The TAI aims to capture how well a country is creating and diffusing technology, and building a human skill base, and reflecting the country's capacity to participate in the technological innovations of the network age. The index measures achievements in four dimensions:
Investigating the factors affecting the development of NQA

- Technology creation, as measured by the number of patents granted to residents per capita, and by receipts of royalties and license fees from abroad per capita;
- Diffusion of recent innovations, as measured by the number of internet hosts per capita, and the share of high- and medium-technology exports in total goods exports;
- Diffusion of old innovations, as measured by telephones (mainline and cellular) per capita and electricity consumption per capita; and
- Human skills, as measured by mean years of schooling in the population aged 15 and above in the gross tertiary science enrolment ratio.

The TAI is used to divide various countries into four groups:

- Leaders (TAI above 0.5): topped by Finland, United States, Sweden and Japan, this group is seen at the cutting edge of technological sophistication
- Potential leaders (TAI between 0.35-0.49): topped by Spain and Italy, these countries are seen as having high levels of human skills, and have diffused old technologies widely, but are lacking in innovation.
- Dynamic adopters (TAI between 0.20-0.35): topped by Uruguay and South Attica, this group comprises mainly developing nations who have invested significantly in human skills and are frequently dynamic in the use of new technology, but lack an adequate diffusion of old technology.
- Marginalised (TAI below 0.20): topped by countries such as Nicaragua and Pakistan, these countries are struggling to both diffuse old technologies and to leverage new technologies.

While the UNDP’s TAI and the World Economic Forum’s Growth and Current Competitiveness Rankings do not capture all the complexities of a nation’s technological achievements, they do nevertheless trigger some important questions:

- If developing countries are slow in implementing even old technologies, such as the telephone, are they doomed to lag behind the high-income OECD countries in the adoption and implementation of IT innovations?
- Further, if the effective use of IT is vital for business competitiveness and economic growth, will corporations from these countries be capable of competing effectively in the global arena?
In summary, this section points out the importance and significance of political and socio-economic growth of a nation when it comes to developing a BEM for that nation. Moreover, it provides a technique for measuring the economic growth of a nation. The technology achievement index (TAI). The TAI aims to capture how well a country is creating and diffusing technology, and building a human skill base, and reflecting the country’s capacity to participate in the technological innovations of the network age.

2.5.3 Cultural differences

2.5.3.1 Introduction

Culture is defined as "the collective programme of a human mind, obtained in the course of life, which is common to the members of one group as opposed to another" (Arthur M. Whitehill, 1991). Trompenaars, (1995) defines culture as “a shared system of meaning.” Lewis, (1997) definition of culture was “the customs, beliefs, art and all other products made by particular group of people at a particular time.” Tayeb, (1988) defined culture as "a set of historically evolved learned values and attitudes and meanings shared by the members of a given community that influences their material and non-material way of life."

Every culture reflects a system of values. Sometimes we confuse values with ideology. Values are broader and more orientated towards experience, and defined to be "deep-rooted sets of conventions to which individuals, groups, and societies attach strong sentiments of approval." On the other hand values serve as a useful guide to behaviour. On the contrary, ideology is more concerned with a particular phenomenon as perceived by a special sector of society. Moreover, ideology usually results in a publicly stated position on an important and controversial issue (Arthur M. Whitehill, 1991).

Hofstede, (1991) stated that there are two types of cultures of different natures: national and organisational. He described cultural differences in the following four terms: symbols, heroes, rituals and values. He found that national culture differs mostly at the basic value level, while organisational culture differs more evidently in its symbols, heroes and rituals. He defined national culture, as “the collective programming of the mind which distinguishes the member of one group or category of people from another”. Whereas, he defined organisational culture as: “the collective programming of the mind which distinguishes the members of one organisation from another".
2.5.3.2 National Culture

Hofstede's (1980; 1983; 1991) cross-cultural research study remains the most widely cited in the field, (Sondergaard, 1994; Yoo and Donthu, 1998). Hofstede (1980) established four dimensions of national cultural values: individualism, power distance, masculinity, and uncertainty avoidance. While Hofstede's measure of cultural values has been widely used, several researchers e.g., McSweeney, (2002) questioned its validity. Others have extensively critiqued it, (Shackleton and Ali, 1990; Sondergaard, 1994; Triandis, 1982; Yoo and Donthu, 1998). The generalisability of the research findings has been questioned because the sample is drawn from one large multinational company alone (Triandis, 1982; Yoo and Donthu, 1998). It has been argued that country differences may be confounded by the homogenising influence of a dominant corporate culture that traverses national boundaries (Shackleton and Ali, 1990; Schwartz, 1994b). In addition, it has been suggested that the dimensions of national culture identified by Hofstede may be a product of the period of the study (Yoo and Donthu, 1998).

Despite these concerns, Hofstede’s model is generally accepted as the most comprehensive framework of national cultural values, (Kogut and Singh, 1988; Sondergaard, 1994; Yoo and Donthu, 1998). It has high external validity and has significant correlations with economic, social and geographic indicators, (Kogut and Singh, 1988). Furthermore, Hofstede’s dimensions of national culture have been found to be valid, reliable and stable over time, (Bond, 1988; Chinese Culture Connection, 1987; Kogut and Singh, 1988; Yoo and Donthu, 1998).

2.5.3.3 Organisational culture

Organisational culture can be defined as "the set of constructs that individuals use to describe what is central, distinctive, and enduring about their organisation" (Rieger et al., 1994). It is expressed by researchers as the way an organisation solves its problems, achieves its goals, and maintains itself over time (Harrison and Stokes, 1993). Quinn, (1988) defines organisational culture as the set of values and assumptions that underline the statement “this is how we do things around here.” Chang and Wiebe, (1996) defined organisational culture as “the pattern of values in the organisation that shape its artefacts and behaviour of its member.” Botero, (1998) sees it as “what is normal in the corporation specifically social and behavioural norms,” and adds in saying that most of the
organisation's culture is developed unconsciously by the values and behaviours of the owner and/or manager.

Gagliardi, (1986) claims that the term culture is used in the field of organisational culture research in two different meanings. First, "it refers to the coherent system of assumptions and basic values distinguishing a group and directing its choices". Second, "it refers to a group's distinct set of features or traits, which includes its beliefs, models of behaviour, technology, symbols, and artefacts."

Sinclair and Collins, (1994) have regarded culture as a tool for determining organisational performance. It provides companies with some measure of control over their business processes. It motivates employees with a sense of the importance of distinct organisational ideologies to be inspired, and helps them face the desired outcome by providing ways of expressing and affirming their beliefs, values and norms.

Whitehill, (1991) stated that "culture is a complex and mutually interactive phenomenon in the sense that culture influences an organisation and the organisation, in turn, exerts an influence upon the culture." He adds that culture would be a useful conceptual framework for comparing the industrial organisations, focusing on certain critical variables: (i) values: are basically deep-rooted sets of conventions to which individuals, groups, and societies attach strong sentiments of approval; (ii) relations: values create norms and rules which in turn, specify desirable terms of relationships, (kinship, fealty, status-based, contractual and bureaucracy); (iii) structure: is the corporate structure as influenced (by culture) factors.

Hofstede, (1980) and Laurent, (1986), pointed out that management theories and practices are culture bound. This is because people are products of the family conventions, religious traditions and forms of education and beliefs that shape their behaviours and expectations. Therefore, the culture within an organisation is seen as a structure of a number of factors: (a) behaviours based on people perceptions; (b) norms resulting from working groups; (c) dominant values adopted by the organisation; (d) rules of the game for getting on; and (e) the climate.

Hofstede, (1991) says an appropriate behaviour with a culture is basically a learned behaviour, and not an inherited one which comes from our genes. Culture is shared, and
thus communicated and reflected in groups. And in business surroundings culture may be defined as "the beliefs that pervade the organisation about how the business should be conducted, and how employees should behave and should be treated." He also found that, organisational culture is described as: holistic, historically determined, and related to rituals and symbols, socially constructed, soft and difficult to change. And he suggested that when studying manifestations of culture in general and in management, it is useful to distinguish values from practices. Values are broad tendencies to prefer certain states of affairs over others. These are invisible except in their effects on people's behaviour. Practices, on the contrary, are visible to an observer. They are ways of behaving as well as artefacts and are more superficial and easier to change than values.

![Figure 2-6 Differences between national and organisational culture.](source: Hofstede (1991), Cultures and Organisations, McGraw-Hill, UK.)

Hofstede, (1991) compares national and organisational cultures in the different roles played in each by the manifestation of culture as shown in Figure 2-6 Differences between national and organisational culture. It can be seen that at the national level, cultural differences reside mostly in values, rather than practices. However, at organisational level cultural differences reside mostly in practices. An occupational culture level has been placed halfway between national and organisational, suggesting that entering an occupational field means the acquisition of both values and practices.

### 2.5.3.4 Organisational culture & management style, and their affect on NQA models

Organisations are embedded in their environment; however they are not so tightly fixed as to totally restrict strategic manoeuvres (Hambrick, 1981). DeLone and McLean, (1992)
Investigating the factors affecting the development of NQA

mentioned the importance of considering other organisational and environmental factors. Hamilton, and Davis, (1980) presented environmental variables that "define the resources and constraints" of the organisation function. For example, "the external environment includes legal, social, political, cultural, economic, educational, resource and industry/trade considerations... The organisational environment is marked by the organisational goals, tasks, structure, volatility, and management philosophy/style".

In the literature there are many instances where authors have referred to the relationship between TQM and organisational culture and management style. However, there is little empirically based research that has attempted to understand this relationship. Yet to a certain extent some empirical studies provide evidence that a paternalistic culture, that does not punish people's errors and encourages discussion and analysis, can lead to a successful TQM self-assessment frameworks (Bourne et al., 2000; Franco and Bourne, 2003).

Wilkinson, (1992) utilised the British Quality Association (BQA) definitions of TQM which described it from three distinguished perspectives. The first perspective, where TQM is seen focusing on the "soft" qualitative characters, leading to open management styles, delegated responsibility and Increased staff autonomy. In the second hard perspective, it emphasises the production aspects such as systematic measurement and control of work, setting standards of performance and using statistical procedures. The third perspective is a mixture of these hard and soft features: key ingredients are "an obsession with quality, the need for scientific approach, and the view that all employees are of the one team".

Kekale and Kekale, (1995) argued that giving these three types of culture assumptions about the nature of human beings at work together with the different types of TQM perspectives led to a model where some combinations are more likely to succeed. This model of cultural assumptions and their effect on the results of a TQM approach is shown in Figure 2-7.

The terms of ("theory X" and "theory Y") that are used in the model next were first introduced by McGregor, (1961). The three smaller boxes describe the kind of organisation as explained above. It is then argued that the obvious choices for these organisations, which demand only value/artefact level redefinitions, are noted as primary choices by the
solid arrows. The secondary choices that could be suitable but require some changes in the present culture of the organisation are noted by the dotted arrows. The rest of the choices will need extensive cultural change and are not likely to succeed without a large amount of time and a suitable external threat.

**Figure 2-7 Model of the effect of culture on TQM approach**

Source: Kekale Tauno, Kekale Jouni, (1996)

The model suggests that best results are achieved when there is a match between the basic assumptions that act as a base for an organisation culture, and the assumptions that are included in the TQM approach. It also highlights the importance of the concept of culture and organisational culture in the field of quality improvement.

Harrison’s (1987) and Hofstede’s (1980) works can be used as framework for classifying and mapping organisational culture with corresponding management styles Table 2-10. This framework may be used effectively for the changes needed for team building, organisational development, productivity improvement, human resources development,
etc. Harrison's (1987) powerful diagnostic tool, where classified the four cultures that are basic to most organisations as (Power, Achievement, Role and Support).

<table>
<thead>
<tr>
<th>Organisational culture</th>
<th>Management style</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Power culture (output oriented)</strong></td>
<td>Authoritative Likert, (1967).</td>
</tr>
<tr>
<td>A relative bounded and stable occurrence of social order on the habits of defence to authority Harrison, (1987). In the power culture work is performed out of hope of reward, fear of punishment or personal loyalty towards a powerful individual handy, (1985). The power base of the leader is force or rewards and followers accord status out of fears, deference or utility Pheysey, (1993).</td>
<td>Authorocratic Lipitt and White, (1958). Idealistic prime-mover Quinn and McGrath, (1958). Here, the leader tells other what to do and he/she motivates employees by &quot;the carrot and stick&quot;.</td>
</tr>
<tr>
<td>The outcome of the interaction of motivated people attempting to resolve their own problems, and satisfy their own needs and expectations Harrison, (1987). In the achievement culture, work is performed out of satisfaction in excellence of work and achievement and/or personal commitment to the task or goal Handy, (1985). The power base of the leader is his/her expertise (i.e. knowledge and skills) and followers' accord status out of recognition of contribution Pheysey, (1993). The leader is energised by competitive situations and activity pursues goals. He/she continuously gives direction and encourages participation of employees.</td>
<td>Pheysey, (1993) argue that these leaders believe that employees are already motivated but need encouragement to continuously achieve high performance.</td>
</tr>
<tr>
<td><strong>Role culture (logic oriented)</strong></td>
<td>Empirical except (Quinn and McGrath's 1958). The leader is technical expert and well informed. He/she keeps track of all details and contributes expertise. His/her influence is based on information and control and, as a result, documentation and information management are actively pursued Cameron and Quinn, (1999). The empirical expert leader does what he or she is authorised to do. Leadership tends to be invisible, impersonal and even evasive. The leader practices &quot;selling&quot;, which is an intermediate position between telling and consulting.</td>
</tr>
<tr>
<td>A bounded rational instrument for the achievement of specified goals of where people respond to role Harrison, (1987). Work is performed out of a respect for contractual obligations backed up by sanctions and personal loyalty towards the organisation. Here, the power base of the leader is legitimacy and followers accord status out of respect of the office. The leader does what he/she is authorised to do. Leadership tends to be invisible, impersonal and even evasive. The leader practices &quot;selling&quot;, which is an intermediate position between telling and consulting.</td>
<td>Leadership tends to be invisible, impersonal and even evasive.</td>
</tr>
<tr>
<td><strong>Support culture (employee oriented)</strong></td>
<td>A good boss is concerned and responsive to the personal needs and values of others. He uses his position to provide satisfying and growth-stimulating work opportunities for subordinates Handy, (1985)</td>
</tr>
<tr>
<td>The Mobilisation of bias through personal relationships Harrison, (1987). In the support culture work is performed out of enjoyment of the activity for its own sake and concern and respect for the needs and values of the other persons involved Handy, (1985). Here leaders need to have personal charisma that symbolises esteemed values. Followers accord status out of liking or identification Pheysey, (1993). The leader in the support culture is people oriented, caring and empathic. He/she listens to the views of subordinates and takes them into account. His/her influence is based on getting people involved in the decision-making and on mutual respect and trust. This leader continuously manages conflict and seeks consensus and actively pursues participation, commitment, openness and morale Cameron and Quinn, (1999).</td>
<td>Predominant management styles: Participative Likert, (1967). Democratic Lipitt and White, (1958). Existential team-builder Quinn and McGrath, (1958).</td>
</tr>
</tbody>
</table>

Table 2-10 Organisational culture vs. management styles

Source: Harrison's (1987)

Pike and Barnes, (1994), argued that in order to apply TQM in an organisation; managers must change from authoritarian and remote to participative and accessible. Supervisors must change from bosses to coaches. Staff support people must change from monitors and approvers to facilitators and advisors. Every one must become obsessed with quality and with customers. Table 2-11 shows the cultural change as follows.
Investigating the factors affecting the development of NQA

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grapevine and secrecy</td>
<td>Open communication</td>
</tr>
<tr>
<td>Control of staff</td>
<td>Empowerment</td>
</tr>
<tr>
<td>Inspection &amp; fire-fighting</td>
<td>Prevention</td>
</tr>
<tr>
<td>Internal focus on rates</td>
<td>External focus on customer</td>
</tr>
<tr>
<td>Cost and schedule</td>
<td>Quality of conformance</td>
</tr>
<tr>
<td>Stability seeking</td>
<td>Continuous change and improve</td>
</tr>
<tr>
<td>Adversarial relations.</td>
<td>Co-operative relations</td>
</tr>
<tr>
<td>Allocating blame</td>
<td>Solving problems at their roots</td>
</tr>
</tbody>
</table>

**Table 2-11 Cultural Change**


However, achieving cultural transformation requires a smooth and gradual transition, with some reassurance given to workers that such transformation will in the long run be healthy to the organisation and its well being.

On the other hand there is a need to consider a dangerous point in the journey of quality management implementation and the cultural change as suggested by Barnett, (1991). He indicated that changes that lead to improved efficiency would lead by the end to loss of jobs and workers. For this reason workers are unlikely to support quality initiatives when, in the long run, they will be the victims of their efforts. This is a major problem that has to be confronted in adapting quality, especially in developing economies where there may not be enough industrial capacity to absorb workers displaced from one industry.

To avoid this, management will need to invest, in the future of their workers since people represent the greatest asset of any organisation. Thus, they must adopt a long-term view and develop their human resources through education, on-the-job training and enrichment and awareness, programmes.
2.5.3.5 Conclusion

The nature of TQM assessment framework requires rethinking of how the people do their jobs and it focuses on several key values which should be encouraged for successful implementation in the organisations; TQM therefore adds another dimension to the importance of cultural issues. Although studies reported in the literature lack any formally defined relationship between the different aspects of TQM and the dimensions of culture, those few studies mentioned in this section do justify the need to consider the issue of the culture in this research.

The literature review spotlights the problems of implementing quality management practices in developing countries where national and organisational cultural differences exist and concluded that most of the improvement approaches, theories, models and techniques are found to be culturally sensitive, and described by many researches, as having built in culturally derived assumptions. This situation is contributing to the failure of many of these approaches when implemented in a culture different from their originated culture. A critical reason is the resistance of management and employees to change and requirement prescribed by these approaches. Moreover, the focus for change of most of these business improvement frameworks and models is primarily technical, dealing with systems and procedures while neglecting human aspects.

Different corporate cultures and social systems in different countries have resulted in localised philosophies and approaches towards total quality management (TQM). An NQA that is established in a western country will probably not suit a Middle-East or Asian country due to the cultural differences. US corporations, for example, are highly results-oriented. They perceive achievements as self-initiated ventures. There is also a strong degree of individualism in their corporate culture. The Japanese, on the other hand, adopt a consensus approach to achieving success. They are also well known for their long-range perspective in employee management. On the other hand, NIQA of Israel, whose basic model is the MBNQA, focuses on teamwork throughout its criteria; teamwork is not a main feature of the MBNQA. This may be due to the Israeli culture that emphasises group harmony, unity, and loyalty.
2.5.4 TQM maturity level

Many organisations world-wide are adopting the TQM philosophy and employing self-assessment frameworks using the criteria of the excellence models such as the MBNQA model and the EQA (Conti, 1997; Gadd et al., 1997; Van der Wiele et al., 1996a). The TQM assessment models provide a framework for organisations to assess the status of their implementation of the critical practices. In aggregate, the results of the self-assessment define the TQM maturity of an organisation at any point in time. Attaining a high TQM maturity level is a must for those organisations that want to achieve and sustain high quality output that meets customer expectations. A TQM maturity level that includes the constructs that represent all the practices critical for attaining performance excellence that demanded by the self-assessment models such as those of the above.

Different organisations have different rates of progress in their quality improvement and management activities. Calingo, (1995) stated that the process of integrating strategy formulation and TQM to develop strategic quality management in excellent organisations evolved along similar lines. He pointed out that this evolutionary process occurs in five different stages, occurring at different rates for different organisations.

Hence, the literature revealed eight different TQM maturity grids as described by quality practitioners as presented on Appendix V attached. Regardless of the particular TQM maturity grid, the highest level, which could include more than one of the bands shown Appendix V depending on the definitions adopted, represents the ideal state of TQM implementation.

Many studies on the TQM maturity grid describe the best practices of the high-TQM maturity organisations. The studies by Garvin, (1991) and Dale and Smith, (1997) spelt out the best practices of the top bands of organisations measured against the Baldrige Award and the European Quality Award, respectively. The studies by Crosby, (1979); Dale, (1996); Kaye and Dyason, (1995); and Peters, (1994) focused on describing the best practices of the top bands of organisations relative to the practices of other organisations.

Researchers agree that organisations within developed and developing countries are at different stages of the quality maturity cycle and at any instance, organisations can be
placed at different TQM maturity levels. However, there is no consensus on the number of levels and their definitions. A country's level of quality maturity is tied closely to its economic development. At different stages of the quality maturity cycle, emphasis shifts among the various criteria (Chung, 2001). As explained by Krasachol, et al., (2001) the position of quality management varies widely in the developing countries; they suggested some criteria for the assessment of national development in quality management which are represented in the five stages shown in Table 2-12 next.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Unaware stage</th>
<th>Basic Stage</th>
<th>Developing Stage</th>
<th>Mature Stage</th>
<th>Sustaining Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Nation-Wide promotion of quality through education and training</td>
<td>None</td>
<td>Mainly government</td>
<td>Mainly by government but private sector begin to be actively involved</td>
<td>The government still plays an important role by cooperating with private sectors</td>
<td>Mainly by non-profit organisations which are private sectors</td>
</tr>
<tr>
<td>2. Competent consultants</td>
<td>None to very few in number</td>
<td>Very few local competent consultants need to import foreign consultants</td>
<td>Start to develop local consultants using fewer foreign consultants</td>
<td>A number of local consultants who are competent, start of national professional bodies</td>
<td>A large number of professional consultants Established profession</td>
</tr>
<tr>
<td>3. Standardisation and accreditation system</td>
<td>None</td>
<td>Setting up a national standard body to take charge of standardisation and accreditation</td>
<td>The national system more established but still has deficiencies in coverage/scope</td>
<td>Have had a complete standardisation and accreditation system for some times</td>
<td>Certification and accreditation system is robust and mature</td>
</tr>
<tr>
<td>4. ISO 9000</td>
<td>Very few companies</td>
<td>A small number of companies and most of them are exporters</td>
<td>More companies but most of them are big companies</td>
<td>A large number of companies and local companies including SMEs</td>
<td>Almost all (if they want) reaching saturation point</td>
</tr>
<tr>
<td>5. TQM</td>
<td>None</td>
<td>A few companies most of them are joint venture and foreign owned</td>
<td>Spreading to the more advanced local companies</td>
<td>A large number of companies implement TQM</td>
<td>TQM is well known and implemented widely in industry</td>
</tr>
<tr>
<td>6. NQA</td>
<td>None</td>
<td>Setting up a National Quality Award process</td>
<td>Launching NQA programme limited understanding or take-up in industry</td>
<td>An established NQA for some time, companies using the criteria</td>
<td>NQA is well developed and widely used many applications</td>
</tr>
<tr>
<td>7. Perception of quality level in global market</td>
<td>Very poor</td>
<td>Poor but cheap</td>
<td>Medium and cheap</td>
<td>Good and reasonable price</td>
<td>Excellent and good price</td>
</tr>
<tr>
<td>8. R&amp;D</td>
<td>None</td>
<td>A few isolated industry projects</td>
<td>Limited and mainly in government, academic institutes and big companies</td>
<td>Starting to have cooperation between academics and industry practitioners</td>
<td>R&amp;D is common</td>
</tr>
</tbody>
</table>

Table 2-12 Criteria for Assessment of TQM National Development

Source: Krasachol Ladawan, Guh Eric, (2001)

In conclusion, it was found that organisations with a high level of quality maturity are likely to be enthusiastic towards TQM. These organisations will understand the need for quality improvement and are therefore less likely to require as much training and education. They will be able to implement TQM more quickly and will do better in applying the proposed self assessment model devised. However, it is important that quality activities presently being used within the Libyan industry are integrated within the TQM approach. This will ensure
they do not become isolated with regard to the allocation of resources, and that they can still operate successfully.

Countries such as Mauritius, New Zealand, Ireland and Sweden acknowledge the different emphasis that needs to be placed at the different stages of progress in the development of an organisation's quality management system. In their bid to help local organisations better assess their quality management efforts; the NQA administrators have designed their respective NQA programmes to recognise an organisation's efforts at the various stages of quality improvement. Among these countries, Mauritius is the only country that clearly states the different criteria applicable to the different categories of applicants.

2.6 Literature analysis and research gap

2.6.1 Introduction

An exhaustive review of the literature, demonstrated that many quality award frameworks have been developed all over the world, and differ to some degree in the way they are presented, and in the specific criteria used (Puay et al., 1998). However, overall, there is considerable similarity on the general translation of the quality management philosophy into the business model used. With the common direction and an increased consistency of purpose, quality award frameworks can provide organisations with opportunities to build greater unity in pursuit of initiatives that affect improvement (Hill, 1996 and Shergold and Reed, 1996). E.g. the EQA model was designed to provide organisations with a structured approach for achieving business excellence EFQM, (2001). The demand for organisations in all sectors to achieve "business excellence" status is increasing. The competitive forces that managers face today, and will continue to confront in the future demand organisational excellence Ulrich, (1998).

The authors Juran, (1996); Dean and Bowen, (1994); Ford (2000) agree that quality awards, such as the Deming Prize, Malcolm Baldrige National Quality Award and the European Quality Award, are currently the most demonstrative philosophies of the TQM discipline. Researchers have identified and characterised notable differences between these three models. For example Brigitte Oger and David E. Platt, (2000) have compared the EFQM and Baldrige models and found that despite the fact that these two models are sharing a common goal for identifying and measuring the firm characteristics associated
Investigating the factors affecting the development of NOA

with the process of value creation, they propose very different descriptions and weightings of the elements of that process.

Many business leaders in developing countries argue that "it worked in Japan so why shouldn't it work here" whenever the issue of transferring new technologies, and quality in particular, arises. However, this argument often "fails to recognise the importance of culture and its influence in transplanting what has worked on a different cultural set-up without reviewing its compatibility or incompatibility with different cultures" (Madu, 1997). The success experienced by Japanese industries over the last three decades can probably be attributed to their culture, and the compatibility between social and economic factors (Madu, 1997).

The literature review of this study revealed that TQM frameworks have failed in certain circumstances. These failures have been attributed to the pre-existence of factors that conflict with TQM philosophy and practice. These include lack of cooperation, excessive time and financial commitments. Shortcomings of TQM frameworks or the reasons for their failure can be attributed to implementation problems (Roger et al., 1994) or a disregard for contextual factors (Silkin et al., 1994). Reasons for friction or failure to implement a quality programme may include a mismatch of organisational culture (Kekale and Kekale, 1995), a lack of management leadership and inadequate training (Doyle, 1992).

The principles of total quality management (TQM) are often applied within large organisations by using models developed in the context of large organisations, such as the business excellence model (BEM) (Brown et al., 1999). Hence, there is growing evidence that companies are beginning to seek assistance with defining "drivers" in order to achieve the focus and impetus against which self-assessment can take place (Sinclair and Zairi, 1995). It was also typical for the European situation that many traditional national quality organisations were critical about the framework and modified the model to meet their specific needs (Hardjono & Hes, 1996).

Although existing performance management frameworks offer the potential of a fully integrated strategic performance measurement system, there are two main drawbacks; first, they are generic so opportunities for learning are limited; and second, they are inflexible and unlikely to offer the responsiveness to change required (Feurer and
Investigating the factors affecting the development of NQA

Chaharbaghi, 1995). Key to strategic learning is the ability to reflect on outcome. Any performance management framework therefore needs to embody sufficient information to enable reflection and evaluation to take place; it needs to encourage the dynamism necessary to cope with complex and changing conditions.

2.6.2 Research Gap

The following presents a brief summary of the major issues identified in the literature review that justify the need for developing a specific NQA model tailor-made for Libya:

1. No real attempt has been made to develop a business improvement model that addresses the attributes which affect the development of a NQA model. They have been always developed and implemented in isolation of detailed investigations to the attributes that affect their development. They are deficient in identifying a well-established linkage between the TQM-CSF and the national environmental conditions.

2. Most of the existing IQA's present list of characteristics. These characteristics depend on the regional findings of large organisations. This deficiency is found to exist on two levels. The first is on the level of identifying a causal relationship between their components with little or no emphasis on the logical link of the contextual domain. While the second is linked to large organisations and neglecting small and medium size enterprises.

3. TQM models have deficiencies in certain areas. The advent of the widely spread quality award schemes has resolved many of these deficiencies; nevertheless, these awards are still subject to criticisms by many researchers and practitioners. The major ones are: the lack of universality among the different awards, their lack of integration within the business planning process of the organisation, and finally the awards are only applicable to large organisations who have been undertaking quality improvement for a number of years where a certain level of knowledge is necessary.

4. NQA's are applied mostly at an operational or tactical level with little attention being given to their integration within the overall activities of the organisation. The genuine danger is when these approaches become a missing link: a programme that runs parallel to the main thrust of the organisation.
1. A major reason that influences NQA's success is concerned with the socio-economic, cultural sensitivity of the approach, and TQM maturity. Many improvement theory approaches are described by many researchers as having built-in culturally derived assumptions. This situation is contributing to the failure of many of these approaches when implemented in a culture different from their western-originated culture. A critical reason is the resistance of management and employees to changes and requirements prescribed by these approaches.

2. In many business initiatives, such as ISO 9000 and some other frameworks, the focus for change is primarily technical, dealing with systems and procedures while neglecting human aspects. This problem could be partly attributed to the founders who are often technical people, whereby their strengths and expertise are focused on the mechanical 'hard' part of the process rather than the 'soft' human issues of the process. Their knowledge of organisational theories is often limited.

To sum up, after this comprehensive and detailed review of related and relevant literature, some suggestions on the characteristics of the proposed NQA model are:

1. The model must be tailor-made for the Libyan Industry and allow for the integration of the different improvement approaches as appropriate. The objective is to synthesis theories and approaches from previous literature on TQM, previous IQA performance assessment models, into a coherent model that will help Libyan organisations achieve the desired TQM performance assessment level.

2. The model development process should allow for investigating the attributes that affect the development of NQA's such as national environmental conditions (socio-economic, culture), and TQM maturity and mapping them into the identified CSF's found necessary for the success of TQM implementation within the country. Accordingly a developments process framework should be devised which should contribute to the development of a tailor made NQA Model for Libya.

3. The possibility of adapting a generic model, to be implemented in small and medium sized organisations, as well as larger organisations.

4. The model should place special attention to the human and behavioural factors in addition to focusing on other technical and operational issues.

5. The model should allow for investigating the level of dynamism in the external...
environment of the organisation.

6. The instrument to be developed in this research project should evolve over the three main TQM principles: customer focus, participation and teamwork, and continuous improvement synthesised with the three main NQA attributes; (socio-economic, culture, and quality maturity). The TQM principles are mapped on the three attributes based on their relevance constituting the desired NQA model.

7. The proposed model should have the main NQA constituents of the enablers and results built over the business processes and its results.

8. Finally, globally and locally responsive to a changing business environment, internationally comparable, reflects best practice, a framework that will lead to a long-term business success, supported by research evidence, simple to understand, and its design facilitates the use of multiple types of assessment.

In summary, the literature review has appeared to answer the research question. As stated by Kanji, (2000) above that the existing IQA's can be used as a base for developing a NQA. However, national environmental conditions ought to be highly studied and carefully regarded when it comes to developing an NQA; as indicated by Kay et al., (2003) that the award criteria must be applicable to the economic, social and cultural climates and condition of the country.

As the main objective of this research is to investigate the factors affecting the development of an NQA for Libya, therefore, in the coming chapter, the author intends to expand more on the background of Libya and its national environmental conditions (socio-cultural, political-legal, economic, and education), through a PEST analysis.

2.6.3 Conclusion

The literature concluded that National Quality Awards play an important role in promoting and rewarding quality and business excellence. They represent a country's efforts to enhance translational reputation in this increasingly competitive world market. The NQA's differ in their emphases on the framework criteria items. A country's economic development status has been observed to play a contributory role in creating the differences emphasised.
The analysis of the major criteria contained within some NQA's show that there is an overwhelming emphasis on the Results criterion. The reason for this is logical enough. Without an emphasis on results, an organisation may be misled into implementing a quality management system that will not help it improve the quality of its products and services or its overall organisational performance. Quality Systems Processes, Strategy and Planning received the next highest weights. These two criteria help organisations construct a quality infrastructure that will generate continuous improvement in their quality efforts. The least emphasised criteria are People Satisfaction, Supplier and Partner Relationship and Impact on Society. The analysis revealed many instances of similarities and differences. These are to do with a host of reasons, including cultural and economic development (Chuan & Soon, 2000)

The decision on which award categories to include depends largely on the size and type of organisations at which the NQA organiser targets the award scheme. All the NQA programmes evaluated categorise their applicants and awards based on the size and type of organisation. Almost all have separate categories for manufacturing and service organisations. The purpose of categorising the awards evens out the competition and this has a high face value for applicants. It also paves the way for later benchmarking which will be more concise due to this categorisation. At this juncture, some countries establish different award categories for larger and smaller organisations (e.g. different awards for MNCs and SMEs for the EQA) or for different industry types (e.g. the TNQA also has award categories for the manufacturing and services sectors). NQA administrators use several ways to develop their set of award criteria.

The NQA criteria serve as the basis for assessing the applicants' performances for the award as well as for compiling the feedback reports. To achieve these two purposes, the award criteria must be broad enough to cover all the major aspects of a successful quality management system. At the same time, the award criteria must be applicable to the economic, social and cultural climates and condition of the country (Kay et al., 2003).

Despite the fact that these models principles have been systematically proven to be universally valid (Kanji, 2001), writers such as (Sila and Ebrahimpour, 2002; Porter and Tanner, 1996; Tan, 2000; Kanji, 2001; and Thiagarajan & Zaïri, 2000) have stated that there is absence of a universally accepted TQM model so far. Various quality advocates
Investigating the factors affecting the development of NQA

(Roney, 1997; Madu, 1997; Smith et al., 1998; and Nasierowski & Coleman, 1997) argue that the process of transferring TQM should be improved by recognising that the activities involved were not culture free, and that these models be investigated in the contextual domain. Literature has noted numerous stories on the problematic issues relating to the development process of BEM and how they affect its outcomes. Closer examination of literature that explores this development process reveals three major factors, which have been attributed as key determinants of its success: political and socio-economic development, organisational culture and TQM maturity level (Tan. et al., 2000).

Furthermore, Quality Awards claim to be a vehicle for organisational learning in the journey towards "business excellence". The evidence suggests, however, that there is comparatively little use of these awards in the developing countries and particularly in the Middle East region. Further investigations reveal some significant shortcomings in the interpretation and value of the models in achieving the so called "excellence" or state of competitiveness (Conti, 1993). First, the validity of the business results category is questioned due to the bias introduced by the "user's judgement" and the difficulty with measuring the link between internal improvements (enablers) and business results. Second and more significantly, are the problems inherent in interpreting these models. Shortcomings include the language used in these models and lack of knowledge of participating managers about the company, and particularly the ability to identify "key processes". Researchers conclude that a certain stage of quality maturity is required before award frameworks and models can be used in a meaningful way (Reed et al., 1996).

However, existing and well-established NQA model's criteria that cover all the major aspects of a successful TQM system can be used as a base for developing a NQA (e.g, the DP, the MBNQA and or the EQA) (Kanji, 2001).

Finally, note that with the exception of the MBNQA, the majority of the National Quality Awards are relatively new, all having originated after 1990. Many NQA's are still at that stage of accumulating learned experiences through assessing organisations for the awards. This will probably be accompanied by changes to criteria item weightings and emphasis, just as the MBNQA has experienced. However, the establishment and maintenance of a NQA programme is a never-ending task requiring continual improvement.
and refinement. Award criteria and emphases change with the economic, social and political environmental conditions of the country. Although foreign NQA and their expertise cannot be adopted, much can be learned from the history and difficulties faced by the pioneering NQA's as well as the case of Dubai Quality Award.
Chapter 3 Libyan National Environmental Conditions

3.1 Introduction

For the past two decades, TQM approaches have witnessed widespread implementation across the globe. The most leading of these TQM approaches are Business Excellence Models (BEM). Three such models that are well known and widely accepted are the DP, MB and EQA. These models are highly respected within their respective geopolitical domains: Japan for the DP award, the United States for the MB award and Europe for the EQA Model. These models have been widely accepted by both academics and practitioners as sound approaches for the assessment of TQM performance. They grew out of the TQM initiatives of the 1980s; they propose a similar measurement framework based upon leadership and strategy, resources, and the processes that apply them, and observation of resource-level outcomes leading to overall firm performance and value.

Even with this widespread acceptance of quality management, however, not all attempts to implement quality practices in the international arena have been successful. Large differences in quality management have been found across countries (Maheshwari and Zhao, 1994; Zhao et al., 1995a), and multinational corporations have recognised that implementing quality practices internationally can be difficult (Eroglu and Machleit, 1989; Malhotra et al., 1994; Papadopoulos et al., 1990). Rather than simply trying to emulate the Japanese quality process, Greene (1993) stresses the importance of taking advantage of the unique competitive advantages that various nations offer. It is, therefore, important to understand the various socio-cultural, political, legal, economic, and educational factors that influence quality management practices within the country under study.

Unfortunately, the literature on linking quality management practices to national socio-cultural, political-legal, economic, and educational environmental conditions has not been undertaken in the past. This chapter will present the Libyan environmental conditions for paving the way to identify the relationships between national environmental conditions (e.g. socio-cultural, political-legal, economic, and educational factors) and dimensions of quality management (e.g. strategic quality planning, customer focus and satisfaction, human resource development and management, information and analysis, management of process quality, and quality and operational results).
3.2 National environmental conditions

The national environment can be classified into four major categories (Oliff et al., 1989): socio-cultural, political-legal, economic, and educational. According to Oliff et al. (1989), the socio-cultural dimension includes factors such as attitudes toward managers, perceptions of authority, inter-organizational cooperation, attitudes toward achievement and work, class structure and individual mobility, attitudes toward wealth and material gain, attitudes toward scientific management, attitudes toward risk, national ideology, beliefs about foreigners, and the nature and extent of nationalism. Cultural effects of customs, languages, attitudes, motivation, social institutions, status symbols, and religious beliefs have all been documented in the international business literature. Although many subcultures may exist within a country, the term "national culture" is used to describe the general practices of nations (Hofstede, 1980). Cultures have been measured along a number of dimensions, including individualism-collectivism, power distance, masculinity-femininity and uncertainty avoidance (Hofstede, 1980), and high-low context (Hall, 1981).

The political-legal dimension includes conditions such as defense/military policy, foreign policy, political stability, political organization, flexibility of law, the role of government, labour organisations, local needs, industry standards, political ideology, political stability, relevant legal rules for foreign businesses, international treaty obligations, import-export restrictions, international investment restrictions, profit remission restrictions, and exchange control restrictions. The economic dimension includes factors such as central banking systems and monetary policy, fiscal policy, economic stability, organization of capital markets, market size and type, social overhead capital, exchange rate stability, market taste and demand, geographic dispersion, the quality of infrastructure, international trade patterns, membership and obligations in international financial obligations, international competition and international standards. Finally, the educational dimension includes items such as local literacy levels, specialized vocational training and education, higher education, and management programs (Oliff et al. 1989). In this chapter, the focus is on the existing national environmental conditions within Libya, due to the differences that exist between countries on the four environmental factors discussed above.
3.3 Libyan background

Libya is an Arab nation located in North Africa; with a population estimated to be 6.000 million and a growth rate of 2.3 % per annum. Libya sits on an area of land of 1,759,540 square km, it lies on the southern part of the Mediterranean Sea with 1,685 km of coastline, and is bordered by Chad and Niger from the south, Egypt & part of Sudan from the east, and Tunisia and Algeria from the west, as per Figure 3-1 (Mediterranean regional map).

![Figure 3-1 Mediterranean regional map](image)

Libya is the second-largest oil producer in Africa behind Nigeria. Its crude is of the highest quality, whose characteristics are not easily found elsewhere, and it requires much less refining because of its low sulphur content.

Despite its unique treasure, Libya's production capacity is relatively small, standing on 1.5 mbd of crude, 2% of world supplies. This is less than 50% of the country's 1970 production peak level, which was around 3.3 million barrels per day (mbd.)

With proven oil reserves at 36 billion barrels, the Libyan Government wants to increase oil production to 3 mbd by 2010. More than US$10 billion in investment is required to reach this target: US$6 billion for exploration & production activities and US$4 billion for refining and petrochemical plant development. Libya's proven gas reserves amount to 46.4 Ton cubic feet (Tcf); potential reserves are as high as 70-100 Tcf. A brief Libyan profile is presented in Table 3-1 Libya profile.
In the past, Libya has been subjected to varying degrees of foreign control that greatly affect its economy. Phoenicians, Carthaginians, Greeks, Romans, Vandals, and Byzantines have ruled all or some parts of Libya for several decades. The Greeks and Romans left impressive ruins. Libyans embraced Islam in the 7th century AD. Libya was part of the Islamic Ottoman Empire until Italy invaded Libya in 1911. From 1943 to 1951 different parts of Libya were under the control of Britain, France, or Italy. Libya was the first country to gain its independence through the United Nations, in December 1951 and became the United Libyan Kingdom. In 1969, a military-led coup abolished the monarchy.
and proclaimed the new Libyan Arab Republic, headed by Colonel Muammar Al Gathafi. The next section examines the Libyan national environmental conditions in more details.

3.4 P.E.S.T analysis of Libya

It was found in the literature review (chapter 2) that the National Environmental Conditions are as major factors that affect the development of TQM self-assessment framework. Therefore, these National Environmental Conditions will be investigated applying the P.E.S.T analysis approach (Political, Economic, Social, and Technological).

3.4.1 Political

The history of Libya dates back to thousand of years, and has a very old historical era where after centuries under the Carthaginian, Byzantine, Roman, and Ottoman empires, Libya had fallen to the Italians in 1911-12. After World War II and the Italian rule the British suggested dividing Libya into three spheres of influence, which include Cyrenaica (Benghazi and its surroundings in the north west) under Britain, Tripolitania (Tripoli nowadays - in the North east) under Italy, and the Fezzan (Sebha in the south of Libya) desert area under the French. The division was opposed by Arab nationalists. During the 1949 the United Nations agreed to create an independent state of Libya. A national assembly devised a monarchical constitution and offered the throne to Idris Sanusi, the Emir of Cyrenaica.

In September the first of 1969 a military coup led by Muammar Al Gathafi and other young officers, Libya was declared an "Independent, Socialist, Democratic Arab Republic". Ever since a Revolutionary Command Council (RCC) was formed, which was vested with all Legislative, Executive, and Judicial powers according to the Provisional Constitutional Declaration announced on September 11, 1969. That document served as a power-base for the regime until March 2, 1977, when Al Gathafi announced the "Declaration of People's Authority"- a type of political structure that was founded by Colonel Al Gathafi "Green Book", which called for a new "Universal Theory" that is supposed to provide a substitute for and inherit both capitalism and communism.
The Provisional Constitutional Declaration was for a long time the only official document specifying the constitutional set-up of the country. It has never been repealed officially, though on March 2, 1977, Colonel Al Gathafi announced the "Declaration of People's Authority".

In fact, the political profile now views many changes in government policy that could lead to stabilising after the long-term of de-stabilising nationwide and worldwide act in Libyan market. Additionally, the recent political act has full diplomatic relations that has been established with Britain, after they were broken off for more than a decade. The British government has declared that its new approach to foreign policy includes deepening alliances and promoting prosperity by widening commercial relations. As well, the expectation has given European oil companies to play a major role in Libya's oil sector and industries over the forecast horizon (DRI.WEFA, 2001).

3.4.2 Economic

The Libyan economic system since the revolution in 1969 was viewed as socialist. The socialist oriented economy depends primarily upon revenues from the oil sector, which contributes practically to all export earnings and about one quarter of the GDP. These oil revenues and a small population give Libya one of the highest per capita GDPs in Africa, but little of this income flows down to the lower orders of society. In fact, Libya's economy and income rates are dominated by the hydrocarbon sector, which currently accounts for one-third of national output and generates more than 95% of foreign exchange earnings. Actually, oil and gas reserves have formed the backbone of the Libyan economy during the last 40 years until now. Libya has made a lot of changes since 1950's, moving from one of the poorest and most backward nations of the world to a one that is more moving towards the development stage. Libya has established modern facilities in several sectors of its economy such as education, health-care, electricity, housing, communication-facilities, agriculture, and other areas and specialities. In fact, Libya has developed in a variety of areas, where the most important of these were development and enhancement of education and other demographics, as well as, many indicators related to modernisation in Libya. Table 3-2 below provides some Indicators related to such modernisation. Whereas, Table 3-3 explains the development of major indicators over time in education and other demographics as indicators related to modernisation in Libya.
Investigating the factors affecting the development of NQA

<table>
<thead>
<tr>
<th>Year</th>
<th>Electricity in consumption (per capita KW/h)</th>
<th>Population per doctor</th>
<th>Under-five mortality rate (per 1000 live births)</th>
<th>Telephone lines (per 100 people)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1959</td>
<td>35</td>
<td>7250</td>
<td>290</td>
<td>0.7</td>
</tr>
<tr>
<td>1964</td>
<td>60</td>
<td>4755</td>
<td>-</td>
<td>1.1</td>
</tr>
<tr>
<td>1969</td>
<td>130</td>
<td>2611</td>
<td>87</td>
<td>-</td>
</tr>
<tr>
<td>1974</td>
<td>260</td>
<td>1100</td>
<td>69</td>
<td>1.5</td>
</tr>
<tr>
<td>1980</td>
<td>1600</td>
<td>960</td>
<td>58</td>
<td>2.4</td>
</tr>
<tr>
<td>1995</td>
<td>3300</td>
<td>715</td>
<td>39</td>
<td>5.9</td>
</tr>
</tbody>
</table>

Table 3-2 Indicators related to modernisation in Libya (2).


<table>
<thead>
<tr>
<th>Year</th>
<th>Total students ('000)</th>
<th>Male students (%)</th>
<th>University students ('000)</th>
<th>Female students (%)</th>
<th>Women in labour force (%)</th>
<th>Income from oil (US million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1878/77</td>
<td>0.06</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1911/12</td>
<td>0.1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1921/22</td>
<td>0.6</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1931/32</td>
<td>4.4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1938/39</td>
<td>6.9</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1943/44</td>
<td>6.7</td>
<td>0.5</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1948/49</td>
<td>25.1</td>
<td>1.2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1950/51</td>
<td>32.8</td>
<td>11.0</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1955/56</td>
<td>70.1</td>
<td>16.0</td>
<td>0.03</td>
<td>-</td>
<td>-</td>
<td>16.0</td>
</tr>
<tr>
<td>1960/61</td>
<td>136.4</td>
<td>18.0</td>
<td>0.7</td>
<td>3.3</td>
<td>2.1</td>
<td>6.6</td>
</tr>
<tr>
<td>1965/66</td>
<td>227.5</td>
<td>25.0</td>
<td>1.9</td>
<td>8.9</td>
<td>3.3</td>
<td>179.8</td>
</tr>
<tr>
<td>1970/71</td>
<td>407.4</td>
<td>34.0</td>
<td>5.2</td>
<td>10.7</td>
<td>6.2</td>
<td>1351.2</td>
</tr>
<tr>
<td>1975/76</td>
<td>743.5</td>
<td>43.0</td>
<td>13.4</td>
<td>17.6</td>
<td>7.6</td>
<td>8848.0</td>
</tr>
<tr>
<td>1980/81</td>
<td>973.8</td>
<td>44.0</td>
<td>19.5</td>
<td>21.6</td>
<td>11.1</td>
<td>22527.2</td>
</tr>
<tr>
<td>1985/86</td>
<td>1224.3</td>
<td>45.0</td>
<td>36.6</td>
<td>28.1</td>
<td>-</td>
<td>6091.8</td>
</tr>
<tr>
<td>1990/91</td>
<td>1492.4</td>
<td>48.0</td>
<td>62.2</td>
<td>43.2</td>
<td>17.6</td>
<td>4181.1</td>
</tr>
<tr>
<td>1995/96</td>
<td>1603.3</td>
<td>48.0</td>
<td>129.2</td>
<td>44.0</td>
<td>22.3</td>
<td>11401.5</td>
</tr>
<tr>
<td>1998/99</td>
<td>1990.7</td>
<td>49.0</td>
<td>165.7</td>
<td>47.7</td>
<td>-</td>
<td>11988.9</td>
</tr>
</tbody>
</table>

Table 3-3 Development of education and other demographics.


However, efforts for diversifying the economy in Libya are evident, though the hydrocarbons sector still accounts for 95% of total exports (much of it to Spain and Italy), 30% of GDP and 75% of total fiscal revenue. Oil revenues declined after the Gulf crisis, prompting some liberalisation measures to stimulate the retail sector. Libyan industries include oil, food processing, and textiles. In particular, the main Libyan crops include: dates, olives, citrus, barley, and wheat. Minerals are: gypsum. Libyan crude-oil reserves during 2000 included: 29.5 billion barrels. Libya’s labour force is distributed on the main
Investigating the factors affecting the development of NOA

A brief economic profile is shown on.

<table>
<thead>
<tr>
<th>Finance</th>
<th>Livestock &amp; Fishery</th>
<th>Trade Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monetary Unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td>Dinar (0.54 = $1 US)</td>
<td></td>
</tr>
<tr>
<td>Per capita GDP</td>
<td>$38 billion</td>
<td></td>
</tr>
<tr>
<td>Imports (1998)</td>
<td>$6,700</td>
<td></td>
</tr>
<tr>
<td>Exports (1998)</td>
<td>$6.5 billion</td>
<td></td>
</tr>
<tr>
<td>Budget (1998)</td>
<td>$5.1 billion</td>
<td></td>
</tr>
<tr>
<td>Tourism</td>
<td>$28 million</td>
<td></td>
</tr>
<tr>
<td>Intl. Reserves &lt; gold</td>
<td>$6.65 billion</td>
<td></td>
</tr>
<tr>
<td>Livestock</td>
<td>Quantity</td>
<td>Country</td>
</tr>
<tr>
<td>Chickens</td>
<td>24.50 million</td>
<td>Italy</td>
</tr>
<tr>
<td>Sheep</td>
<td>6.40 million</td>
<td>Germany</td>
</tr>
<tr>
<td>Goats</td>
<td>2.20 million</td>
<td>Spain</td>
</tr>
<tr>
<td>Cattle</td>
<td>142,000</td>
<td></td>
</tr>
<tr>
<td>Fish catch 1999</td>
<td>32,849 mt</td>
<td></td>
</tr>
</tbody>
</table>

Table 3-4 Economic Profile


On the other hand, the government's primary objective is to improve agricultural self-sufficiency, once the benefits of the Great Man Made River (GMR) water project are realised. Overall, Libya has a small market, and it clearly offers considerable potential, particularly at the moment when the environmental lobby has concerns, and high oil prices. Libya's population is growing strongly; and this gives rise to increased imports to satisfy requirements across all sectors of the economy.

Although, Libya is a major oil producer, nation wide infrastructure wasn't fully and effectively developed when compared with the Arab oil producing countries, due to the sanctions imposed on Libya, by the USA in 1986, followed by the United Nations economic sanctions in 1993. The latter was finally lifted in 1999. Despite U.S. sanctions, foreign investment in the oil sector continued, particularly from European companies. The Libyan market re-opened following the restoration of diplomatic relations and the suspension of United Nations and EU Sanctions in early 1999 and finally the USA sanctions.

However, key areas of the economy (including oil) are still in state ownership and likely to remain so, while government controls continue to constrain the private sector. Change has been hinted at, but so far there have been no significant moves towards expanding the private sector.
3.4.2.1 Mineral industry

Libya’s petroleum reserves were the largest on the African Continent but remained underexploited. Libya was, however, the second largest crude oil producer in Africa, following Nigeria. With the exception of the heavily subsidised Libyan Iron and Steel Co. (LISCO), which was supplied by imported raw materials, the nation’s non-fuel mineral industry sector offered little contribution to the economy.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cement hydraulic</td>
<td>3,800 t/</td>
<td>3,210</td>
<td>3,550</td>
<td>2,524 t/</td>
<td>3,000</td>
</tr>
<tr>
<td>Gas natural:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gross</td>
<td>Million cubic meters</td>
<td>12,510 3/</td>
<td>12,450 3/</td>
<td>12,640 3/</td>
<td>12,910 3/</td>
</tr>
<tr>
<td>Dry</td>
<td>do</td>
<td>6,390 3/</td>
<td>6,345 3/</td>
<td>6,420 3/</td>
<td>6,570 3/</td>
</tr>
<tr>
<td>Gypsum e/</td>
<td>160</td>
<td>160 t/</td>
<td>175 t/</td>
<td>125 t/</td>
<td>150</td>
</tr>
<tr>
<td>Iron and steel:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct-reduced iron</td>
<td>852</td>
<td>963</td>
<td>862</td>
<td>990</td>
<td>1,200</td>
</tr>
<tr>
<td>Crude steel</td>
<td>874</td>
<td>909</td>
<td>883</td>
<td>897</td>
<td>925 3/</td>
</tr>
<tr>
<td>Lime e/</td>
<td>260</td>
<td>260</td>
<td>260</td>
<td>275</td>
<td>275</td>
</tr>
<tr>
<td>Nitrogen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N content of ammonia</td>
<td>350</td>
<td>534</td>
<td>545</td>
<td>536</td>
<td>540</td>
</tr>
<tr>
<td>N content of urea</td>
<td>347</td>
<td>409</td>
<td>499</td>
<td>383</td>
<td>385</td>
</tr>
<tr>
<td>Petroleum:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crude</td>
<td>Thousand 42-gallon barrels</td>
<td>507,313</td>
<td>509,175</td>
<td>511,000</td>
<td>516,475</td>
</tr>
<tr>
<td>Refinery products:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gasoline</td>
<td>do</td>
<td>16,000</td>
<td>15,500</td>
<td>16,000</td>
<td>16,200</td>
</tr>
<tr>
<td>Kerosene and jet fuel</td>
<td>do</td>
<td>13,800</td>
<td>13,700</td>
<td>14,200</td>
<td>14,300</td>
</tr>
<tr>
<td>Distillate fuel oil</td>
<td>do</td>
<td>29,600</td>
<td>29,000</td>
<td>31,400</td>
<td>31,500</td>
</tr>
<tr>
<td>Residual fuel oil</td>
<td>do</td>
<td>32,500</td>
<td>32,000</td>
<td>35,400</td>
<td>35,500</td>
</tr>
<tr>
<td>Other</td>
<td>do</td>
<td>10,200</td>
<td>10,500</td>
<td>18,000</td>
<td>18,000</td>
</tr>
<tr>
<td>Total</td>
<td>do</td>
<td>102,100</td>
<td>100,700</td>
<td>115,000</td>
<td>115,500</td>
</tr>
<tr>
<td>Salt</td>
<td></td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Sulphur, by-product of petroleum &amp; natural gas</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td>13</td>
</tr>
</tbody>
</table>

Table 3-5 Libya production of mineral commodities

(Thousand metric tons unless otherwise specified - e/ Estimated. r/ Revised).


Non-fuel mineral output was confined to the extraction of salt from the coastal plains near Benghazi and Tripoli and the quarrying of clay, gypsum, and limestone near Al Khums. LISCO’s iron and steel complex was operating at about three-fourths of its design capacity of 1.2 million metric tons per year (Mt/yr). See Table 3-5 above.

In addition to the commodities listed, a variety of brick, construction stone, and tile was produced, but available information was inadequate to make reliable estimates of output levels. Natural gas liquids were also produced but were blended with crude petroleum and were reported as part of that total.
3.4.2.2 Economic Performance

Libya's economy, which remains largely state controlled and heavily dependent on the oil sector, the Libyan economy gained back its strength by mid 1999 in direct correlation to the rise in world oil prices. Oil revenues of US 5.6 billion during 1998, a year in which the economy contracted by 1%, have more than doubled to an estimated US 12 billion this year. Rough forecasts of real GDP growth are five percent for both 2000 and 2001. Inflation and unemployment were estimated at 18 and 30 %, respectively, for 1999. The introduction of large numbers of migrant workers from other African countries has resulted of more increase in the unemployment rate. Inadequate capital formation has ranged from 12 - 14 % of GDP the last four years while government consumption remains greater than 25 % of total output (Libya Country Review, 2001). However, a foreign reserve fell from US 14 billion in 1981 to US 3.8 billion in 1998, before rising to US 4 billion end 1999, and were approximated at US 7.2 billion at the end of 2000, excluding frozen assets in the US. These reserves are managed abroad and investments include those in international financial institutions, real estate, other productive assets, and petroleum refining and marketing operations abroad (Marat Terterov and Jonathan Wallace, 2002).

3.4.2.3 Gross Domestic Product (GDP)

Libya's comparatively high GDP per capita, in the region of US 7500 per year, is somewhat misleading as a huge portion of oil revenues are earmarked for investment abroad rather than being reinvested domestically. The Libyan economy is finally out of the recession mode, and real GDP growth averaged to 3.7% in 2000 compared to the third quarter forecast of 3%. Higher oil prices and a less hostile international environment will be the driving force behind the positive growth momentum (Country Monitor, November 2000). In terms of key economic indicators and GDP world ranking, Libya in 2001 had a GDP of $US 30.0 billion, a population of 5.4 million and a GDP per capita of $US 5.6 as per Table 3-6 below.
In terms of global rankings, this placed Libya 70 out of 191 countries in terms of GDP, 106 out of 191 countries in terms of population and 57 out of 191 countries in terms of GDP per capita. Prospects for overall economic growth remain positive. Development in the hydrocarbons sector drives the economy, and with oil prices projected to remain firm the EIU forecasts a rapid rate of growth over 2001-02. Real GDP expanded by 6.5% in 2000, falling only slightly to 5.7% in 2001, as rising government consumption largely offsets softening oil prices. Similarly, while oil prices raise further in 2002, high levels of government consumption, and increasing levels of foreign investment in hydrocarbons, should sustain real growth of 4.8% (Country Monitor, 2000).

3.4.2.4 Taxation

All companies (Foreign and National) should register with the tax and social security departments. Libya taxation system is not particularly transparent or effective, with tax often changed on deemed income rather than from company records. Additionally, the corporate income tax rate in Libya is based on income level. Companies with an income of less than LD 10,000 are subject to a 20 % tax rate Income between LD 10,000 and LD
30,000 is subject to a tax of LD 2,000 and an additional 25%. Income between LD 30,000 and LD 60,000 is subject to a charge of LD 7,000 and additional 30%. For companies with an income between LD 60,000 and LD 100,000 there is a charge of LD 16,000 and an additional 40%. For income between LD 100,000 and LD 150,000, there is a charge of LD 32,000 and an additional 45% tax. Companies with an income greater than LD 150,000 are subject to a charge of LD 54,500 and a tax of 60%. Capital gains and dividends are included in taxable income. Table 3-7 explains a company income tax rates. Additionally, a further 4% on profits is payable for Jihad tax.

<table>
<thead>
<tr>
<th>Income (Libyan dinar)</th>
<th>General tax (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First 6000 per annum</td>
<td>Example</td>
</tr>
<tr>
<td>Next 3000</td>
<td>15</td>
</tr>
<tr>
<td>Next 5000</td>
<td>25</td>
</tr>
<tr>
<td>Next 8000</td>
<td>35</td>
</tr>
<tr>
<td>Next 15,000</td>
<td>45</td>
</tr>
<tr>
<td>Next 25,000</td>
<td>55</td>
</tr>
<tr>
<td>Next 40000</td>
<td>65</td>
</tr>
<tr>
<td>Next 100,000</td>
<td>75</td>
</tr>
<tr>
<td>In excess of 200,000</td>
<td>90</td>
</tr>
</tbody>
</table>

Table 3-7 an example of companies income tax rates.


The Jihad tax is payable under Law no.44 of 1970 and is imposed on taxable salaries, wages and so forth, and on retirement pensions at the rates previously noted. Jihad tax is imposed on taxable corporate profits at a rate of 4% (Marat Terterov and Jonathan Wallace, 2002).

Oil company profits are subject to petroleum tax under Law no. 25 of 1955, but companies, which signed exploration and production sharing agreements (EPSA) subsequent to their introduction in 1974, are deemed to have had their liability to petroleum tax settled by the National Oil Corporation of Libya (NOC) (Marat Terterov and Jonathan Wallace, 2002). Libya's statute tax law has straightforward and the basis of determination of taxable income, assessment and payment of tax, and the appeal process, set out in Law no.64 of 1973 (Income Tax Law), it is like most tax laws in many countries.
Company income tax assessment is under the Tax Law that calculates in two stages, these two stages are including: a) Preliminary assessment that used to make all foreign entities must file a tax return annually with the Libyan tax department within one month of the date of approval of the annual branch accounts, and not later than a seven month from their year end. This return should be accompanied by a balance sheet and profit and loss account. As well, a head office accounts should also be submitted with the annual tax return. Based on this submission, in whichever form, the tax department will raise a preliminary assessment on branches subject to company income tax, levying tax on declared profit at scale rates set by the law, plus Jihad tax. Actually, there is no tax is payable at this time if a loss is declared (Marat Terterov and Jonathan Wallace, 2002). b) Final assessment used to implement at the request of either the branch or the tax department, a ‘tax audit’ of the branch’s books and records will be performed in order to determine the final liability to company income tax for a particular year. It is current practice for the tax department to allow, on average, three outstanding years to build up and then to audit these three years at the one time. In fact, the final accounts, together with a final tax return, must be submitted to the tax department at the commencement of a tax audit if they have not already been submitted. Usually, in extreme cases, the tax department may insist on an annual tax audit, but this is unusual. The five-year statute of limitations is extended to perpetuity for the assessment of company taxes. The audit by the tax department inspectors is based on the Arabic statutory records of the branch (see Accounting and Audit section). Actually, if a loss is declared in the preliminary tax return, and a profit in the final, a penalty of 25 % of the tax payable is assessed. In addition, tax law of company income is based on the usual ‘add-back’ basis, whereby disallowed expenditure is added back to declared net profits or losses, current practice is that the tax department raises assessments based on a percentage of turnover – the ‘deemed profit’ basis of assessment. Tax implement even when company has losses declare. Just, in exceptional circumstances, where detailed Arabic records have been maintained, will the add-back basis be applied? The value of deemed profit applied to turnover varies according to the nature of the branch’s business activity. This ranges from between 12 % and 15 % for civil works and contracting; between 15 % and 25 % for oil service, and between 25 % and 35 % in the case of design/consulting engineers (Marat Terterov and Jonathan Wallace, 2002).
3.4.2.5 Accounting and Audit

Operating of business entities in Libya are required by Law of the Civil Code and Income Tax Law no.64 of 1973 that used to maintain a detailed general ledger, and general journal, as well as, inventory ledger (the 'statutory books') that should contain every transaction entered into by the entity. The statutory books before its use must be stamped and registered with the tax authorities and the commercial court (Marat Terterov and Jonathan Wallace, 2002).

Libya's accounting method of oil companies is subject to the accounting requirements of Law no. 25 of 1955, which according to petroleum-Law. The law and agreements require the application of 'sound and consistent accounting practices usual in the (modern) petroleum industry'. Generally all foreign entities and companies (as well, oil companies) are registered under Law no.5 of 1997, where they must submit accounts (financial statement) to the tax department within maximum seven months of their end of the year. Final accounts should be submitted as soon as is possible, if estimated, the directors submitted accounts initially, and within one month of the approval of the accounts. Actually, accounts (financial statement) should be submitted annually to many bureaus, which include the Secretariat of Economy & Trade, the Investment Encouragement Authority, and another relevant authorities, in accordance with the terms of the business licence (Marat Terterov and Jonathan Wallace, 2002, pp 86). A director and accountant are in legal responsible for the veracity of the accounts.

The financial statement should be in Arabic Language and include a balance sheet, a profit & loss account, notes to the accounts, and a report signed by Libyan public accountant. Financial statement dose not require to involve a cash flow statement and the accounts need not show comparative information. Accounting and audit profession is governed by the Libyan Union of accountant and auditors. A membership of the Union restricted to Libyan nationals and members are designated 'Libyan public accountant'.

3.4.2.6 The budget

A large amount authority over budgets has been delegated to Shaabyah (county), but there is still central control of various services. Libya's government budget in 2000 aimed to a
balanced fiscal account and gives a cut in recurrent spending in the main budget, which is from US 7.6 billion in 1999 to US 6.7 billion in 2000. In fact, the budget of 2000 was not issued until July 2000, and the budget of 2001 was also issued in July. It is clear that oil will continue to support the bulk of government revenue. Additionally, revenue is believed to have exceeded overall spending in 2000, producing a fiscal surplus of LD679 million (2.4 % of GDP) where that including both the main and development budget. Tax revenue collection has improved in 2001. On the other hand, Libya’s authorities will have to spend heavily on infrastructure and the fiscal surplus would fall to LD164 million or 0.6 % of GDP in 2001 (Marat Terterov and Jonathan Wallace, 2002).

3.4.2.7 Balance of payments

During the seven years of restriction Libya has managed a steady nominal merchandise trade, but currently, it has improvement and high increase in commercial and trade sectors. Oil price has been controlling the value of country trade, spending, and import. Hence, the current account slipped into deficit in 1998 due to reduction of oil prices, but rebounded in 1999 with a surplus of US 2.1 billion. As well, current account registered a further surplus of US 3.2 billion (6.7 % of GDP) in 2000 that likely to decline to approximately US 268 million (0.5 % of GDP) in 2001. In fact, oil prices and industrial inputs considering further weakening that will see the current account move to a modest deficit of US 441 million (0.9 % of GDP) in 2002.

3.4.3 Social

Libyan society has holding local cultural specificities in high esteem. It is thus expected from foreign businessmen, and tourists, that they respect the prevalent cultural religious values. Additionally, modernisation process of the society has its roots in different time periods, where it is possible to trace the early roots of modernisation in Libya to the second half of the 19th century. During the 19th century, Libya was under the rule of the Ottoman Empire and the country experienced, for the first time, a modern school, hospitals, municipal facilities, a publishing house, newspapers, and a new regulation. As well, development of modern societies in the Third World is due to an increase in the government activity scope.
Practically, all Libyans are Muslims, belonging to the Sunni branch, but there are also communities that belong to the Khariji branch, but these count for less than 1% of the total Libyan population. About 50,000 are Roman Catholics, mostly descendants of the former Italian colonialist community. A large part of the population of Libya is non-Libyans, counting for at least 20% and in some areas more than 50% of the total number of inhabitants. These are foreign workers mainly from other Arab countries like Sudan, Egypt, and Tunisia. The native population of Libya are mainly considering themselves as Arabs, but there is a large influence of Berber origin and in certain communities, the Berber culture is still the strongest.

Work culture in Libya is very different from Europe’s, US, and Asia in the sense that it is more like Arab and Mediterranean world. Working hours differ between the public and private sectors; where in former, working hours are 8 AM-2 PM in wintertime, and 7.30 AM-2.30 PM in summer time. Private sector has unspecific working hours, but usually 8 AM-2.30 PM and 5-8 PM (or 9 AM-2 PM and 3-8 PM) and can extend into the evening. As an environment, trust and reliability are important factors where riding roughshod over them may endanger the successful completion of any business venture.

Libya’s civil law has a series of codes, where after 1969 revolution, the codes were reviewed and revised to harmonise with the Muslims-Shari’a. The Libya main codes include: a) Civil code; b) Commercial code; c) Civil and Commercial Procedure code. In addition, Libya has Social Security that has established under Law no.13 of 1980, and has amended by Law no.1 of 1991, that requires non-Libyan employers to pay 75 % of each employee’s social security contributions. The employer, who is responsible for payment, withholds employees’ contributions from their salary. A total contribution corresponds to 15 % of the employee’s gross salary and it is payable monthly (Marat Terterov and Jonathan Wallace, 2002). The population of Libyan is estimated to be around 5.5 million, that including numerous foreign residents, and is said to be growing at a rate of 3.5 %, which is one of the highest population growth rates in the world. In fact, there is about more than 50 % are under 20 years old, and 86 % urban, which is considered one of the highest urbanisation in the world. There is another fact that according to the UNDP’s 1995 Human Development Report, Libya’s urban population grew on average of 4.2% per year that during the period of 1960-1992.
Libya's education and health care have improved by the impact of oil wealth. During 1992, there is 72% of the adult population was literate, while from one doctor per 3860 person in 1965 the ratio had dropped to one doctor per 690 person by 1992. On the other hand, the indicators are poor in comparison with other similar country income in the region and with OPEC countries. The country infant mortality rate at 61 per 1000 live births exceeds the average for the region. Females have the rights similar to males, where many laws have been passed to regulate modern relations between the sexes. Libya's law has opened all fields of work to woman, including the police force and the army with all its specialisations (Attir, 1985). Laws dealing with women's emancipation include their right to participate freely and equally in all legal, social, political, and economic activities. Females have right to choose a spouse or to request an ending of a marriage. According to Libya's tradition, the family home belongs to the wife and this, in the case of a divorce, it is the husband who has to leave and look for an alternative place to live. On the other hand, in Libyan personal laws; a man can rarely take a second wife, as he would even have to go so far as to secure the written approval of his first wife; according to traditional Islamic law, divorce is a simple practice and is among the privileges of hands. Additionally, a wife can be divorced if her husband says so, that loudly, in front of two witnesses. However, today, divorce is a very complicated issue, where both husband and wife have to file a complaint. There are lengthy legal procedures and the couple have to wait for a court decision (Marat Terterov and Jonathan Wallace, 2002).

In terms of foreign workers inside Libyan society, they must obtain a work permit from the Immigration Department before they apply for a residence visa. In fact, work permits are strictly controlled in order to preserve the local workforce. Additionally, a process to obtain a permit may be somewhat difficult and it keeps changing from time to time. A letter of support from NOC facilitates oil sector permit process. Generally, it is easier for executive personnel to have obtained permits than it is for technical personnel (Marat Terterov and Jonathan Wallace, 2002).

In terms of religion, most Libyans are Sunni Muslims where they are related to Malikite rite and are fundamentally attached to their Islamic faith. Actually, religion permeates all facets of life. Thus, Libya differs from many other Arab countries that have more than one religion and more than one rite. On the other hand, Libya has approximately more than one million
living foreigners, where many of them belong to different Christian sects and to many Indo-Chinese religions. There are churches and places of worship for the majority of these religious groups (Marat Terterov and Jonathan Wallace, 2002).

On a regional level, Libya's strategic orientation towards African countries represents an important element in her trade relations. Actually, there are several precedents of successful completion of business venture and projects between Libya and the other African countries: Additionally, Libya is keen to promote and participate in investments across African nations that to improve the country value of society and culture. There is fact that Libya would like to join any kind of investment that arise recently during a summit meeting between Al Gathafi and European heads of state, where Colonel Al Gathafi has made it clear that Libya is interested in instigating joint European-Libyan investment in Africa.

3.4.4 Technological

Modern technology and development have construction since 19th century when the Ottoman Empire was in Libya. In fact, the process of modernisation has executed from the second half of 19th century where the country since that time established the modern infrastructure facilities, such as, modern houses, schools, hospitals, newspaper, and a new regulation. However, a major change came when Italy invaded the country during 1912-1943. In fact, Italy has done most of the changes during 1920s. These changes were in most of life aspects where Libya in the first time has saw modern war equipment and forms of technology in such Post and registration system for people. Table 3-2 Indicators related to modernisation in Libya (2). Table 3-3 above show the development of major indicators over time as indicators related to modernisation in Libya. Libya after independent in 1951 has had a lot of changes where it established a self-development programme. The revolution (ALFATH revelation) of 1 Sep 1969 has developed to the most effects of today where has set the infrastructure for all Libya's sectors, yet, it dose not make Libya equipped fully with latest technology and modern facilities of today's business activity. The infrastructure still needs a lot of development to be in order for the country to reach to the standard of modern lifestyle. As well, the systems of information and transporting still has the 20th century system where IT and network systems are still lacking behind. The World
Investigating the factors affecting the development of NQA

Wide Web (WWW) is not much prevailing in Libya and dose not do much services inside the country until now. The Libyan government and authorities plans are to develop the technology aspects, as in basic, infrastructure, IT & Network, and Transporting.

3.4.4.1 Infrastructure

Libya has good roads and highway network along the coast and most major cities of Libya. There is a long paved road connects Tripoli with Tunis (Tunisia) and through Benghazi and Tobruq, with Alexandria (Egypt); another road connects Sabha in the deep interior with the coastal roadway. In all, Libya has about 25,000 km of roads, of which 56% are paved. Libyan Arab Airlines (national air line) provides both local and international flights. Several international airlines serve Tripoli and Benghazi. There are various flights to the country. Libya has recently begun a process aiming to resume as many flights as possible with a variety of European cities, and some other regions in such Dubai (U.A.E), African and Asian cities where business has free market. In late 1990's some private airline companies have emerged to serve in the local and international routes and as an aid to the National air line.

In 1996, Libya has first started with a cellular network company. The telecommunications network is currently being modernised. There is Internet access available although. Libya has only one service provider, but there is a number of Internet subsidiary and users are gradually increasing. On the other hand, the rail infrastructure in the country is non-existent; there has not been a railroad in operation since 1965 when existing services were disestablished, have been various plans to construct a new rail system. The government has identified the area of infrastructure as one that needs immediate attention and has allocated a sizeable amount of the budget to the upgrading of infrastructure sectors. Libya established plan, which called "five-year plan". In fact, Libya had ambitious plans in the next five-year plan that was focused on improving basic infrastructure in areas such as ports, communications, roads, schools, hospitals, and human resources.

3.4.4.2 Transporting and travel

The Libyan transporting and travel aspects are modern enough, but there is neither IT nor Networking systems that support these services. There are two major transporting plans
within Tripoli the capital of Libya: first is the metro project; and second is the underground project. The priority was set out for the metro project, which is under bidding for finance and technology (Marat Terterov and Jonathan Wallace, 2002). Libya has had no rail network in operation since 1965, but Libya plans to construct a new 3170 km where there is 1.435 metre (standard gauge) track that leading to contracts worth about US 4 billion; the actual total railway cost is estimated at US 10 billion. The future aims of the railway project are to link Libya from the west with Morocco (via Tunisia and Algeria) and Europe through Spain, and from the west through Egypt to the African countries Sudan and Chad. On the other hand, Libya has the highest vehicle ownership value in Africa, with 209 vehicles (with four or more wheels) per 1000 population in 1996, 68% of those are passenger cars, 32% being commercial vehicles. Additionally, Libya is considering as one of the cheapest places in the world to buy fuel at the pumps where in 1998, super gasoline was US 0.22 per litre, while diesel was just US 0.17 per litre (Marat Terterov and Jonathan Wallace, 2002).

Libya has two international airports, Tripoli international Airport and Benghazi international Airport. Libya also has airline Government Company called Libyan Arab Airlines that provides both local and international flights. Several international airlines have been serving Tripoli and Benghazi to other international airports. More over, The Libyan Government and Italian airline Blue Panorama have set up a new carrier, Afriqiyah Airways, to fly from Tripoli to West African capitals.

### 3.4.4.3 Banking information systems

Libya's banking sector is comprised of the Central Bank of Libya that established in 1955 and commenced operations in 1956, initially operated under the name of the National Bank of Libya. There are six state-owned commercial banks which are supervised by the Central Bank of Libya. These Banks include Jamhuria Bank (formerly Jamahiriya Bank), National Commercial Bank, Sahara Bank, Umma Bank, Wahda Bank, and Libyan Arab Foreign Bank (LAFB), which is the largest of the group.

Libya still has the 20th century system where no credit or debit cards, cash machines, and 24 hours services. In fact, Bank information systems are very poor in Libya. Prior to 1969 ALFATH revolution, Libya has had a good number of European banks operated branches.
In 1970, these branches were mostly nationalised and renamed under titles reflecting state ownership. Libya has only one bank for international banking business, which is Libyan Arab Foreign Bank (LAFB) that was established in 1972. Libya has one private sector bank at present called Bank of Commerce and Development that was started in 1997 and its business is growing rapidly. In the late ninety with the establishment of Shabia's (counties) there have been several private banks mostly referred to as the - Al masraf Al_Ahli of ...) the community Bank of that county.

3.4.4.4 Information Technology (IT) and Network

Libya telecommunications network is currently being modernised. There is Internet access available although, Libya has only one service provider, but there is a number of Internet subsidiary and end-users are gradually increasing. Government is supporting a telecommunication investment programme. At the present, tele-density is approximately 10 %, but government seeks to increase this to 27 % by 2015, and 37 % by 2020. This requires an estimated investment of US 2.5 billion over the next five years, and US 10 billion over the 2000-2020 times. In fact, Libya is asking foreign investors to provide up to 50 % of the total. Government is aware of the importance of communications and IT in the new world order (Marat Terterov and Jonathan Wallace, 2002). Country mobile network started public operational in 1996 and mobile telephones are already everywhere, in a population of 50 % aged below 20. A young generation are rapidly getting connected; this is due to the poor states of landlines. Actually, the benefits and investments will increase ahead into the communications, network systems, and IT sectors.

Libya has already difficult telecommunication access. This is because of growing up pressure on a limited number of lines. Meanwhile, there is plan committed in Tripoli to develop and construct a national backbone network to connect the infrastructure units (banks, universities, companies). Libya's telecommunication authorities are still looking for partners to develop the telecommunication infrastructure. The candidates would be major IT Network and telecommunication companies such as BT France Telecom, but an alternative such as Orascom and an Egyptian company are possible to licence across Africa (Marat Terterov and Jonathan Wallace, 2002). At the present, Libya Telecom and Technology (LTT) Company (Internet access is www.lttnet.com) has been operating the Internet and IT Network services in Libya. LLT trying to improve its services where there is
high pressure on its network. LTT runs a competition for a prime contractor such as Siemens, Alcatel, and Ericsson to deliver a turnkey mobile network solution.

### 3.4.5 New reforms in Libya

In 1998, the Government brought before the National Assembly of the People’s Congress the Private Ownership Bill. The opening words in the Government’s new Bill set the tone for a document which lays out a vision for the modernisation of private ownership in the Libyan system to be based firmly on co-operation not competition. Nevertheless, it takes too long for people to understand and get used to. Therefore a new look at public ownership should be taken. The economy is variable, and government staff feels that too much of their time and effort is diverted from carrying on into pushing paper. Later Colonel Gathafi, in his speech to the General Peoples Congress stated that this system has failed in the same way as happened in the former Soviet Union and Eastern Europe, because it depended on "unqualified employees who do not care about their country's interests. The Libya official news agency, (2003) “Libya, Politics”, Arabic news, June 14, http://www.arabicnews.com

At the heart of the recommendations are improving competitiveness through quality and efficiency. These two issues are to be closely measured to justify the value and contribution of the Libyan industry to the National GDP. Great emphasis will be placed on key issues that are portrayed as being priorities for people (People’s Congress Annual Meeting, 1998).

Cautiously the Government is proceeding towards privatisation and free trade policies. The government has started privatising and allowing private ownership through the so called people’s ownership (People’s Capitalism). In the year 2000, the government has removed subsidies from public owned companies, yielding the way for the private sector to intervene. Lately in the year 2002 the government decided to privatise fully the state owned organisations by transferring ownership either to company employees and / or to new investors interested in taking over. The National body for the privatisation of organisations and industrial units, (2003) announced that the privatisation plan is in progress through a shares scheme programme that will be open for the public soon after completing the analysis and evaluation for those organisations that are under the privatisation scheme. In
the mean time, new reforms have given public business managers greater flexibility in managing their own affairs, raising finance, responding to change, and developing their workforce. Nonetheless, many feel they have been betrayed, and have been put to the test of survival with the sudden introduction of the privatisation plan.

3.5 Libyan and Regional Cultural Profiles

Organisational culture is expressed as the way an organisation solves its problems, achieves its goals, and maintains itself over time (Harrison and Stokes 1993). The term culture refers to the underlying set of cultural and social belief systems that operate within a department, which form the environmental glue that holds it together. In business surroundings culture may be defined as "the beliefs that pervade the organisation about how the business should be conducted, and how employees should behave and should be treated" Whitehall, (1991). He also stated that appropriate behaviour with a culture is basically a learned behaviour, and not an inherited one, which comes from our genes. Thus, culture has a direct visible effect upon organisational performance and individual satisfaction. Cultural change must be related to the business goals of the organisation. These goals must represent the soft and hard issues of managerial strategy, as clearly stated through the literature. Only new principles that maximise human potential will provide the ultimate business goals. It is thus necessary to change an organisation to a culture that is committed to TQM. Some of these principles are embedded within the management style adopted by the management. It has been acknowledged (Oakland, 2004; Evans and Lindsay, 2005) that TQM will flourish and succeed best in a more democratic, team oriented management style. However, the most appropriate management style will always depend on the purpose and aims of the organisation and its leaders. The right management approach will release the human potential, which will consequently enhance the productivity (Oakland, 2004).

Kanji, (1997) stated that TQM is the culture of an organisation committed to customer satisfaction through continuous improvement. This culture varies both from one country to another and between different industries, but has certain essential principles, which can be implemented to secure greater market share, increased profits and reduced costs. Trompenaars, (1993) added that the primary objective of an NQA is to enable
organisations to attain continuous performance improvement, maintain consistency, and achieve the desired level of business excellence. However, a major issue arises as to the application of the NQA in different cultural and operational backgrounds, and, any additional complexities of social systems.

However, Based on Garven's (1988) transcendent view on quality, TQM is itself a philosophy with its own existence and does not incline toward any particular country or national culture. Similarly, Roney, (1997) pointed out that TQM itself is embedded with its own set of cultural beliefs, norms, values, and assumptions. Thus when implementing TQM in a particular setting, the fusion effect of the respective national culture and TQM as a culture itself is of great importance.

Roger Harrison, (1975), has stated that, "Organisations have patterns of behaviour that operationalise an ideology - a commonly held set of doctrines, myths, and symbols. An organisation's ideology has a profound impact on the effectiveness of the organisation. It influences most important issues in organisation life, how decisions are made, how human resources are used, and how people respond to the environment. Organisational ideologies can be divided into four positions of the four orientations: Power, Role, Achievement, and Support (Harrison, 1992).

Roger Harrison, (1992) asserts that TQM attempts to blend the Role orientation's emphasis on well-designed and closely managed systems, with the empowerment of employees that is typical of the achievement orientation. These approaches endeavour to make the system serve the workers and, thus, to combine the economic effectiveness of the Role orientation with the high energy of the Achievement culture.

Even though TQM has been very popular world-wide among organisations and academics, there is little evidence of empirical research being conducted on implementing TQM in developing countries Baidoun & Zairi, (2003). Previous studies on TQM implementations were mostly carried out in the developed countries and widely acknowledged the limitation of the findings on their applicability across national boundaries Dawson, (1994); Rao et al., (1999). Muna, (1980) attempted to define the main characteristics of management organisation and behaviour in Arab countries. Others have studied Arab management and behaviour within specific national cultures Suleiman, (1984). In most of these studies it was
reported that contextual factors such as politics and culture played a role. However, Atiyyah, (1993) compared the management style of Arab managers in Iraq and Saudi Arabia, and reported that the culture bound hypothesis regarding the style of Arab managers was not supported. Also, Atiyyah asserts that the assumption that traditional Arab culture is a major explanatory factor of organisation and management problems appears to be empirically unsupported. He points to the need to study political, economic and bureaucratic systems and policies in the various Arab countries separately.

TQM has been applied successfully in culturally diverse settings and the history of these applications suggests that, over time, TQM takes on some of the host country’s cultural values (Roney, 1997). It is true that the principles of TQ/TQM, in general, are the same everywhere, but their practical implementations are different, depending on history, culture, environment and resources. Thus, it is important to consider these issues when studying the implementation of TQM in developing countries. Madu (1997) recommended that culture and climate variations be investigated in such regions, to explore and identify any gaps between those in place and those required for TQM implementation. A survey of Western and Oriental organizations by Smith et al. (reported in Chen & Lu, 1998) suggested that a universal approach to quality management may not exist because of the different cultures. In addition, Nasierowski and Coleman (1997) stated that the process of transferring TQM should be improved by recognizing that the activities involved were not culture free. They reported that “an appreciation of the fact that there are always two cultures involved in a transfer- that in which the technique was developed, and the culture to which the technique is to be transferred- will lead to a fuller analysis of situations, and hopefully improve the chances of a successful transfer”. Therefore, it is a mistake to adopt quality practices that have worked in other countries or cultures without first exploring the inherent differences.

As highlighted earlier, every society has its own unique work ethics that have been influenced by the peoples’ environment and attitudes over the years which, in turn, influences their views. Roney (1997) pointed out several different issues that exist between national cultures; they were:

- the way people view the world;
- how they deal with uncertainty;
Investigating the factors affecting the development of NQA

- the degree to which individuals are integrated into groups;
- the extent to which the less powerful organizations accept and expect what is distributed unequally;
- how information is processed;
- the concept of time;
- how individuals establish relationships with others;
- the modality of human activity;
- what a human being's relationship to nature is;
- The character of innate human nature.

Each of the above exists in every society and even in a given individual, but cultural norms and expectations are generally based on a dominant shared value (Roney, 1997). Thus, codes of appropriate behaviour and preferred management style, for example, are based on the dominant values within a given society. These influence policies and procedures, reward systems and norms of accepted behaviour within the organization. In addition, organizational members share expectations that policies will be consistent with these dominant values.

From Hofstede's study mentioned in the literature review chapter two section 2.5.3, it is seen that four cultural dimensions were developed by Hofstede, (1980); Power Distance (PD); Uncertainty Avoidance (UA); Individualism (IDV); Masculinity (M) and its opposite Femininity (F). Table 3-8 next shows the relative positions on these four dimensions for a sample of 10 countries and regions. These scores represent central tendencies in the answers and there is hardly an individual who answers each question by the mean score of his or her own group.

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>Power Distance</th>
<th>Uncertainty Avoidance</th>
<th>Individualism</th>
<th>Masculinity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arab Countries</td>
<td>80</td>
<td>68</td>
<td>38</td>
<td>53</td>
</tr>
<tr>
<td>France</td>
<td>68</td>
<td>86</td>
<td>71</td>
<td>43</td>
</tr>
<tr>
<td>Germany</td>
<td>35</td>
<td>55</td>
<td>67</td>
<td>66</td>
</tr>
<tr>
<td>Great Britain</td>
<td>35</td>
<td>35</td>
<td>89</td>
<td>66</td>
</tr>
<tr>
<td>Netherlands</td>
<td>36</td>
<td>53</td>
<td>80</td>
<td>14</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>68</td>
<td>29</td>
<td>25</td>
<td>57</td>
</tr>
<tr>
<td>Japan</td>
<td>54</td>
<td>92</td>
<td>46</td>
<td>95</td>
</tr>
<tr>
<td>Brazil</td>
<td>69</td>
<td>76</td>
<td>38</td>
<td>49</td>
</tr>
<tr>
<td>USA</td>
<td>40</td>
<td>46</td>
<td>91</td>
<td>62</td>
</tr>
<tr>
<td>West Africa</td>
<td>77</td>
<td>54</td>
<td>20</td>
<td>46</td>
</tr>
</tbody>
</table>

Table 3-8 Cultural Dimensions for 10 Countries (0=low, 100=high); Scores: Hofstede, (1980)
The scores of the Arab countries in the survey were based on the average scores of the following countries: Egypt, Iraq, Kuwait, Lebanon, Saudi Arabia, Libya, and the United Arab Emirates. The results show that the Arab countries exhibit large power distances and strong uncertainty avoidance; suggesting inequalities are emphasised and uncertainties avoided. They exhibit neutral on the MI and low on the IDV; suggesting a moderately masculine and collectivist society.

However, the Arab countries of North Africa might be slightly different from other Arab countries in the Middle East in a social history context. This is due to the fact that the North African countries lay on the Mediterranean Sea and that most were colonised by Western countries for some time where they have transferred some managerial and cultural profiles.

3.6 Libyan and Regional quality profiles

3.6.1 Progression of quality in Libya

The milestone Libya took towards quality dates back to fifty years ago, right after independence (1951) and the discovery of oil. Both independence and the discovery of oil have released social forces that the traditional forms of tribal system could not contain. As a result of the discovery of oil, a new industrial era emerged. This increased the demand for importing industrial equipment and machinery that satisfy the specific requirements of industry. As a consequence; in 1956 the government established the Libyan National Centre for Standards and Metrology (LNCSM). The purpose of this centre was to set the national standards, liaise with international standardisation and quality bodies and promote quality on the national scale.

Since 1969 the pace of change has increased significantly. Due to the new wealth from petroleum, and the relentless government efforts to remake the Libyan industry, the pace of industrial change became too fast. As a result the country became involved in huge industrial projects (e.g. oil refineries, chemicals, steel, cement, food processing, and textiles plants). Consequently, the attention of the government leaned more towards qualifying the technical staff needed for operating these plants more than the managerial.

Despite the various pressures from the world market, the fast spread of technology and customer demand, the Libyan government had done very little in altering the quality concept, and / or dissolving the traditional management structure. In addition to the
government’s slow reaction to change; the turmoil with the USA and the UN sanctions have had a significant affect in delaying most of the initiatives the government had started.

Despite the fact that the quality history in Libya is more than fifty years old, nothing much had been done in this regard until the 1990’s when the ISO 9000 standard came to surface. A timid attempt was then made by the National Centre for Standards and Metrology (LNCSM) as the representative body of ISO in Libya. In mid 1990 the LNCSM Centre conducted a few awareness seminars and workshops on the ISO 9000 implementation.

A tentative step was also initiated by the Ministry of Industry towards the promotion of ISO 9000. In 1998, the Ministry arranged several seminars and workshops nationwide in cooperation with the UNIDO (United Nations Industrial Development Organisation). At the same time, the Ministry funded a research project aiming to assist Libyan organisations wishing to implement ISO 9000. The project was initiated and led by a team from the Industrial Research Centre (IRC), for the purpose of investigating the existing quality management practices within the Libyan industry and assisting the industry in setting the relevant action plans.

The project consisted of set of personal interviews and surveys that were conducted over most of the manufacturing national companies. A pilot program of ISO 9000 implementation was launched in several manufacturing organisations. The team’s objective was to assist the organisations in reviewing their status of ISO 9000 accomplishment, assessing which features of the framework were already in place, and prioritising those features that are not yet in place. Unfortunately, the project was never completed due to changes in the Ministry. However, the team had identified some factors which contributed to the delaying of the implementation process, including:

- management commitment,
- lack of resources,
- deficiency in training needs,
- motivation,
- organisation structure,
- effective communication
The private sector has also contributed significantly into the promotion of quality, such as that by Elhira Consultancy and Quality Engineering, which has organised and conducted numerous seminars and workshops. In the year 2000, Elhira Consultancy and Quality Engineering organised the First National Symposium on Quality, Environment and Health & Safety. One of the main elements of this symposium was the establishment of a quality society. As a result, the Libyan Society for Quality (LSQ) was launched, and was officially registered in the year 2002.

Ever since, the Libyan Society has been organising workshops and seminars and conferences on quality. The Annual Quality Conference was successfully launched in May 2003. The society is also taking the burden of promoting quality on the Libyan level, assisting in drafting the national standards, publication of a quality magazine, and providing news and literature on quality.

From the researcher's consultancy experience within Libya; the Libyan formal governmental bodies such as the Libya National Centre for Standardisation and Measurement (LNCSM), Industrial Research Centre (IRC), Libyan Society for Quality (LQA) as well as local consultants have initiated programmes to introduce organisations to TQM and provide assistance for TQM implementation. Support with TQM implementation has been identified as another key determinant of successful TQM implementation. Management was continuously supported and trained by the two national bodies (NCMS and IRC).

Despite these efforts, the idea of introducing a Total Quality Management (TQM) Assessment framework in Libya was not foreseen, since most decision makers and organisations managers have been preoccupied with conventional management. Tasks were carried out in an ad-hoc method with day-to-day business management in a fire fighting approach. The reason behind all this arose from the lack of competition, resulting from government intervention in foreign trade, and the projectionist policies of the country (state ownership).

Few Libyan organisations are ISO 9000 certified some others are seeking registration, whereas very fewer are committed to the scheme. Table 3-9; shows the number of ISO 9001:2000 certified companies in the Middle Eastern countries as per the ISO Survey – 2004.
Investigating the factors affecting the development of NQA

<table>
<thead>
<tr>
<th>No.</th>
<th>Country</th>
<th>Number of certified companies</th>
<th>No.</th>
<th>Country</th>
<th>Number of certified companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Afghanistan</td>
<td>3</td>
<td>13</td>
<td>Morocco</td>
<td>296</td>
</tr>
<tr>
<td>2</td>
<td>Algeria</td>
<td>126</td>
<td>14</td>
<td>Oman</td>
<td>99</td>
</tr>
<tr>
<td>3</td>
<td>Bahrain</td>
<td>99</td>
<td>15</td>
<td>Pakistan</td>
<td>250</td>
</tr>
<tr>
<td>4</td>
<td>Bangladesh</td>
<td>182</td>
<td>16</td>
<td>Palestine</td>
<td>29</td>
</tr>
<tr>
<td>5</td>
<td>Egypt</td>
<td>810</td>
<td>17</td>
<td>Qatar</td>
<td>94</td>
</tr>
<tr>
<td>6</td>
<td>India</td>
<td>12558</td>
<td>18</td>
<td>Saudi Arabia</td>
<td>394</td>
</tr>
<tr>
<td>7</td>
<td>Iran</td>
<td>3000</td>
<td>19</td>
<td>Sri Lanka</td>
<td>148</td>
</tr>
<tr>
<td>8</td>
<td>Israel</td>
<td>7280</td>
<td>20</td>
<td>Sudan</td>
<td>118</td>
</tr>
<tr>
<td>9</td>
<td>Jordan</td>
<td>278</td>
<td>21</td>
<td>Syria</td>
<td>240</td>
</tr>
<tr>
<td>10</td>
<td>Kuwait</td>
<td>101</td>
<td>22</td>
<td>Tunisia</td>
<td>123</td>
</tr>
<tr>
<td>11</td>
<td>Lebanon</td>
<td>154</td>
<td>23</td>
<td>UAE</td>
<td>819</td>
</tr>
<tr>
<td>12</td>
<td>Libya</td>
<td>7</td>
<td>24</td>
<td>Yemen</td>
<td>29</td>
</tr>
</tbody>
</table>

Table 3-9 ISO 9001:2000 certifications in the Middle Eastern countries 2004


3.6.1.1 The factors hindering the progress of quality in Libya

TQM experts have classified "soft" factors as those behavioural and cultural aspects of TQM which are the most critical inheritance of people. This was evident in the Libyan case, where the limited efforts towards the soft factors have weakened the progress of TQM initiatives in Libya. It has been stated earlier by sited researchers that ignoring the cultural factors has caused many TQM implementations to fail.

Never the less, the desire to build an industrialised nation was the centre of attention of the Libyan decision makers for the last three decades. It led the country to invest highly in huge industrial plants and qualifying the technical personnel capable of operating these plants. As a result focusing on the hard aspects has caused the soft factors to slip away.

With this perception in mind, a study on the reason behind the slow implementation of TQM initiatives in Libya was carried out in the eastern part of Libya in the city of Benghazi. The study has revealed that Libyan organisations' failure in implementing quality programs and difficulties in the journey of transformation towards excellence can be related to many factors (Egnaibor, et al, 2002):

- Management commitment;
- Human resource management;
- Information system;
Investigating the factors affecting the development of NQA

- Organisational structure;
- Innovation support;
- Training;
- Research and development;
- Customer care strategy;
- Documentation & quality manuals;
- Effective communication systems;
- Knowledge of TQM.

Egnaiobor, et al, (2002) also noted that due to the low expertise of the management staff, has resulted in the Libyan organisations to suffer from so many problems such as:

- inventory stockpiles
- continuous change in management,
- skilled staff
- aging machinery and equipment
- shortage of production material

The above reveals that the firm's contexts, and especially management attitudes, play a strong role in shaping TQM implementation. Several issues need further research before more specific recommendations can be made. This preliminary study also revealed that TQM is a relatively new phenomenon in Libyan organisation. This is probably due to the sanctions imposed on Libyan organisations which were, first and foremost, trying to survive as opposed to trying to achieve high quality standards.

Quality management philosophy is defined through its core concepts; customer orientation, process control, employee involvement and participation, teamwork, managing by facts, continuous improvement. Along with these key elements of the philosophy, many instruments, organisational arrangements, tools and techniques have been developed and brought to the market by consultants. However, based on the author's consultancy experience within Libyan organisations, he has found that Libyan organisations have not adopted these tools and techniques in their wider scale; instead they have followed their own routes, without using the acronyms of all the ideas and tools that are now known as 'quality management'. They tend to do things more or less in an informal way, without using the formal tools and techniques that typify quality management, like customer surveys, ISO 9000 series certification, policy deployment, improvement teams, brainstorming tools, etc.
Based on the above, it could be seen that the maturity level of Libyan organisations, with respect to quality management and its techniques, is still lagging. Libya can't be compared with the industrialised nations. Most managers are merely aware of quality practices. This might be because most of them still do not understand the complex nature of international trade and globalisation of world markets. If the Libyan situation is to be assessed using some sort of an assessment framework provided in the last chapter, it may be classified under the basic stage. However, within Libyan industry generally there is a vague approach to TQM implementation, no NQA, and hardly any investment in research and development.

On the other hand, Libyan organisations who met the requirement of ISO 9000 certification (percentage of organisations is as noted on page 79) are now seeking to implement self-assessment against the criteria of an excellence model that conforms to there business environment. Those companies are looking towards the excellence models as the next step on their TQM journey. However, there is a wide gap between the requirements of the ISO 9000 series and the level of TQM maturity demanded by the excellence models.

To achieve and accomplish this, management commitment to TQM and enthusiasm to keep it moving forward is necessary to strengthen and sustain the TQM paradigm. A highly educated management team that is not only aware of skills and behaviour required to implement TQM, but also able to introduce the necessary practices that will develop these skills and elicit those behaviours. Training employees throughout the organisation in TQM is essential. This does not just help employees to understand TQM principles and deal with TQM issues on the shop-floor, but without this it is difficult for management to communicate effectively the TQM paradigm throughout their organisations.

Despite these facts, Libyan organisations are still facing some difficulties in adopting the principles of TQM and finding the right approach. With the variety of starting points and motivations for continuous improvement, it is often difficult for them to specify a plan detailing the order and which direction to be taken. However, from the above discussion and the results of the handful of studies that were carried in Libya which showed that ISO 900 to be an important starting element of this plan. Thus, the ultimate goal must be the progression towards the full implementation of TQM principles, which may be facilitated through the development an implementation of a NQA. These NQA's are found to be the most effective tools for promoting TQM and assessing organisational performance.
3.6.2 Quality in the Middle Eastern Countries

There is extensive research evidence that demonstrates the benefits from the TQM. Dale, (1999) argues that TQM is adopted by organisations as the means of understanding and satisfying the needs and expectations of their customers and taking costs out of their operations. Again Anschutz, (1995) argues that it has been a major factor in the planning and development of business in the USA, Europe and the Pacific Rim for at least 25 years. On the other hand, developing countries like Libya and the Arab countries have started the journey to quality in recent years in recognising TQM initiatives, and their effect on the development of organisations and management institutions (Zairi, 1996). This new tendency to appreciate TQM initiatives has followed the change which started to take place in their economic and trading policies to urge the new movement towards the free market system as in the case of Dubai and Egypt (Youssif, 1996).

Recently and like other developing nations, Arab countries started to see the critical role of quality management as a mean of helping and improving their organisations. However, there are very limited management initiatives and approaches in the Arab countries. Through the period of this research, most of the literature found on quality in the Arab world libraries was based on a translation from Western books.

Most of the quality practices in the region fall in the implementation, of ISO 9000 quality assurance system (see Jannadi, 2000; Al-Khalifa et al, 2000; Zairi, 1996; Kadasah et al, 2001). In Al-Khalifa et al, (2000) research, he indicated that his research represents the fast empirical study on quality and TQM issues in Qatar. However, it was focused on examining the quality awareness and understanding of quality management issues without any indication of any structured approach to quality management in the country.

Zairi, (1996) indicated that ISO 9000 registration is becoming a passport for exporting to the European Union. This has led some organisations in the region to seek registration and to begin to assess the level of assurance of their quality systems according to the ISO 9000 standards. It was also found that most of the Arabic countries were among these countries who voted, participated actively in discussions, and had access to all relevant documentation in the process of building the new ISO 9000 version 2000 (www.tc.176.org).
For this purpose a national body in each country was established to represent the standard.

It was noted that Arab managers and governments unfortunately believe that ISO 9000 registration will bring miracles with it and can lead to superior competitiveness. Zairi, (1996) stated that:

"All Arab countries have to deal with these levels of misconception and poor understanding. ISO 9000 is only a licence to practice and only represents one pillar of the TQM philosophy. It is an essential element but not sufficient on its own."

Awareness of TQM is only a beginning however, the key to progress should be an understanding of its philosophy and processes. As highlighted by Oakland, (1995) a correct understanding of TQM is vital to ensure its proper implementation. As found in one study in one of the Arabic Gulf areas only nine of the 95 respondents had a good knowledge of TQM and its purpose (Al-Kalifa, 2000). Although the majority of the respondents indicated an awareness of the subject, only 40% seemed to understand it. It was also indicated that in terms of the industrial sector, the understanding of TQM was highest in the oil companies followed by services and then manufacturing companies. Small and medium enterprises were not quite as conversant with the philosophy as larger ones.

The lack of understanding of quality management and a lack of quality management models and approaches in the region might be attributed to the great emphasis on ISO certification in the region. Apparently the local firms, seeing the popularity of ISO among foreign companies operating in the region, and realising the need to survive in today's highly competitive market are considering the requirement of ISO 9000 for international trade, particularly with the European Union (Al-Zomany, 2002).

The only recognised tailor made quality model in the region is King Abdullah the Second of Jordan. There are a few other models that are solely based on the IQA (EFQM, Malcolm Baldrige) such as, in Egypt, Morocco and Dubai Quality Model (DQA) of the United Arab Emirates. DQA was introduced by the Governor of Dubai in 1994 as a further step in his open policy to make Dubai one of the best free markets in the world (Castill, 2000). It is
considered by many companies there as the roadmap for all organisations operating in the state of Emirate to improve the quality of products, services and business procedures.

The most important comment about these Quality Award Models such as Dubai (version 2000) is that all its criteria and framework match the EFQM Excellence model. This framework Is found to be an Arabic copy of the European Business Excellence Model, which consists of the same nine key elements where "Customer Satisfaction, People (employee) Satisfaction and Impact on Society are achieved through Leadership driving Policy and Strategy, People Management, Resources and Processes, leading ultimately to excellence in Business Results."

In summary, the adoption of these models give concrete evidence of the dominant trends in the region towards the translation and application of the Western models, instead of building up their own models and approaches or studying the applicability of these models in such cultures.

In conclusion, based on the points raised above, the region is a long way from maturity in terms of the total quality practices, organisational culture and climate that are needed, to implement TQM. It is also to be considered that TQM cannot work in an environment in which the systems/practices are hostile to its teaching. There is a need here for the organisations to describe where they are before deciding how to move ahead.

The ways to achieve TQM success are much broader and more complex than the pure climate and cultural factors discussed. The implementation of TQM includes many issues or factors that need to be understood and implemented with careful planning and not merely linked to cultural issues. However, by obtaining environmental and cultural information relative to a successful TQM process, decision-makers, managers and/or organizations in Libya can identify problem areas in advance, based on culture gaps with desired values/culture and congruence with undesired values. Instead of entering into TQM blindly, managers/organizations can benefit from advanced knowledge of areas where an audit is likely to highlight trouble or where an organization has little to worry about. The cultural information can then be used to modify behaviour in order to meet the needs of a quality culture.
TQM requires a massive change in the social and technological components of a workforce. Decision-makers and/or managers in the region have to understand that a radical change is required if TQM is to be adopted. The basic principles must be effectively communicated to the workforce, rather than adopting a packaged version from other cultures or societies and/or consultants.

3.6.2.1 The factors hindering the progress of quality in the region

As mentioned before, there has been a substantial interest in the improvement of business management in this region; however TQM has been significantly less predominant in this region. It is intended here to shed light on this point and discuss the possible reasons for this poor quality performance in the region.

For a long time many organisations in the Middle East have not operated as commercial companies because of various forms of government intervention, and in particular locally based companies have been protected from international competition by government-imposed tariffs and trade barriers. As argued by Madu, (1997) these barriers are now being removed, exposing companies, to the commercial pressures which are standard in where trade has been more open for long time.

It is also argued by Hamid, (1993) that during the last 30 years, Arab countries have undergone dramatic political, economic and social changes under the authoritarian regimes, where obedience and loyalty are to the ruler, rather than stressing competence and performance, and consequently unethical practices among civil servants increased. Unethical practices also spread to the private sector that conducts business with their public counterparts. This was enhanced by the gradual erosion of the traditional social system and its long-established values and norms which used to control behaviour and interpersonal relationships.

International sanctions such as in the case of Libya (1993 – 2001), as well as the above political situation, are considered to be main reasons for the unfavourable promotion of the quality ideas. This is true especially since public management is not separated from politics and the private management is not separated from ownership. In this view, the promotion of quality practices will need a change from a predominantly political system of
Investigating the factors affecting the development of NQA management, in which managers are appointed and promoted on the basis of political or social affiliation, to professional management. Also in the private sector this will need a shift from patrimonial management where management positions are filled by members of the owner's family, to professional management.

Even though Arab governments have recently shown more flexibility and open-mindedness in seeking solutions to the above problems, which have led to the lack of quality, there is still long way to go. The experience of the Western countries toward quality indicates that their industries spent a relatively long time before considering quality issues. Besides that, it is argued that governments in Arab countries like Libya are busy with many programmes other than managing the inherited organisations from the previous systems. Such governments are considered responsible for the development in the whole country and toward economical planning (Al-Nasrawi, 1990).

Another barrier to seeking quality management in the region is explained by Abbas, (1990). He argued that Arabic countries have moved to the industrial stage, without establishing the sound foundations necessary for coping with the demands of modern institutions. This situation has created serious managerial and social problems (i.e., distortion of traditional craftsmanship, inefficient operations, lack of direction, displacement of the traditional workforce, and shifts in social structures).

The rush toward industrialisation in the 1960's and 1970's created tremendous pressures. This was evidenced by the inability of the existing infrastructure (e.g., roads, ports, distribution centres, education, health, etc.) to initiate an environment that encourage people to invest and establish different kind of businesses. The shortage of skilled managers in the new public owned and private organisations to perform their duties effectively and to meet the ever growing demands of people induced the wealthy Arab states to rely on foreign experts and workers (Abbas, 1995).

3.6.3 Quality in Developing Countries

Similar studies were carried out on world-wide bases showing some failures in the TQM implementation processes, despite the fact that organisations and governments worldwide are convinced with the success of TQM. This failure could be due to some factors, which
Investigating the factors affecting the development of NQA include a mismatch of organisational culture (Kekale and Kekale, 1995), a lack of management leadership, and inadequate training (Doyle, 1992).

Recent studies indicated that implementing quality management in developing countries is usually associated with several problems. Some of these problems include severe constraints on their economies, lack of political will, lack of education and training and lack of commitment (Al-Zomany, 2002). It was also argued by Lakhe et al. (1997) that most of the developing countries are suffering from the following:

- Lack of employee involvement and participation in quality improvement efforts.
- Lack of management commitment and motivation.
- Perception that quality is an optional extra and not a necessity for development.
- Traditional belief that "quality costs money".
- Lack of communication & trust between suppliers, dealers, management & trade unions.
- Dis-organised and indifferent customers.
- Lack of political support.
- Lack of established quality standards and inadequate test facilities.
- Obsolete technologies.
- Low level of education.
- Negligible capital investment in technologies, research & development & employees' education, etc.
- Disrespect to the people so far as quality of life is concerned.
- Undesirable social tensions such as terrorism, violence, religious fundamentalism, etc.

To explain the importance of quality management for developing countries Lakhe et al. Al, (1994) introduced a figure that explains the linkage between the productivity and quality management as shown in Figure 3-2. However, with increased competition, changes in global markets, changes in import-export policies and increased customer consciousness, some systematic efforts towards quality are taking place in most of the developing countries, such as the case of Libya. Companies are realising that not only growth but also, basically, their survival depends on quality matters. Some firms, therefore, are reorienting themselves and, by obtaining the help of internal and external collaborators, are trying to give a new boost to the quality drive (Madu, 1997).
3.6.4 Conclusion

From the literature above, it was found that organisations in the Devolving Countries in general and in the Middle Eastern region are still lacking behind with respect to TQM initiative and approaches practiced. Nevertheless, Libyan organisations are considered to be in their earlier stages on their journey to the quality excellence. Based on the overview of Dale's (1999), "quality maturity level methodology and level requirements", it can be reluctantly said that there are very few Libyan organisations that would reach level three, and if they did, would barely be in the early stages of this level. In many units, quality tools are not used to the extent that they would be considered to have completely met level 3 requirements. Major Libyan organisations have barely been able to implement the ISO 9001 based quality management system. Moreover, the Libyan economy may be identified in a more or less, trampling state of affairs, this is due to the circumstances that Libya faced which have resulted in weakening the Libyan economy. This in return, has had a significant affect on the organisational culture and performance, and the management competence.
For purpose of meeting the research aims and objectives, the Libyan environmental conditions and quality experiential levels were visited and represented in this chapter. From the above presentation, these factors seem to be in their early phases. As per the literature review (chapter 2), these factors "environmental conditions and TQM maturity", were found to have a significant impact on the development of an NQA for the developing countries.

Based on the findings from the previous sections and the clear picture that was drawn on Libya, it becomes necessary to find an answer to the research question, "whether Libya is in need for specific NQA model or not?". It is suggested here in order to proceed with the investigation and pursue the research further an appropriate research approach is imperative.

The above findings and the literature review have provided us with the actual status of the quality development within Libya. Whereas, the preliminary survey has provided a clear answer to the research question; "whether Libya is in need for specific NQA framework?". Therefore, a further investigation is needed. This may be accomplished through a well established research methodology solely designed for this research study. Hence, the author has dedicated the following chapter for depicting the methodology needed for this research project.
Chapter 4 Research Methodology

4.1 Introduction

To proceed with the objective of investigating the factors affecting the development of a national quality award for Libya as a developing country, a typical research approach was adopted for the project, to help ensure that the objectives of the research were met, and that maximum buy-in to the project, and its findings, were obtained. In this context, several research processes are used. These processes address major theoretical and philosophical approaches and cover different methods.

4.2 Research Methods

Jankowicz, (1995) defined research method as "a systematic and orderly approach taken towards the collection of data so that information can be obtained from those data". Therefore, it should be stressed that a researcher’s paradigmatic preference is important in designing a methodology in that certain methodologies are usually associated with specific paradigms. Larsen-Free and Long (1991) state that "the point is that what is important for authors is not the choice of a priori paradigms or even methodologies, but rather to be clear on what the purpose of the study is, and match that purpose with the attributes most likely to accomplish it. Put in another way, the methodological design should be determined by the research question". However, there are several research methods that can be taken; the choice always remains topic dependent. Hence, the author has proposed to present some theoretical background of the more likely methods that are proposed to be deployed for this research topic.

4.2.1 Deductive Research

Hussey and Hussey (1997) defined deductive research “as a study in which conceptual and theoretical structure is developed and then tested by empirical observation, thus particular instances are deducted from general inferences. For this reason, the deductive research is referred to as moving from the general to the particular”. Gill and Johnson (1997) stated that “a deductive research method entails the development of a conceptual and theoretical structure prior to testing through empirical observation”. They divide the process of deductive research into four stages. These stages are as follows:
The author decides which concepts represent important aspects of the theory problem under investigation.

Through the operationalisation of a concept it becomes defined in such a way that rules are laid down for making observations and for determining when an instance of the concept has empirically occurred.

The process of operationalisation enables the construction of clear and specific instructions about what and how to observe. This enables the testing of hypothesis and theories by confronting them with the empirical data, which is then collected.

The outcome of the above is the process of testing, by which the assertions put forward by the theory or hypothesis are compared with the facts collected by observation.

### 4.2.2 Inductive Research

Hussey and Hussey (1997) define inductive research "as a study of which theory is developed from the observation of empirical reality, thus general inferences are induced from particular instances, which is the reverse of the deductive method". Gill and Johnson (1997) also stated that "inductive research involves moving from the plan of observation of the empirical world, to the constructor of explanations and theories about what has been observed". In other word, it involves learning by reflecting upon particular past experiences and through the formulation of abstract concepts, theories and generalisation that explain past, and predict future experience Table 4-1.

<table>
<thead>
<tr>
<th>Deductive method</th>
<th>Inductive method</th>
</tr>
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<tbody>
<tr>
<td>Explanation via analysis of casual relationships and explanation by covering - law.</td>
<td>Explanation of subjective meaning system and explanation by understanding.</td>
</tr>
<tr>
<td>Generation and use of quantitative data.</td>
<td>Generation and use of qualitative data.</td>
</tr>
<tr>
<td>Uses of various controls, physical or statistical, so as to allow the resting of hypotheses.</td>
<td>Commitments to research in everyday settings to allow access to, and minimise reactive among the subject of research.</td>
</tr>
<tr>
<td>Highly structured research methodology.</td>
<td>Misnaming structured research methodology.</td>
</tr>
</tbody>
</table>

**Table 4-1** Comparison between deductive and conductive approaches

**Source:** Gill and Johnson (1997, p37).
4.2.3 Qualitative Research

Qualitative research assumes that all knowledge is relative, that there is a subjective element to all knowledge and research, and that holistic, ungeneralisable are justifiable. Hussey and Hussey (1997) define a qualitative approach "is more subjective in nature, involves examining and reflecting on perception in order to gain an understanding of social and human activities". Jankowiz, (1995) and Miles and Huberman, (1994) identified the following features of the qualitative approach:

- It depends on a deep familiarisation with a normal or typical real – life situation.
- It involves the author in the research for significant themes running through disparate sources.
- It results in a holistic understanding of the situation.
- It demands that the author take informants seriously in their own language, and, from their own point of view.
- It seeks to discover how people understand the situation or issue that the author is investigating and how that understanding guides their actions.
- It seeks to develop knowledge by linking the accounts people give to an underlying body of theory.

Qualitative research involves the use of qualitative data, such as table, figures, gathered information, interviews, documents, and participant observation data, to understand and explain problems, economic statistics, and social phenomena. Qualitative research can be defined as "multi-method in focus, involving an interpretive, naturalistic approach to its subject matter" (Denzin & Lincoln, 1994).

The traditional emphasis in qualitative research has been on generating theories rather than testing them (Ian Dey, 1993). Additionally, the qualitative analyst is cast in the role of a discoverer who unearths problems, identifies indicators and formulates hypotheses, rather than investigating predetermined problems within an established theoretical framework (Becker and Geer, 1982).
4.2.4 Quantitative Research

Quantitative research is over obtrusive and controlled, objective, generalisable, outcome orientated, and assumes the existence of hard facts, which are somehow external to and independent on, the observer or researcher. This approach is used mainly to explain how scientists talk about the way they investigate the natural variables, measurement and experiment (Bryman, 1988). However, this approach has its origins in positive roots, which have been reflected in scientific accounts given to analysing quantitative data.

Quantitative research is associated with different methods for data collection, especially in sociology, in which social survey is considered as the most important technique for data collection. However, researchers consider quantitative methods "as having a logical structure in which theories determine the problems to which researchers address themselves in the form of hypotheses derived from general theories" (Bryman, 1988). Bryman (1988) also, clarifies some important features of quantitative research. Quantitative research can be addressed in a form of scientific approach because it deals with investigation and majoring of the social sciences. It is usually based on statistical data and/or analysis involving statistical models.

In general Hussey and Hussey (1997) state that "quantitative approach involves collecting data and analysing numerical data and applying statistical tests". According to Jankowiz, (1995), a quantitative research can be characterised by:

- Involving you in concentrated attention on a limited number of variables and constants, which are important to you and, which are usually expressed in the language of your own investigation.
- A search for the significance of relative proportions, in order to identify what is more important or significant and what is less so in the issue, which you are exploring.
- An attempt to understand the ways in which selected factors in a situation are structured or interrelated, in importance or precedence.
- Abstraction from repeated single observations, in which the meaning or significance of data arises from some aggregation, average, range or comparison rather than from the individual data, points themselves.
Bell (1993) summarises the approach; that, quantitative research collects facts and studies the relationship of one set of facts to another. It measures, using scientific techniques that are likely to produce quantified and, if possible, generalisable conclusions. Also, it seems to have very brief contact with the individual and some methods, which are associated with quantitative research, may demand no contact with the subject at all, such as postal questionnaire surveys. Furthermore, quantitative researchers appear to adopt the role of being outsiders; so they try to choose a suitable role for themselves in order to have limited contact with their subjects. Also, they tend to set a theory as starting points, and then carry out the investigation with its framework. This can lead to neglect of the subjects' views about what is going on and what is important. This can imply that a quantitative approach is largely controlled by theory. Nevertheless, researchers in this approach tend to use a structured technique, which, is related to the study. For instance, surveys and experiments both depend on the aims of the research. Once the research has been planned, then the framework of the strategy can be constructed. The nature of quantitative data is usually described as characteristically 'hard,' 'rigorous,' or 'reliable'. Such a prescription suggests that this kind of data offers precise accuracy, which has been collected in a systematic way.

Comparing the two approaches suggests that qualitative research certainly excels at generating information that is very detailed. Of course, there are quantitative studies that are detailed also in that they involve collecting lots of numeric data. But in detailed quantitative research, the data themselves tend to shape and limit the analysis. For example, if you collect a simple interval-level quantitative measure, the analyses you are likely to do with it are fairly delimited (e.g., descriptive statistics, use in correlation, regression or multivariate models, etc.) Research Methods Knowledge Base — Home page, (2002).

However, in order to meet the research objectives, the author will use both qualitative and quantitative approaches, to conduct secondary and primary search, because of the diversity of the research and the shortage of empirical research in the field. A quantitative approach will be used because of the speed in which sufficiently large amounts of data can be collected. Also, by using a quantitative research method it will be easy to contact a large sample through questionnaires.
4.3 Data Collection

Information can be collected from either secondary or primary sources in order to provide insight into the research and identify courses of action.

4.3.1 Secondary Data

Kinnear and Taylor, (1996) stated that "Secondary data are already published data collected for purposes other than the specific research needs at hand". Secondary sources such as library and syndicated information (e.g., census reports and industry surveys) can provide very useful background information on the topic of research and can also bring a broad historical perspective to the nature of the topic. Use of secondary data will help the researcher to save cost and time in making comparison with primary data. Therefore, when they are available, the researcher may be able to visit a library, identify the appropriate source and collect the required information. However, there are major disadvantages of secondary data such as the extent to which the data meets the needs of the project, the accuracy of the data and the timeliness of the data. Secondary data can be collected from books, reports, articles, magazines, electronic databases and the Internet.

To meet the main objectives of the research, secondary data will be used as a source for collecting information. The research objective is to investigate the factors affecting the development of NQA for a Libyan context (i.e. economic and social development of a country; culture; international standards and practices). Therefore, some of this data will be collected from the Internet, libraries (in Libya and Britain), Ministry of Economy and Chamber of Commerce & Libyan Industry as well as the use of survey questionnaires and semi-structured interviews. Also includes relevant minutes of meetings, quality publications within the Libyan Centre for Standards and Metrology (LCSM), Ministry of Energy, Ministry of Industry, executive reports and Ministries business plans and annual reports.

4.3.2 Primary Data

Kinnear and Tylor, (1996) indicate that "Primary data are collected specifically for the purpose of the research needs at hand". Primary sources of information such as observations and qualitative techniques (e.g., focus groups and in-depth interviews) provide current data on the research topic. Once the search for secondary data is
completed, the researcher typically will find that primary data must be collected to supplement the secondary data.

To meet the objectives of this research, primary data will be the main source for collecting information that cannot be achieved by secondary data. Although, collecting primary data in this research will be very difficult, the author will conduct primary searches such as questionnaires, interviews, observations and industrial audit.

4.3.3 Interviews

The main aim of conducting a qualitative research interview is to see the reaction of people interviewed on the topic being researched, and to understand why they have this particular perspective. Bryman, (1988, p6) states that "While participant observation is probably the method of data collection with which qualitative research is most closely associated, unstructured interviewing, in which author provides minimal guidance and allows considerable latitude for interviewees, is also a favoured technique".

The author recognises that in order to achieve an overall impression the people who manage the various departments must be interviewed. The author identified these people accordingly. In order to ensure effective time management (Easterby-Smith et al., 1993), a structured questionnaire was devised. This enabled the author to collect information in a timely and efficient manner May, (1993).

The author used this technique to improve rapport and discourage respondents from giving answers that they thought the interviewer might want (De Vaus, 1991).

4.3.4 Observation

This method is usually used in cultural studies when the researcher aims to understand a number of aspects such as customer behaviour towards specific products etc. Some observational work may take place in this research study to analyse employee behaviour during operational process, aiming at developing the process and determining the cultural attitudes of workers. However, these techniques may not be effective enough in this research work due to the unique nature of Libyan Industry.
4.3.5 Questionnaire

Burton (2000) indicated that "The most widely used survey instrument across the social sciences is the questionnaire". It is considered as the most useful tool to collect information about existing conditions. Fowler (1993) states that "designing a question for a survey instrument is designing a measure not a conversational inquiry. Good questionnaires maximise the relationship between the answers recorded and what merely the author is trying to measure". Therefore, to design reliable research methods, researchers must be consistent in their approach to measurement by asking respondents exactly the same questions and recording those answers in a systematic fashion.

Nunan (1992) found the questionnaires to be an attractive way of collecting data by researchers. He also found that in order to be clear about the study's objectives one has to have a reliably constructed questionnaire, which may be very difficult to design, and time consuming to implement. It is usually addressed in the form of a series of structured written questions and given to a wide range of individuals for them to fill out. In addition, the aim of this technique is to explore a range of factors such as personal attitude, opinions and feelings about a variety of issues, objects and situations. However, a questionnaire can be a reliable method for data collection because it involves a large number of samples. Therefore, a considerable amount of information can be obtained. It can also be carried out in a short space of time.

In order to design a reliable questionnaire, Hague (1993) suggests that "researchers should ask themselves four important questions when drafting survey questions".

- Will this question be understood in the way I intend?
- How many different ways could this question will be interpreted?
- Is this question likely to annoy, intimidate or offend?
- Is there a better way of asking the question?

The advantages of using a questionnaire are that they can be sent to people who are difficult to get in touch with; they allow respondents time to reflect on the questions so that they can give more considered, and precise answers. They are not time consuming. The
disadvantages are that they rely heavily on respondents to fill them out, are guided only by written instructions, and they offer little motivation.

The author realises that, collecting data is very expensive and at the same time could be time consuming, therefore, the author has carried out a pilot study for the purpose of designing a set of closed questionnaires aimed at the core of the subject. Floyd et al., (1990) suggest that one of the most important ways for a researcher to ensure standardisation of gathering information is to ask questions which are easily understood and answered. The variety of staff to be questioned with different roles within organisations was a predominant factor in the author's mind when designing the questionnaires. Considerable attention was given to developing clear, unambiguous and useful questions (De Vaus, 1991). Use of jargon and technical terms was avoided.

The choice of questions was predominantly closed, as closed questions are useful since they are quick to answer (De Vaus, 1991). This is seen as a significant factor by the author to aid response, and a structured questionnaire provides a rapid and relatively inexpensive way to obtain information (May, 1993). The author tried to make his questions as short as possible and limited to the least possible number of questions. This is because, people do not like to read, and therefore it is important to avoid the reader becoming bored; losing interest and not completing the questionnaire a series of questionnaires were distributed on different occasions, in order not to overwhelm the respondent with a large number of questionnaires, and pages to complete. The same group of people was invited on different occasions to attend quality seminars, and at the end of each seminar participants were asked to participate in the completion of questionnaires.

4.3.6 Sampling

Sampling is the unit from which information is collected from. The sampling could be individuals, stores, companies, families, etc. Also, the sampling in any study would depend on the objectives of the study. The advantages of sampling include saving time and saving money and obtaining information that is more accurate. Moreover, sampling provides a mechanism whereby an estimate of a population characteristic can be obtained and, based on probability; a numerical measure of the accuracy of the estimate can be given (Sprent, 1988).
Moser and Kalton (1983) list several advantages to sampling. In contrast to a complete enumeration of the population, the data are cheaper to collect by this method. In addition, fewer people are required to collect and analyse the data and this method saves time, as a sample is quicker to analyse and process. Moser and Kanter (1983) also believe that this method permits a higher level of accuracy as the sample size allows a check of the accuracy of the design and administration of the questionnaire.

4.3.7 Sample Design

The author is aware of how small sampling can affect the accuracy of results (De Vaus, 1991). A list of names of senior managers based in each of the different directorates was obtained. These managers and quality practitioners, across diversified sectors of the economies in Libya, were identified at the quality conference held in October 2000, organised by Elhira Consultancy and Quality Engineering. These individuals were therefore "self-selecting" and a randomised approach was taken for selecting the names of participants, (such as every third name, fifth name or sixth name to be highlighted after a random start) (De Vaus, 1991). The chosen design was able to unearth data that answer the research questions and cover all of related quality practices.

4.4 Data Analysis methodology

This methodology introduces the basic steps involved in the analytical process, as to the following: planning the project, identifying and collecting data, and analysing and interpreting data. This is during and after using the qualitative methodology. Data analysis methodology is used to support the research plan and numerical research aspects.

Furthermore, analytical methods are the keys to obtaining the evidence needed to support audit findings. Analytical evidence is among the four types of evidence discussed in the Yellow Book of the United States General Accounting Office (GAO), the other three being physical, documentary, and testimonial evidence. GAO defines analytical evidence as "computations, comparisons, reasoning, and separation of information into components" (United States General Accounting Office, 2002). In fact, data analysis procedures usually used while taking data to assure the quality of the data values are being recorded. The
usability of data analysis methodology is for doing the following tasks and skills during research:

- Prepare data analysis procedures to be used during taking data to assure the quality of the data values being confirmed.
- Define “sanity” and quality checks for expectations in data analysis and patterns.
- Prepare specific data analysis procedures to be made for evaluating research outcomes.
- Simulate all the proposed experimental runs planned using the models developed in the theoretical basis task.
- Check that the predicted results are consistent with data analysis assumptions.
- Identify sources of error and facilitate arrangement of measurement instruments for access and functionality.
- Identify sources of uncertainty and estimate their values.
- Perform an error propagation analysis. Use the identified sources of uncertainty and estimates of their values to estimate the sensitivity of results to experimental errors.
- Revise the experimental plan as appropriate.
- Summarise the results as a section to be included in the project plan report.

Figure 4-1 Ability of data analysis methodology.

The usability of data analysis methodology is to integrate the collected data and information, and then classify them by using the qualitative methodology to accede to the new ideas and results that a researcher needs. In fact, data analysis is used to classify most of the research environment elements such as mathematics/statistics, psychology,
computing, science, and philosophy/logic. As shown in Figure 4-1. Data analysis' ability to collect, classify and produces data where data analysis has the core of the process and all the environment elements abroad.

In this research data analysis is used in gathering the essential methods and theories that are used, starting with qualitative methodology to the economic situation, cultural behaviour and business performance measurement theories, as well as the quality maturity and finally, the decision methodology, which support the results for developing and validating the TQM assessment model.

In summary, the different methods for conducting a research were reviewed, such as deductive, inductive, quantitative and qualitative approach. It was seen that each approach has its strength and weakness. The necessity to adopt an effective methodology for this research was discussed. As well, the importance of questionnaires as an appropriate methodology for testing the research question of this research project was discussed.

4.5 Approach adopted for this research project

The methodology used for this study consisted of 3 main phases; desk-top research (phase 1); data collection (phase 2); and data analysis and the final model development (phase 3). Each of these phases and methods aimed to collect relevant information for one or more of the processes shown on the research methodology chart Figure 1-2 chapter one. A brief overview of each of the research methods will now be given.

In phase 1, desk top research consisted of a general review of international research on worldwide trends in TQM, business excellence (BE), performance improvement (PI), national quality awards (NQA's), and long-term sustainability to see if the current design of the framework fits the current understanding of what makes a successful organisation in today's business environment e.g, to investigate the categories and or items and the score weightings required for an NQA model. A particular focus was given to analysing business literature/research from the Middle East countries, with special attention given to the Libyan industry, so that the framework could be designed to reflect Libya's business environment. Desk top research also involved studying the websites of BEM custodians (organisations or bodies entrusted to promote national quality awards) such as MBNQA, EFQMA, Dubai
Investigating the factors affecting the development of NQA Quality Award, and King Abdullah II of Jordan Quality Award. This provided valuable information on the BE services offered by BEM custodians and the current design of other BEMs enabling comparisons of model criteria, items and core principles.

In phase 2, four surveys were undertaken. However, as the main objective of this study was the investigation of the factors that affect the development of a NQA for the Libyan Industry, the boundaries of the research were drawn accordingly, i.e. a heterogeneous group of organisations – public and private organisations with varied sizes, a single geographical region (Libya), a "current" time-frame and stakeholders who are defined as the people who have an interest in how well the organisation performs (both inside and outside). There were 43 companies from the Libyan industrial and service sectors - the size of the "population" means that a sample representative from each organisation need not be an issue.

Senior managers (i.e. human resource, production, technical, quality, environment and health and safety managers), and middle managers of these organisations, were invited to attend series of seminars on TQM and related systems, organised purposely for this study. During the seminars sessions, the purpose and objectives of the survey(s) were explained very carefully and clearly to the respondents.

During the seminar, participants were asked if they were willing to participate in a survey. The participants were familiarised about the purpose of the survey. The rationale behind this is that this approach proved to be very effective in getting the message across and made the process of the survey much easier to accomplish.

For initiating this research a pilot survey was conducted for answering the research question and to establish the need for developing an NQA framework specifically tailor made for Libya. The survey took the form of a set of unstructured interviews with a number of senior managers and quality practitioners from 24 companies from various sectors of the Libyan economy. Unstructured interviews are presented in, Appendix I. To meet the main objectives of the research, data needed to fulfil the set methodology of this research were collected through four sets of closed ended questionnaires as per Appendices (II-IV).
Phase 3 - in this phase, data obtained were analysed. Based on the findings, a development process framework was devised, recommendations for their development were provided, and the final NQA model tailor-made for the specific Libyan business environment was initially proposed. However, further validation to the model is recommended for future work.

4.5.1 Interviews

At the start of this project, and specifically during the months of July and August 2002, a series of interviews were carried out with those senior managers and quality practitioners those mentioned early in section 4.3.7. Although the personal approach was time-consuming and costly and could be impracticable in some cases (especially where a large geographical area is to be covered) such as the case of Libya, it proved to be very effective in this study. Each tape-recorded interview was then transcribed and coded. The interviews are detailed in Appendix I that centred over the following:

- National Quality Awards and Business Excellence (BE) concepts;
- The need for a specific Libyan National Quality Award;
- The potential for the implementation of National Quality Awards in Libyan.

4.5.2 Questionnaire

In conformance to the introduction of this chapter, May (1999) stated that the type of questionnaire to be used depends on; the type of population, the nature of the research question and availability of resources. However, due to the background of the population under this study and their knowledge of the research subject, a closed ended self-completion sets of questionnaires were devised to be used. Senior managers from randomly selected organisations across diversified sectors of the economies in Libya; were approached for attending two sessions of one day seminars organised by Elhira Consultancy and Quality Engineering. The human resource and or training departments were contacted in writing. A letter was drafted stating the aims and objectives of the seminar, the targeted audiences and the reason behind the seminar. The advantages of this approach were: first, it had a lower cost than face-to-face interviews, and second, it
was possible to cover a wider geographical area at a lower cost. The second advantage of this approach was that the researcher had full control over who answers the questionnaire.

The questionnaire consisted of four different sections as follows:

- Socio-economic development in Libya;
- Corporate culture and quality management in your organisation;
- Exploring the quality schemes and TQM maturity;
- Identifying critical factors for the successful implementation of TQM in Libya.

4.5.3 General approach adopted for the questionnaire

For the purpose of achieving the aims and objectives of this study in the most efficient timely manner, and to identify the existing/current profile of Libya, it is recognised that this can only be achieved through an overall impression from the people who manage the various departments of the organisations under study. However, for the purpose of this research study, companies having fewer than 50 employees were classified as small, those with 50 - 250 as medium and those with more than 250 as large.

The organisations were approached for this study consisted of organisations from the private, public, state owned organisations, and multinationals, representing different sizes from different sectors of the economies. Most of the contacts were obtained from the business directory developed by Elhira Consultancy and Quality Engineering. These organisations were selected (generally at random); however, the author ensured that the most well-known organisations in the country were included. To reduce the likelihood of bias and to maximize the response rate, it was decided that inviting the interviewees to attend two sessions of one day seminars were the most statistically valid means of obtaining reliable data. Hence, this enabled the author to collect information in a timely and efficient manner.

Two sessions of one day seminar were organised by the author. The first seminar took place at Elhira Consultancy and Quality Engineering premises during the month of July 2002, under the title “The Best Quality Scheme for your Organisation”. The seminar revolved over the three sets of questionnaires devised to investigate the factors affecting the development of a NQA (Economic Development, Culture, and TQM Maturity). The second seminar took place at Al-kabeer hotel during the month of August 2003, under the
Investigating the factors affecting the development of NQA

title “TQM Initiatives and the Best Practice”. This survey circulated in this seminar was aimed to investigate the Critical Success Factors (CSF’s) of TQM within the Libyan Industry.

4.5.4 Characteristics of organisations that participated in the first survey

The organisations were approached for this study consisted of 97 organisations. A total of 64 attended, 21 of which were 'spoilt', leaving 43 for analysis, a response rate of 67 %. Of the 43 respondent organisations, 41 % were from the services sector, 36 % from general manufacturing and the remainder from the oil and gas industry. The service sector included the public sector, insurance companies, banks, construction companies, telecommunications, health care, etc. General manufacturing covered companies from textiles, food and drink, steel, cement, clothing, etc. while the oil and gas industries were all those related to oil and gas operations, such as exploration, drilling, production, liquefied natural gas departments, storage, supporting services, etc. as well as petrochemical/fertilizer industries. This ensured that opinions were sought from a wide range of industries.

56% of the respondent companies could, therefore, be classified as large, 18 % as small and 25% as medium. 39% of the respondents companies were of a partnership/joint venture type indicating links not only nationally but also internationally with European, US and other Arab enterprises. Governmental owned companies comprised 27% of the respondents and privately -owned 34%.

4.5.5 Approach adopted for identifying socio-economic development

The methodology used for investigating the current socio-economic development was based on a questionnaire survey developed by the United Nations development programme based on the technology achievement called the Technology Achievement Index (TAI) as per, Appendix II.
4.5.6 Approach adopted for identifying TQM maturity

The methodology used for investigating the current management styles was based on a questionnaire survey developed by Krasachol Ladawan, Guh, Eric, (2001), Quality Management in Developing Countries, the 6th ICIT, Ayr, UK, Appendix VI.

4.5.7 Approach adopted for identifying Libyan Culture

In order to identify the existing/current cultural profile of the majority of the organisations operating in Libya, a questionnaire comprising the same 15 statements used in the survey to identify the management style ideal for TQM culture was circulated to a sample of Libyan organizations. The respondents were asked to rate the extent to which each statement described their organisation. These results enabled comparisons to be made between the existing culture and that ideal for TQM.

The methodology adopted for investigating the current management styles was based on a questionnaire survey derived from Roger Harrison’s (1992) questionnaire for diagnosing organisational culture, Appendix III. The aim of the survey was to identify the TQM management culture factors with respect to management styles, as perceived by Libyan organisations to be critical to the success of their implementation of the quality initiative. For the purpose of emphasising the affect of TQM initiatives, and to aid in further investigations to the research aims, the questionnaire was administered to two groups. The first group comprised a population of 8 participants, from an ISO 9000 certified organisation. The second group comprised of a heterogeneous mixed group of companies with a population of 43 organisations as indicated above. The data analysis aimed to identify and interpret a majority consensus amongst respondents in their ratings of the TQM management culture factor as indicated in the results chapter 5.

4.5.8 Characteristics of organisations that participated in the second survey

This study is based on a survey carried out in August 2003 consisting of a sample of 34 Libyan organisations selected randomly. The prospective samples were primarily identified from the list of organisations that attended the First National Symposium on Quality, Environment and Health and Safety organised by Elhira Consultancy and Quality Engineering. A large number of organisations were invited to attend the seminar, however,
only 34 attended, where as the others either declined or did not reply at all. However, 10 sets of the questionnaire out of 34 were unusable (i.e. either left blank or semi-completed). Only 24 out of the 34 sets were usable (over 70 %), which is considered acceptable in such studies. The usable sample consisted of 50 % services and 50 % manufacturing. A profile of the respondents involved in the survey is presented in the Tables below.

<table>
<thead>
<tr>
<th>Organisation Sector</th>
<th>Ownership</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>State owned</td>
<td>19</td>
<td>79.1</td>
</tr>
<tr>
<td></td>
<td>Privately owned</td>
<td>1</td>
<td>4.2</td>
</tr>
<tr>
<td></td>
<td>Public owned</td>
<td>2</td>
<td>8.4</td>
</tr>
<tr>
<td></td>
<td>Multinational</td>
<td>1</td>
<td>4.2</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>24</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Organisation Age</th>
<th>Co. age in years</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt; 9</td>
<td>3</td>
<td>12.5</td>
</tr>
<tr>
<td></td>
<td>10 - 14</td>
<td>-</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>15 - 20</td>
<td>-</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>&gt; 20</td>
<td>21</td>
<td>87.5</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>24</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Organisation Size</th>
<th>No. of Employees</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt; 50</td>
<td>2</td>
<td>8.3</td>
</tr>
<tr>
<td></td>
<td>50 - 250</td>
<td>1</td>
<td>4.2</td>
</tr>
<tr>
<td></td>
<td>250 - 500</td>
<td>3</td>
<td>12.5</td>
</tr>
<tr>
<td></td>
<td>500 - 1000</td>
<td>1</td>
<td>4.2</td>
</tr>
<tr>
<td></td>
<td>1000 - 1500</td>
<td>2</td>
<td>8.3</td>
</tr>
<tr>
<td></td>
<td>&gt; 1500</td>
<td>15</td>
<td>62.5</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>24</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Organisation Working Capital</th>
<th>Working Capital</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt; 5 Million LD</td>
<td>2</td>
<td>8.3</td>
</tr>
<tr>
<td></td>
<td>5 - 10 Million LD</td>
<td>3</td>
<td>12.5</td>
</tr>
<tr>
<td></td>
<td>10 - 15 Million LD</td>
<td>2</td>
<td>8.4</td>
</tr>
<tr>
<td></td>
<td>15 - 20 Million LD</td>
<td>-</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>20 - 25 Million LD</td>
<td>1</td>
<td>4.2</td>
</tr>
<tr>
<td></td>
<td>&gt; 25 Million LD</td>
<td>17</td>
<td>70.9</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>24</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 4-2 Company profiles

Table 4-2 Company profile, illustrates the characteristics of the interviewed companies. The findings indicate that the majority of the interviewed companies are state owned by the Libyan Government (79% State owned, 8% Public owned 4% Multinational and 4% private owned). The findings indicate that 88% of the interviewed companies are older than 25 years. Thus, these companies can be viewed as mature and well established (Salaheldin and Francis, 1998). Hence, this is reflected in how they value and perceive standards.

Two indicators for the company size were taken into consideration in the survey: number of employees and working capital. The majority of the respondents employed more than 1500 employees, representing 63% of the sample. The impact of the company size based on the number of employees will be used as an explanatory variable in the analysis. Referring to the working capital, it is found that 71% of the interviewed companies have a working capital above 25 million Libyan Dinar (£ 10 million), which represents the large companies.
This illustrates the fact that Libyan industrial sector is composed of extremely large sized firms based on the number of employees and working capital.

17% of these companies had a quality management system in place; as a result respondents from these companies were knowledgeable of quality management activities. However, 30% of the participating companies are at a basic stage, hence respondents had little knowledge of TQM practices. Therefore, top managers (i.e. human resource, production, technical, quality, environment and health and safety managers) and middle managers of these organisations were invited to attend a seminar on TQM and related systems organised purposely for this study. During the seminar the purpose and objective of the survey were explained very carefully and clearly to the respondents.

4.5.9 Approach adopted for identifying CSF's

A quantitative approach is used for this empirical investigation based on a closed survey questionnaire that was designed and piloted for this study. The participants assess the extent of importance of the quality management practices with respect to their business units and accordingly prioritise these factors based on their relevance for developing an NQA for the Libyan industry. A survey instrument that had a 1-5 Likert scale was designed using an extensive literature review. The measurement approach is similar to that used by Saraph et al., (1989). The five-point response scale had the following anchors: highly agree (5), agree (4), neutral (3), disagree (2) and highly disagree (1).

The sample was drawn from all over Libya including industrial and service sectors. The sample consisted of firms with diverse products such as iron ore, fabricated metal products, electronics, paper products, communications, health care, maritime, airlines, training centres as well as consulting and banking firms and utilities. The sample consisted of firms that had been involved in quality practices and firms that did not have any quality programs. (See Table 4-2 Company profile). Questionnaire is presented in, Appendix VI.

In summary, due to the little knowledge and interest on the research topic that the participants have, the author has experienced some difficulties in motivating and convincing Libyan managers to attend the seminars. However, a considerable number of managers have attended the seminars. Hence, the methodology applied for this research
proved to be affective and has achieved the set aims and objectives for this research. Consequently, the author was encouraged to carry on with this research study and investigate further as per the next chapters.
Chapter 5 Analysis

5.1 Chapter outlines

The major purposes of this chapter are to present and analyse and critique the results that were obtained from the different investigation stages of this research work. This should provide the basis for the NQA formulation for Libya. The chapter will be divided into three main sections: The preliminary questionnaire analysis (pilot survey), the analysis of the factors affecting the development of NQA’s (Libyan National Environmental Conditions) and the analysis of the TOM - Critical Success Factors within the Libyan Industrial context.

5.2 Introduction

At the beginning of this research study and specifically after completing the desk top researching (Literature review) the author travelled to Libya for the purpose of initiating a campaign towards the promotion of the research topic and gathering the empirical data needed for completing the research. The campaign targeted Libyan organisations across all sectors of the economy (Private, Public, State and Multinational). The characters of these participating organisations are as per Table 5-1 below:

<table>
<thead>
<tr>
<th>No</th>
<th>Company Name</th>
<th>Sector</th>
<th>Type</th>
<th>Activity</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>General Post &amp; Telecom Co.</td>
<td>C</td>
<td>Services</td>
<td>Telecom</td>
<td>Large</td>
</tr>
<tr>
<td>2</td>
<td>Civil Aviation Authority</td>
<td>C</td>
<td>Services</td>
<td>Aviation</td>
<td>Large</td>
</tr>
<tr>
<td>3</td>
<td>House Hold Electric Appliances</td>
<td>C</td>
<td>Manufacturing</td>
<td>Electronics</td>
<td>Large</td>
</tr>
<tr>
<td>4</td>
<td>Ministry of Agriculture-Gherian</td>
<td>C</td>
<td>Services</td>
<td>Public Services</td>
<td>Medium</td>
</tr>
<tr>
<td>5</td>
<td>Iron Ore &amp; Steel Manufacturing</td>
<td>C</td>
<td>Manufacturing</td>
<td>Metal / Iron Ore</td>
<td>Large</td>
</tr>
<tr>
<td>6</td>
<td>Trucks &amp; Busses Manufacturing</td>
<td>C</td>
<td>Manufacturing</td>
<td>Automotive</td>
<td>Large</td>
</tr>
<tr>
<td>7</td>
<td>General Electronic Co.</td>
<td>C</td>
<td>Manufacturing</td>
<td>Electronic</td>
<td>Large</td>
</tr>
<tr>
<td>8</td>
<td>Universal Inspectorate</td>
<td>D</td>
<td>Services</td>
<td>Quality</td>
<td>Small</td>
</tr>
<tr>
<td>9</td>
<td>Nuclear Research Centre</td>
<td>C</td>
<td>Services</td>
<td>Research</td>
<td>Large</td>
</tr>
<tr>
<td>10</td>
<td>Petroleum Research Centre</td>
<td>C</td>
<td>Services</td>
<td>Research</td>
<td>Large</td>
</tr>
<tr>
<td>11</td>
<td>Industrial Research Centre</td>
<td>C</td>
<td>Services</td>
<td>Research</td>
<td>Large</td>
</tr>
<tr>
<td>12</td>
<td>Raseed International for Training</td>
<td>A</td>
<td>Services</td>
<td>Training</td>
<td>Small</td>
</tr>
<tr>
<td>13</td>
<td>Ras Lanuf Oil Co.</td>
<td>C</td>
<td>Production</td>
<td>Oil / Petrochemical</td>
<td>Large</td>
</tr>
<tr>
<td>14</td>
<td>Tajura Leather Manufacturing</td>
<td>C</td>
<td>Manufacturing</td>
<td>Leather / Plastic</td>
<td>Medium</td>
</tr>
<tr>
<td>15</td>
<td>Afriqia Air Lines</td>
<td>B</td>
<td>Services</td>
<td>Aviation</td>
<td>Medium</td>
</tr>
<tr>
<td>16</td>
<td>National Oil Company</td>
<td>C</td>
<td>Services</td>
<td>Oil</td>
<td>Large</td>
</tr>
<tr>
<td>17</td>
<td>Waha Oil Company</td>
<td>C</td>
<td>Production</td>
<td>Oil</td>
<td>Large</td>
</tr>
<tr>
<td>18</td>
<td>General Co. for Electric Works</td>
<td>C</td>
<td>Manufacturing</td>
<td>Electricity</td>
<td>Large</td>
</tr>
<tr>
<td>19</td>
<td>Zawia Oil Refinery</td>
<td>C</td>
<td>Production</td>
<td>Oil</td>
<td>Large</td>
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<tr>
<td>20</td>
<td>Zwetina Oil Company</td>
<td>D</td>
<td>Production</td>
<td>Oil</td>
<td>Large</td>
</tr>
<tr>
<td>21</td>
<td>National Co. for Water &amp; Sewage</td>
<td>C</td>
<td>Services</td>
<td>Water / Environment</td>
<td>Large</td>
</tr>
<tr>
<td>22</td>
<td>Social Security Services</td>
<td>C</td>
<td>Services</td>
<td>Public Services</td>
<td>Large</td>
</tr>
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<td>23</td>
<td>Libyan Arab Air Lines</td>
<td>C</td>
<td>Services</td>
<td>Aviation</td>
<td>Large</td>
</tr>
<tr>
<td>24</td>
<td>United Insurance Company</td>
<td>B</td>
<td>Services</td>
<td>Insurance</td>
<td>Medium</td>
</tr>
</tbody>
</table>

Table 5-1 Surveyed Libyan Organizations’ Characteristics
5.3 The Preliminary Questionnaire Analysis

Although, the NQ Awards have been widely accepted as an appropriate tool for the assessment of the TQM performance within their regional boundaries, nonetheless, their appropriateness across their boundaries has not been established, neither theoretically or empirically. The problem with these quality awards is that they give broad guidelines, and it is difficult to identify which practices and organisational results are derived from the use of TQM practices.

In an effort towards laying the ground for the implementation of such Awards across their original boundaries, the author initiated a pilot survey to test their acceptability in Libya as well as answering the research question. The questionnaires are as per Appendix I, the Preliminary Pilot Survey which was given the title "Business Excellence concepts and the associated National Quality Awards". The results and analysis of the survey are presented in the following section.

5.3.1 Pilot study

To provide this study with empirical evidence as to whether such an NQA framework is needed, a pilot study was carried out for the purpose of initiating the study.

From the literature review of this research work (Chapter 2), it was found that the prevailing concept about the previously devised IQA's is that they are the best available tool for promoting and assessing TQM performances worldwide. However, this concept is based on perceptions rather than being factually-based, as there are no empirical investigations carried out to prove their effectiveness, neither within their geographical domains nor across boundaries.

The above facts have lead to the research question that was raised at the start of this research study; 'whether or not Libya is in need for a specific National Quality Award (NQA) rather than using an existing one?' The most plausible explanations, was that some of the IQA's criteria inherent to the discipline do not fit certain countries, causing friction in implementation practices. This was evident in the case of Dubai, when they have adopted the Malcolm Baldrige National Quality Award, and found it to be beyond their industry's
quality maturity level. However, this predicament made them change to the EQA and even with this shift there are discussions of down scaling the EQA to suit their circumstances.

As per the above research question, a preliminary pilot survey applying an interview based approach was conducted in Libya for approving or disapproving the need for a specific NQA Award as follows:

5.3.1.1 Interview based approach

For setting the research scene, and identifying the quality schemes and concepts that are in place and or those that have a chance of being implemented in the near future within the Libyan Industry. Consequently, the author initiated this project with a series of interviews under the title "Business Excellence concepts and the associated National Quality Awards", Appendix I. The interviews were conducted with a number of senior managers and quality practitioners of diversified sectors of the economy across Libya. These managers were identified at the quality conference held in October 2000, organised by Elhira Consultancy and Quality Engineering. Approximately 100 senior managers and quality practitioners were approached, however; only 24 of them took part in the interview due to unforeseen reasons. These individuals were therefore "self-selecting". Each tape-recorded, interview was then transcribed and coded. The research results were aggregated and analysed accordingly. The findings are as follows:

The need for a tailor made National Quality Award for Libya

Companies were asked to indicate their level of familiarity with the NQA’s - Nine companies said that they had heard of it but were not familiar with their structure; while three companies said that they were familiar with the structure of such models, but not its application. Twelve of these surveyed companies commented negatively. Companies were then asked to indicate whether they agreed/disagreed to have a specific tailor-made Libyan National Quality Award. The majority of the respondents, 97 %, said yes. See Pilot Survey, Appendix I.
Investigating the factors affecting the development of NQA

A. National Quality Awards implementation

Several questions of the interviews referred to the principles of BE and posed the question: The following outcomes are derived from the key elements of the IQA's (e.g. EFQMA and MBNQA), which are the most important to your organisation? The overwhelming response from companies was that they wanted improved leadership and business processes, followed by more training. Companies were then asked how influential these factors had been on their decision about whether or not to use an NQA. The most popular responses here related to:

1. There were other quality schemes already in use within some of these companies and therefore quality schemes were not new to these organisations.
2. The need to fit the NQA with other existing internal quality programmes or policies;
3. A company's internal capacity to implement the scheme in terms of staff times, skills and experience.

Finally, companies were asked on the likelihood of considering the implementation of an NQA by their organisation in the near future, if there was one. This attracted a wide range of responses. While none of the companies thought it not at all likely that this would happen, 19 companies felt that it was either more likely than less likely or very likely to happen. Two companies said that they did not know, and three companies thought that it was less likely, rather than more likely, that the Business Excellence Model (BEM) would be implemented by their organisation.

The overall results of the interviews are that quality schemes are not embedded in Libyan companies. However, companies have begun to consider the use of quality schemes for product/service improvements. One of the most popular schemes examined is the ISO 9001:2000; companies have generally responded favourably to the recent promotion of TQM by the Libyan Quality Society (LQS) and Libyan National Centre for Standards and Metrology (LNCSM) and some private consultants. Most companies appear to be willing to co-operate with any Government-driven approach for promoting and implementing any TQM initiative.
Investigating the factors affecting the development of NQA

In summary, the pilot study revealed that the development of a specific tailor-made NQA model is imperative for the Libyan industry. As it was indicated above there are several shortcomings which affect highly the growth and development of Libyan industry. Moreover, the pilot findings suggest interesting directions for further research. A more direct extension of this study is to further investigate the possibility of developing an NQA model that suits the Libyan industrial circumstances, and for it to be carried out in across wider range of industries, and then use the findings of the present research as a hypothesis for a survey research. The latter endeavour, however, requires more data on, and insights into, how NQA’s were developed and implemented in the developing countries, in order to develop a valid instrument to develop an NQA in developing countries such as Libya.

5.3.2 Conclusion

In conclusion, based on these results, it is recommended that a similar study be conducted within the Libyan industry using similar measurement instruments to make strong statements about which TQM factors are critical for TQM implementation within Libyan organisation. The criticalness of a factor should also be measured by its contribution to various performance measures and not solely by the extent of its adoption. The true ‘causal’ relationships among TQM factors, and their effects on performance, can only be examined with longitudinal studies, since there is a major gap in the literature for longitudinal studies. In addition, the role of contingency factors such as: technology, culture, the extent of industrialisation, government regulations, and so on must be taken into account to obtain more accurate results.

In order to establish a system for generating the appropriate questionnaires, three set of statements were devised each of these questionnaires consisted of several close ended statements were generated based on the above findings, which ideally represent the entire Libyan National Environmental Conditions. The empirical research carried out for this section is guided by its prime objective; “the examination of the factors that would hamper or enhance successful TQM implementation in the Libyan industrial context for the purpose of providing guidelines for developing an NQA model for the Libyan industry”. The methodology adopted for this empirical research is as indicated in the research methodology chapter of this study. The following section presents and analyses the results
of these three sets of questionnaires, which seeks to investigate the factors affecting the development of an NQ Award tailor made for Libya.

In order to establish a more comprehensive approach for the development of an NQA model tailor made for Libya, it becomes imperative to those factors that are found to affect the development of an NQA model. Those factors were identified in the literature review; Socio-Economic Development, Culture, TQM Maturity. Therefore, the following section seeks to examine these factors within the Libyan industrial context.

5.4 The Factors Affecting the Development of NQA for Libya

This section will present and analyse the results of the factors (National Environmental Conditions) affecting the development of an NQA in Libya:

- Socio-Economic Development  
- Culture  
- TQM Maturity

5.4.1 The Socio-Economic Development within Libya

5.4.1.1 Introduction

This section aims to present the results and analysis of the macro-economic and the socio-political conditions, characteristics, constraints and implications in Libyan. This in return will contribute to the recently emerged research studies aiming at improving an understanding of the nature of Libyan business performance. As per the literature review, Libya is manifestly lagging behind other advanced regions in the world in terms of knowledge, skills, technological capabilities, spending on ICT, competitiveness, integration in the world economy and average growth rate. The poor performance leads to insignificant share of Libya in the new/global economic system, poor technology achievement index and capacity to create knowledge.

However, a precise and up to date investigation of the Libyan economic development is needed when it comes to developing any management model tailor made specifically for the country. This argument was raised in the literature chapter 2, which stated that a country’ TQM maturity level is tied to its economic growth and development. Thus, an investigation of the micro-economic development level within Libyan was conducted for this research study using the Technology Achievement Index (TAI) introduced by the global Human Development Report. The questionnaires and the TAI four dimensions are as per Appendix II.
5.4.1.2 Results and analysis

The analysis aims to provide a comparative assessment and more in-depth overview of the constraints and implications across Libya according to certain criterion, mainly the classification of Libya according to development/income level. The selection of this criterion is quite consistent with the conventional view concerning the positive relationship between knowledge necessary for building efficient NQA and development/income level.

It was indicated in the literature review (Chapter 2) that researchers categorised countries into two groups: the core innovators and the non-core innovators. Core innovators are countries with more than 15 US (United States) utility patents registered per million population; non-core innovators are all other countries. For the core innovators, extra emphasis is placed on the role of innovation and technology. The weightings for both core/non-core innovators are calculated as follows:

Growth Competitiveness Index for core innovators = 1/2 technology index + 1/4 public institutions index + 1/4 macroeconomic environment index

Growth Competitiveness Index for non-core innovators = 1/3 technology index + 1/3 public institutions index + 1/3 macroeconomic environment index (i.e. a simple average of the three component indexes)

**Technology index components**

The technology index is calculated for the core and non-core innovators as follows:

- technology index for core innovators = 1/2 innovation sub-index + 1/2 information and communication technology sub-index
- technology index for non-core innovators = 1/8 innovation sub-index + 3/8 technology transfer sub-index + 1/2 information and communication technology sub-index

The main pillars of the Growth Competitiveness Index are: (i) macroeconomic environment, (ii) quality of public institutions, (iii) technology, human development, infrastructure, etc. however, a thorough investigation of the last element was taken as the major index for gauging the Libyan development and growth.
Investigating the factors affecting the development of NQA

For this purpose the author has elected to apply the Technology Achievement Index (TAI) that was introduce by the global Human Development Report. The Technology Achievement Index (TAI) is based on eight indicators in four dimensions; technology creation, diffusion of recent innovations, diffusion of old innovations and human skills. This index shows how well a country is creating and diffusing technology and building a human skills base, reflecting a given society's ability to participate in the network age. Accordingly, an investigation of the Libyan conditions was conducted, as per Table 5-2, which provides the TAI of Libya with respect to the four dimensions and their eight indicators. It can be inferred from the table that Libya is lagging behind as it is standing out of the classification criteria (Leaders, Potential Leaders, and Marginalised). According to the index Libya lies in the "others" region, whereas, the "Leaders" are led by Finland, followed by the United States and Sweden.

<table>
<thead>
<tr>
<th>No</th>
<th>Dimension of the TAI</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Technology Creation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Patents granted to residents (per million people) 2002</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Receipts of royalties and licenses fees (US$ per 1000 people) 2002</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Diffusion of Recent Innovation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Internet hosts (per 1000 people) 2002</td>
<td>0.0005</td>
</tr>
<tr>
<td></td>
<td>High and medium technology exports (as % of total goods export) 2002</td>
<td>1.8</td>
</tr>
<tr>
<td>3</td>
<td>Diffusion of Old Innovation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Telephones (mainline and cellular, per 1000 people) 2002</td>
<td>118</td>
</tr>
<tr>
<td></td>
<td>Electricity consumption (Kilowatt-hours per capita) 2002</td>
<td>3,677</td>
</tr>
<tr>
<td>4</td>
<td>Human Skills</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mean years of schooling (age 15 and above) 2002</td>
<td>81.7</td>
</tr>
<tr>
<td></td>
<td>Gross tertiary science enrolment ratio (%) 2002</td>
<td>89</td>
</tr>
</tbody>
</table>

Table 5-2 Libya's Technology Achievement Index

On the other hand, and as per Table 5-2 above, we could see that out of the four dimensions Libya is doing very well in the Human Skills dimension. Where we could see that Libya has scored high in both indicator (Mean years of schooling and Gross tertiary science enrolment ratio) 61.7 and 89 respectively. This is in conforms with the 2001 global Human Development Index (HDI) which placed Libya in the 59th position (out of 162 countries) as per Table 5-3 below.
From the table we could see that Libya lies ahead of Lebanon (65), Saudi Arabia (68), and Algeria (100). The HDI, which is a key part of the UNDP global Human Development Report that measures countries' levels of human development according to three criteria: life expectancy, educational achievements and purchasing power in parity dollar value. The 2001 ranking puts Norway in first position in human development, followed by Australia and Canada.

The report concludes that information and communications technology can make an important development impact, because it can overcome barriers of social, economic and geographical isolation, increase access to information and education, and enable poor people to participate in more of the decisions that affect their lives. At the same time, the report emphasizes the dangers inherent in the so called “digital divide” in which the uneven spread of modern information and communications technology will further handicap countries and societies worldwide which are already struggling to alleviate poverty and its effects. To highlight this the report points to the fact that developed countries have 80% of the world's Internet users, and while in the United States connecting to Internet cost only 1.2% of an average salary, in Nepal it costs 278% of an average salary.

The report also examines the brain drain that has been depriving developing and transition economies of some of their most talented professionals. It proposes ways for such countries to recoup their investments in education as well as providing incentives to encourage professionals studying or working abroad to return home.

<table>
<thead>
<tr>
<th>Country</th>
<th>Rank</th>
<th>Country</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norway</td>
<td>1</td>
<td>Bulgaria</td>
<td>57</td>
</tr>
<tr>
<td>Australia</td>
<td>2</td>
<td>Romania</td>
<td>58</td>
</tr>
<tr>
<td>Canada</td>
<td>3</td>
<td>Libya</td>
<td>59</td>
</tr>
<tr>
<td>Sweden</td>
<td>4</td>
<td>Macedonia</td>
<td>60</td>
</tr>
<tr>
<td>Belgium</td>
<td>5</td>
<td>Lebanon</td>
<td>65</td>
</tr>
<tr>
<td>United States</td>
<td>6</td>
<td>Saudi Arabia</td>
<td>68</td>
</tr>
<tr>
<td>Iceland</td>
<td>7</td>
<td>Algeria</td>
<td>100</td>
</tr>
<tr>
<td>Netherlands</td>
<td>8</td>
<td>Burundi</td>
<td>160</td>
</tr>
<tr>
<td>Japan</td>
<td>9</td>
<td>Niger</td>
<td>161</td>
</tr>
<tr>
<td>Finland</td>
<td>10</td>
<td>Sierra Leone</td>
<td>162</td>
</tr>
</tbody>
</table>

Table 5-3 HDI ranking
5.4.1.3 Summary of the Libyan macroeconomic environment

From the literature review conducted under this research project and the author's experience within the Libyan industry, the Libyan macroeconomic environment may be summarised as follows:

- The poor state of public finance, huge public sector deficits, (remarkable in times of growth, growth might make fiscal adjustment easier).
- The stock of public sector debt is high, indicating a public sector management problem. It prevents the government from being able to allocate current expenditure to invest in education, infrastructure, etc.
- Inflation is rather low. However, there is no reason for complacency, as low inflation is also due to exchange rate management and pegged currencies (that, in return, has a negative impact on price competitiveness).
- The spread of interest rates of loans and deposits is high, indicating intervention and non-transparent capital markets.
- There are no reform plans on paper. Libya is in need of a clear vision.
- The past decade was a lost one for Libya. It was not conducive to private sector development, growth, or employment. In the past ten years, Libya witnessed a severe economic crisis. One out of four job seekers does not find a new job. This was all due to the UN, European, and US Sanctions on Libya.
- Libya has embarked on a path of reform that emphasises manufacturing over resources (from oil to non-oil), from public sector- to private sector-driven growth, from import substitution to export-led growth.
- Libya, as any other country aiming to reform, must consider the deep interrelationships that exist between the issue areas to be reformed. Issue areas are inherently interrelated.

However, becoming more competitive is not only due to an economic rationale, but also a social necessity. Libya needs to create more additional jobs in the coming years in order to absorb new labour entrants. This requires certain growth rates per annum. Growth rates of the past four years are an illusion. They are based on increased oil revenues and
potentially undermine reform efforts. Business shall be one of the key drivers creating that

Corporate governance is not taken seriously in Libya. There is little buy-in to principles like
fairness, accountability, and governance. There is no empirical research available on the
issue of corporate governance in Libya, and no single study on corporate governance,

5.4.1.4 Conclusion

From the empirical findings Table 5-2 of the technology domination within the Libyan
industrial and public environments, using the TAI index, indicated that Libya lies out of
class “others” level, which is somewhere below 20 % of the standard international level.
This indicates that Libya is struggling to diffuse both old technologies and leverage new
technologies. Libya faces many handicaps similar to those in many developing nations
world wide, such as lower levels of education, lower technology penetration, and higher
levels of poverty, as they attempt to compete with the more developed nations on the IT
frontier.

Although, Libya is a major oil producer, nation wide infrastructure wasn’t fully and
effectively developed, when in comparison with the Arab oil producing countries, due to the
fact that Libya adopted the socialist system for about three decades as well as the
sanctions that were imposed on Libya by the USA in 1986, followed by the United Nations
economic sanctions in 1993, where the latter was finally lifted in 1999. Despite U.S.
sanctions, foreign investment in the oil sector continued, particularly from European
companies. The Libyan market re-opened following the restoration of diplomatic relations

Moreover, and as per the 2001 Human Development Report which recommends that
countries should create an environment that encourages technological innovation.
Therefore, the first step for Libya toward this goal should be the establishment of a national
vision and plans for the utilization of ICT. This vision will need to incorporate a broad-based
technology strategy designed in conjunction with all stakeholders, address the issue of a
competitive telecommunications sector, aim to stimulate research and development,
rethink education systems to meet the challenges of the new network age and provide ongoing skills training in ICT for the purpose of elevating national performance and consequently pave the ground for the implementation of an NQA.

From the above it may be concluded that for the foreseeable future it is likely that Libyan organisations will lag behind organisations in the developed nations, in terms of overall quality adoption. Notwithstanding isolated cases of adoption of certain initiatives (such as ISO 9001 and some TQM tools and techniques) the overall lag will continue to pose challenges for managers and decision makers in the Libyan government and the society at large. Significant macro-economic and regulatory reform needs to be undertaken to improve technology infrastructures and quality adoption. Creating clusters of advanced self assessment techniques can help to jumpstart and speed up the process. This is happening today, slowly but surely in some developing nations. However, quality is also moving forward at a fast pace, and (quality adoption) gaps are sometimes increasing rather than decreasing between Libyan organisations and those in developing nations.

5.4.2 The Culture within the Libyan Industrial Context
5.4.2.1 Introduction

This section investigates the organisational culture and management style needed for an NQA development and the TQM implementation within Libyan organisations see Appendix III which presents organisational culture vs. management styles. This section aims to identify both the exiting and preferred organisational culture within Libyan organisations, based on the questionnaire designed by Roger Harrison (1992) as shown in Appendix III. This study will provide the basis for Libyan managers to plan the necessary steps towards implementing TQM, and in particular, any changes that are needed within their management styles, in order to create the optimum environment for TQM, and TQM Self Assessment Frameworks.

It is argued by researchers (Flynn et al., 1994; Samson and Terziovski, 1999) that in order to identify the typical organisational culture that can function as "fertile soil" for TQM, it would be better if researchers refer to the established models in the area. There are several models devised in this direction which include:
Investigating the factors affecting the development of NQA

- Hofstede's (1980) cultural dimensions of individualism versus collectivism, high versus low power distance, high versus low uncertainty avoidance & masculinity versus femininity;
- the organisational culture profile (OCP) developed by O'Reilly et al., (1991);
- The competing values framework (CVF) developed by Denison and Spreitzer (1991), and Quinn, R.E. (1988);

In this research, it has been decided that the "Diagnosing Organisational Culture" questionnaire (Harrison, 1992) is more suitable for studies relating to the effect of organisational culture on self assessment frameworks. This is seen by researchers as more adequate for such studies, as it is designed to diagnose the management style suitable for TQM. This was also echoed during a private conversation the author had with Professor Kanji, in which he stated that "It is more important to investigate quality culture rather than organisation culture, as there is no such thing".

5.4.2.2 Questionnaire design

The questionnaire attached on Appendix III was formulated by Harrison, (1992) for the purpose of identifying the actual and preferred management style. The questionnaire consist of 15 closed questions, each comprising four replies resembling one of the four management styles (Power, Role, Achievement and Support). The questionnaire was re-structured to make it easy to understand for the respondents from Libyan organisations, but the actual meaning and original purpose of the questions was maintained. Also the questionnaire was translated into Arabic for better understanding for the non English-speaking interviewees with the original English copy attached for reference. Questionnaire was distributed among senior and middle managers in Libyan organisations.

The methodology adopted for this empirical research is as indicated in the research methodology chapter 4 of this study. The study was based on an empirical research carried out in Libya which targeted two different groups; an ISO 9000 certified manufacturing organisation, state owned and large in size and a heterogeneous mixture of companies involving different nationalities, sectors, types and sizes. The findings of this study are discussed in the next sections.
5.4.2.3 Results and analysis

Analysing the questionnaires provided the following results; Table 5-4 Culture Questionnaire results, shows how participants view their organisation’s management style, and how they would prefer it to be, with respect to the four management styles.

<table>
<thead>
<tr>
<th>Group</th>
<th>Group: Mix</th>
<th>ISO Certified Co.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Existing</td>
<td>Preferred</td>
</tr>
<tr>
<td>Power</td>
<td>56%</td>
<td>5%</td>
</tr>
<tr>
<td>Role</td>
<td>25%</td>
<td>18%</td>
</tr>
<tr>
<td>Achievement</td>
<td>10%</td>
<td>43%</td>
</tr>
<tr>
<td>Support</td>
<td>7%</td>
<td>34%</td>
</tr>
</tbody>
</table>

Table 5-4 Culture Questionnaire results

The questionnaire was targeting senior and middle managers in Libya organisations for the purpose of identifying the existing management style (the management style practiced for the time of the survey) and the preferred management style (the management style that respondents want to see within their organisations). From the results, we could see the group mix perceive that the existing and most dominant management style is Power where the preferred management style is Achievement. However, the ISO organisation participants perceive that the existing and most dominant management style is the Role and the preferred management style is Achievement.

Figure 5-1 Existing Management Style: ISO vs. Non-ISO Organisations
Investigating the factors affecting the development of NQA

Figure 5-1 Existing Management Style: ISO vs. Non-ISO Organisations Compares the existing management styles of the ISO certified organisation with the group mix. It can be seen that the dominant management style for the group is that of Power, which is least favourable for implementing TQM. The dominant management style for the ISO certified organisation is Role, which depicts that in implementing ISO procedures the management style has become more rule based, but provides an objective measure for reviewing and rewarding human performance.

Figure 5-2 Compares the preferred management styles that the employees from the ISO certified organisation verses the group mix. It is seen that key managers from both groups prefer the management styles to be based on Achievement orientation, which empowers people and provides an environment for team working.

Both groups want to move away from the Power management culture towards Achievement management style, which to a certain extent support the argument of Roger Harrison with respect to type of management style required for the success of TQM. The survey also indicates that, the ISO certified organisation has made some progress in changing the culture with respect to the group mix of companies. These findings are expected, as the requirements of ISO 9000 are closely aligned with the principals of TQM.
It can be concluded that ISO is a tool for promoting the culture change and therefore, may be the first step of the road map towards TQM implementation.

5.4.2.4 Conclusion

As it has been demonstrated in the literature review (Chapter 2), TQM is a comprehensive management paradigm, with many definitional elements and relationships that appear to transcend cultural and national boundaries. Empirical literature on the convergence theory across countries with respect to the applicability of TQM was not supported. However, caution needs to be exercised in making this conclusive statement. Though, the empirical findings of (Kelley et al., 1987 and Ralston et al., 1997) tend to side with the National Specificity argument.

If TQM is to succeed in Libyan Organisations, organisational culture needs to change to become more flexible and customer-oriented. There is a need to have dynamism in the business where the environment is safe to take risks. People have to feel that they belong, and the levels of morale, trust and participation should be high. Building teamwork, opportunities for growth and development, and decentralised decisions are important factors for the desired culture. However, the survey also indicates that managers within Libyan industry express a clear desire to move towards the management styles that are required for effective TQM implementation, which consequently would help in paving the way towards the development of an NQ Award tailor made for Libya.

Before thinking of implementing an NQA approach within the Libyan Industry, it is advisable for an organisation to understand the dominant culture that exists within it. This is important for two reasons; firstly, it provides more reliable data for managing the implementation process, and secondly it identifies priorities for action. Organisational culture change is not an easy task to undertake, but using such a management culture questionnaire can give organisations an assessment of their current position, and a clear picture of what changes are needed to support a total quality approach.

The ways to achieve NQA success are much broader and more complex than the pure climate and cultural factors discussed and assessed in this study. The implementation of NQA includes many issues or factors that need to be understood and implemented with
investigating the factors affecting the development of NQA

Careful planning and not merely linked to cultural issues. However, by obtaining environmental and cultural information relative to a successful NQA process, decision-makers, managers and/or organisations in Libya can identify problem areas in advance, based on culture gaps with desired values / culture and congruence with undesired values.

5.4.3 TQM Maturity in Libya

5.4.3.1 Introduction

Total quality management is still seen by quality practitioners and academics as being important, although there are few empirical studies and research evidence to show that quality principles also can be success in developing countries. However, many tools and instruments that have been developed to assist in the implementation of the quality principles are too complex for new starters' organizations, particularly in the developing countries.

This section investigates the TQM maturity level of Libyan organizations in order for them to have a fresh start towards the journey to excellence and help in the development of a process development framework for developing an NQA for Libya. This is accomplished through empirical research carried out in Libya through the duration of this study, by using a set of questionnaires specifically developed for the Libyan context, and using some techniques previously developed by quality practitioners worldwide.

5.4.3.2 Questionnaire design

At the beginning of this research project there were practically no empirical reports describing the analysis or evaluation for improving quality within Libyan organisations. Therefore, a pilot scheme took place for the purpose of designing this questionnaire. The primary objective of the questionnaire was to lay out the ground for developing a process development framework for devising and introducing a TQM self-assessment framework for Libya, with the following aims in consideration:

- Investigating factors affecting development of an NQA for Libya;
- Introducing a TQM self assessment framework as a quality-promoting change process;
Investigating the factors affecting the development of NQA

- An assessment scheme was carried to assist companies for evaluating their organisational performance in line with the ISO 9000 and TQM philosophy for the purpose of identifying the quality maturity level within Libyan organisation.

- When questionnaire were designed, various aspects were considered (e.g. Interviews and discussions with various people at different levels and trades from several Libyan organisations from a diversified background).

Two sets of questionnaires were devised which revolved around the following:

I. Quality culture and quality management practice, Appendix IV.
II. Quality maturity level, Appendix V.

5.4.3.3 Results and analysis

I. Quality culture and quality management practices

As the first step towards the identification of the TQM maturity within Libyan organisations, a pilot survey was conducted with a number of key managers within the Libyan industry. The questionnaire was presented in the form of a semi-structured surveys targeting Libyan senior managers for the purpose of identify the actual quality culture and quality management practices within Libyan organisations.

a) Quality culture

The questionnaire results indicated that quality developments in 86 % of Libya companies are led either collectively by the senior management team (50 %) or individually by a quality manager or small quality unit (half each).

Companies showed a high degree of consensus in relation to the main influences on their organisation's approach to quality development. 70 % of the companies surveyed said that the need to enhance client/customer confidence in their products/service was most important; however, 93 % of companies ranked this influence in their top three for importance. The need to achieve competitive edge/improve market share was ranked by 79 % of companies in their top three for influence.

171
Investigating the factors affecting the development of NOA

The results on how companies define high quality showed a large measure of agreement. A total of 75% of companies surveyed said that meeting customer demands constituted high quality, while one-third of those same respondents also pointed out that the intention was to exceed customer demands, in an effort to provide a quality product/service. This can be attributed to the fact that only a small portion of the surveyed Libyan companies are aware of the latest quality trends.

Further consensus was expressed by companies in relation to how quality development is addressed in the organisation's planning process. A total of 86% of companies surveyed devote at least a section of their development plan to quality development.

b) Quality management practices

A majority of companies surveyed said that they had considered two quality schemes: ISO 9001:2000 - 65% of the top three ranked answers, to help develop their products/service. A significant minority (43% of top three ranked answers) highlighted the TQM and quality improvement tools.

Companies were then asked to identify the most influential sources of information which they had turned to when considering using one or more of these quality schemes. Not surprisingly, the most popular source of information had been obtained from quality seminars/workshop. One other point of interest here is the relatively little use made to date of quality networks, such as the Libyan National Centre for Standards and Metrology (LNCSM). The LNCSM contributed to the conference held in October 2000, organised by Elhira Consultancy and Quality Engineering. The questionnaire asked about sources of information, but did not seek clarification in relation to the intensity of contacts. Nevertheless, the relatively small number of bodies consulted by companies suggests that only limited activity took place before the organisation of the conference.

The questionnaire also sought information on which quality schemes, if any, companies are now using. Four companies indicated that they are using ISO 9000. Independent enquiries suggest that only some companies had started implementing some basics of TQM initiatives, and one company was implementing Six Sigma. The interpretation here, presumably, is that the remaining companies are working towards ISO registration. Four
companies said that they were not using any quality scheme, while one company which said that they were using the ISO 9004 standard Quality Management Systems: Guidelines for performance improvements.

II. Quality maturity level

As detailed earlier in Chapter 2, there are several methods developed by researchers and quality practitioners for assessing the TQM implementation level within an organisation. One approach in getting a rough figure of the TQM implementation level is the methodology introduced by Dale, (1999). He classifies organisations, which are engaged in TQM implementation programs, into six categories:

1) Uncommitted: the organisation has no formal process for quality improvement and it may be totally ignorant of TQM.

2) Drifters: the organisation has been engaged in a process of continuous improvement for 2-3 years, but some members are expressing disappointment that TQM has not lived up to expectations. TQM is still considered the latest management fad.

3) Tool pushers: organisation has a typically formal quality management system (for example ISO 9001 based quality management system) and it has been engaged in continuous improvement for 3-5 years. It employs a selection of quality management tools such as statistical process control, design of experiment, quality function deployment, and benchmarking, are used for quick fixes of problems.

4) Improvers: Organisation has engaged in a process of continuous improvement for 3-8 years and it has made significant improvements. The CEO and senior leadership have committed themselves to TQM through their leadership and personal actions, but the TQM program is still mainly in the hands of a few enthusiastic individuals.

5) Award Winners: a leadership culture exists throughout the business and the program is not dependent on the commitment and drive of few individuals. All employees participate in improvement activities, and a number of successful changes have been made.

6) World Class: The never-ending pursuit of complete customer satisfaction to satisfy latent customer requirements is a personal goal for everyone. Company values are fully understood and shared by employees, customers and suppliers.
Investigating the factors affecting the development of NQA

The detailed requirements in each level are given in Dale (1999). Based on an overview of each level; this research will assume that Libyan organisations generally will not exceed level three. In many units, quality tools are not used to the extent that they would be considered to have completely met level 3 requirements. However, major Libyan organisations have barely been able to implement the ISO 9001 based quality management system.

However, the approach that is used for this study is of that developed by Krasachol and Guh, (2001), for measuring quality management in the developing countries as detailed in Appendix V of this project.

The pilot study using Krasachol and Guh, (2001), Appendix V on Libyan governmental bodies, institutions and organisations indicated that Libyan quality development level is still very much lacking behind, as it's shown on the following findings:

1) Nation-wide promotion of quality through education and training - mainly by government but private sector begin to be actively involved (basic stage).
2) Competent consultants - very few local competent consultants - need to import foreign consultants (basic stage).
3) Standardisation and accreditation system - The national system is more established but still has deficiencies in coverage/scope (basic / developed stage).
4) ISO 9000 - a small number of companies certified, and most of them are exporters (basic stage).
5) TQM - very few companies, most of them are joint venture and foreign owned (basic stage).
6) NQA - none, however, the setting up of a National Quality Award is in process (basic stage).
7) Perception of quality level in global market - very poor (basic stage).
8) R&D - a few isolated industry projects (basic stage).

5.4.3.4 Discussion

Empirical findings from this research project ascertained that most Libyan organisations have recognised the importance of the TQM implementation on one hand, but have
difficulties in putting the principles of TQM into practice on the other hand. Common TQM obstacles and implementation problems encompass inappropriate organisational culture, a lack of management leadership, inadequate training, failure to recognise the importance of employee involvement and participation, a lack of cooperation, the time which needs to be devoted to TQM, and the financial commitments needed to support training and education. To tackle them, visionary strategy and restructuring must be accompanied by organisational commitment to a cultural shift. Moving an organisation from resistance through inertia and passive acceptance of change to active involvement and finally commitment requires highly visual leadership as a model of desired behaviour and attitudes, continuing support and reinforcement, building new work relations and cross-training.

5.4.3.5 Conclusion

In conclusion, this part of the research investigated the quality maturity level of Libyan organisations through information provided by organisations, questionnaires and relevant literature. Also, the quality issue and its means, processes and people as a unified and motivated team, and their role in creating the climate and culture of success were looked at. The following points summarise the most important results of the survey:

1. To initiate a cultural change it is in many cases necessary to analyse one or two basic patterns, which are diagnosed as "neuralgic points". It is hereby important that the analysis reaches the unconscious level of the basic cultural assumptions.

2. At this point the danger exists that the planned culture change can appear an overly large task. For this reason it is important to take a piece of the target culture as an orientation point. In this project the anchor was quality culture.

3. It should be critically noted that the findings provide only estimations: to achieve a substantial cultural change an impetus from outside is generally needed, as for this type of change an external perception is in most cases necessary.

4. In summary, it can be stated that for several organisations that took part in the study, the foundations for TQM implementation and operational improvement were laid, which will allow these firms to independently continue with the implementation process.
In conclusion, most organisations that took part in the study have set their priorities for the top improvements that they would like to see in their organisations and that successful TQM implementation in Libyan organisations would rely significantly on leadership, management commitment, and culture change with strategic planning (direction of mission and clear vision) in place.

5.4.4 Conclusion

The above section has presented and analysed the results obtained from the Libyan National Environmental Conditions (Socio-economic development, Culture and TQM maturity). The three sets of questionnaire that was conducted towards the above purpose, has all indicated an overall recognition for the need to change. Results indicated that Libya organisations are still in their basic stages within these three factors, which are found in the literature to affect the development of an NQA for the country under study. Therefore, Libyan organisations are advised to improve on the areas, which seem to be lacking in their functions, so that they will be ready when they are going to embark on their journey to excellence.

Furthermore, the author suggests that for the local industry to survive, Libyan decision makers have to invest highly in new technology and promote advanced quality and managerial approaches. Consecutively, Libyan companies have to invest in the development of high value-added products, the introduction of advanced technologies and new production methods. Equally important is the implementation of an efficient and effective approach to quality management. Moreover, organisations also need to have management and people commitments, and to build a quality culture that commits to organisational performance improvement. The TQM efforts can facilitate an adequate application of new technologies, equipment and production methods, allocation of resources, improvement of production and management efficiency, attainment of environmental, health and safety requirement, and public and social accountability. However, over-emphasis in the technical aspects, without people commitment and cultivation of the culture, will often delay the real implementation of TQM.

However, in order to pursue further with the development of an NQA that suits the Libyan National Environmental conditions, it becomes essential to identify the factors that are
critical for the successful implementation of TQM within the Libyan industrial context. Thus, a system was established for generating the model criteria that led to a set of statements, which ideally represent the entire quality domain. The following section presents and analyses the results of these questionnaires.

5.5 TQM-Critical Success Factors within Libya

An extensive review and classification of the relevant literature revealed that, in a broad sense, the following eight TQM factors were the most often extracted factors: leadership, strategic planning, customer focus, resource management, human resource management, process management, supplier management, and results. The instrument approach used was similar to the one that was developed by Ramirez and Loney (1993), who analysed the perception of successful quality processes as applied to the MBNQA. These factors are listed in Table 5-5 with their associated indicators. Employing the practice of Handfield et al. (1998), these eight factors are congruent with many of the quality management instruments that were developed by researchers such as Saraph et al. (1989), Black and Porter (1996), and Ahire et al. (1996).

<table>
<thead>
<tr>
<th>No.</th>
<th>Major Criterion/Sub-Criterion</th>
<th>No.</th>
<th>Major Criterion/Sub-Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>Leadership</td>
<td>F5</td>
<td>Suppliers/partners management and performance</td>
</tr>
<tr>
<td>1</td>
<td>Top management commitment and leadership</td>
<td>15</td>
<td>Suppliers partners relationship management</td>
</tr>
<tr>
<td>2</td>
<td>Supervisory leadership</td>
<td>16</td>
<td>Supplier partners performance and quality</td>
</tr>
<tr>
<td>3</td>
<td>Social responsibility</td>
<td>17</td>
<td>Supplier involvement</td>
</tr>
<tr>
<td>F2</td>
<td>Strategic planning</td>
<td>F6</td>
<td>Process management</td>
</tr>
<tr>
<td>4</td>
<td>Quality mission, vision, goals and policy</td>
<td>18</td>
<td>Product and service design</td>
</tr>
<tr>
<td>5</td>
<td>Strategy development</td>
<td>19</td>
<td>Process control</td>
</tr>
<tr>
<td>6</td>
<td>Deployment of policy and strategy</td>
<td>20</td>
<td>Innovation and continuous improvement of processes</td>
</tr>
<tr>
<td>F3</td>
<td>Human resource management</td>
<td>F7</td>
<td>Customer Focus</td>
</tr>
<tr>
<td>7</td>
<td>Employee involvement</td>
<td>21</td>
<td>Customer and market knowledge</td>
</tr>
<tr>
<td>8</td>
<td>Employee empowerment</td>
<td>22</td>
<td>Customer relationship management</td>
</tr>
<tr>
<td>9</td>
<td>Employee education and training</td>
<td>23</td>
<td>Attention to customer satisfaction</td>
</tr>
<tr>
<td>10</td>
<td>Employee wellbeing and satisfaction</td>
<td>24</td>
<td>Customer satisfaction results</td>
</tr>
<tr>
<td>F4</td>
<td>Resource management</td>
<td>25</td>
<td>Human resources satisfaction results</td>
</tr>
<tr>
<td>11</td>
<td>Information management utilisation and analysis</td>
<td>26</td>
<td>Impact on society (society &amp; environment)</td>
</tr>
<tr>
<td>12</td>
<td>Material resources management</td>
<td>27</td>
<td>Financial and market results</td>
</tr>
<tr>
<td>13</td>
<td>Technology resources management</td>
<td>28</td>
<td>Organisational effectiveness results</td>
</tr>
<tr>
<td>14</td>
<td>Financial resources management</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5-5 The TQM-CSF constructs investigated under this study

The initial version of the questionnaire Appendix VI was pilot tested by conducting interviews with the general managers of several companies, and edited for comprehensibility and accuracy. The instrument was then reviewed by academics at major
public universities in Libya and modified further. Finally, the resulting instrument was reviewed by quality experts, and revised further to make sure that the measures were valid, reliable, and user-friendly (Flynn et al., 1990).

5.5.1 The findings

This section presents the findings of the present study, and covers the profiles of the responding organisations, and finally the results of the statistical analyses.

a. Comparison of Critical, Important and Minor Quality Factors

There are three types of quality factors in TQM research. These are: critical, important, and minor quality factors. Hackett and Spurgeon (1998) and Bohan (1998) have both discussed the significance of the TQM in detail. The differences between critical, important and minor importance quality factors are of great significance, which will be discussed later.

The critical quality factors are those factors that are essential for the successful implementation of TQM. Thus, the criticality will depend on the inclusion of the factors which are deemed to be essential for the success of TQM. For the ease of data analysis, a factor with a high modal value is considered to be critical; the degree of criticality about a given quality factor is determined by the extent of agreement or disagreement from the respondents. The Variation Ratio approach is established for providing the degree of criticality (Weisberg, 1992).

The Variation Ratio (VR) values are compared across the distribution of responses. The same comparison is carried out for assessing the criticality of factors across the sample, taking into account differing sizes. It is contended that the Variation Ratio is appropriate as a 'surrogate measure' of comparing the level of response (Thigarajan and Zairi 1998). A value of zero for the Variation Ratio indicates a perfect convergence of response, in that every respondent rated the quality factor as 'critical' to the successful implementation of TQM. A value greater than zero means fewer organisations rated that quality factor as critical. At the other extreme end of criticality, the maxim value is obtained when one third of the organisations rate the quality factors as critical. The maximum value is never an integer and depends on the number of categories K.
Investigating the factors affecting the development of NOA

### Table 5-6 Classification of TQM-CSF

<table>
<thead>
<tr>
<th>No</th>
<th>TQM critical success factors</th>
<th>Variation</th>
<th>Mean</th>
<th>Tier</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>Leadership</td>
<td></td>
<td>0.30</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Top management commitment and leadership</td>
<td>0.18</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Supervisory leadership</td>
<td>0.21</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Social responsibility</td>
<td>0.52</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>F2</td>
<td>Strategic planning</td>
<td>0.31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Quality mission, vision, goals and policy</td>
<td>0.19</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Strategy development</td>
<td>0.42</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>Deployment of policy and strategy</td>
<td>0.33</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>F3</td>
<td>Resource management</td>
<td>0.33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Information management utilisation and analysis</td>
<td>0.33</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>Material resources management</td>
<td>0.31</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>Technology resources management</td>
<td>0.30</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>Financial resources management</td>
<td>0.37</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>F4</td>
<td>Process management</td>
<td>0.33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Product and service design</td>
<td>0.41</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>12</td>
<td>Process control</td>
<td>0.23</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>Innovation and continuous improvement of processes, products and services</td>
<td>0.34</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>F5</td>
<td>Human resource management</td>
<td></td>
<td>0.33</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Employee involvement</td>
<td>0.39</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>15</td>
<td>Employee empowerment</td>
<td>0.33</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>Employee education and training</td>
<td>0.21</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>17</td>
<td>Employee wellbeing and satisfaction</td>
<td>0.41</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>F6</td>
<td>Results</td>
<td></td>
<td>0.45</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Customer satisfaction results</td>
<td>0.47</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>19</td>
<td>Human resources satisfaction results</td>
<td>0.31</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>20</td>
<td>Impact on society (society &amp; environment)</td>
<td>0.62</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>21</td>
<td>Financial and market results</td>
<td>0.43</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>22</td>
<td>Organisational effectiveness results</td>
<td>0.43</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>F7</td>
<td>Customer Focus</td>
<td>0.53</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Customer and market knowledge</td>
<td>0.57</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>24</td>
<td>Customer relationship management</td>
<td>0.54</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>25</td>
<td>Attention to customer satisfaction</td>
<td>0.49</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>F8</td>
<td>Suppliers/partners management and performance</td>
<td>0.57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Suppliers partners relationship management</td>
<td>0.52</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>27</td>
<td>Supplier partners performance and quality</td>
<td>0.49</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>28</td>
<td>Supplier involvement</td>
<td>0.69</td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

Therefore, the Variation Ratio can be computed using the following VR = 1 - F, where, VR is the Variation Ratio and F is the frequency distribution of the mode. Table 5-6 above provides the 8 factors, along with their 28 indicators. The Variation Ratio, which classifies these indicators in their specific tier based on the specific Libyan industrial context, is also presented in the table.

### b. Analysing the results

In order to determine the measure of central tendency and spread, the investigative part of the research used the mode, range and variation ratio. Results analysis revealed that out
of the 28 CSF indicators, 27 were profoundly chosen by respondents as 'critical' for successful implementations of TQM; while 1 indicator (28-Supplier involvement) was found not important. The maximum scale used for the study is three and minimum one.

The variation ratio and range identified 22 indicators to have less than 0.5 majority consensus, and 5 above 0.5, which, has not being perceived by the majority of respondents as essential to TQM success; while 1 were found not important at all. Also, there is no value of variation ratio of zero, implying unanimity in this study. In this study, the variation ratio has gone over the maximal value of 0.667, which is the maximal value for this scale (Weisberg, 1992), accordingly 1 indicators was out of class (hence, acceded the maximal indicated value).

The results culminated in six critical success factors (leadership, strategic planning, process management, human resource management, resource management and results) and 22 indicators as per Table 5-6 above.

The construction of the TQM framework for criticality is dependent on two prerequisites namely quality factors and the ranking of these in terms of criticality. In this study, the use of modal category in the identification of quality factors, range and variation ratio categorise the criticality of the identified quality factors into three tiers. The first tier includes those 'Critical Quality Factors', which have the highest consensus level, 1 and consist of five quality factors and 11 indicators. The second tier includes factors, which have a variation ratio value of 0.5 or less, and consists of one quality factor and 4 indicators. The third tier includes factors with a variation ratio value of 0.5 or higher, and consists of two quality factors and 5 indicators.

The results in Table 5-6 above show the factors sorted in descending order of criticality, and grouped into three tiers representing stages of priorities emphasised by the respondents. It shows the importance of leadership and strategic planning in playing a significant role in shaping the quality focus of companies. There is also strong support provided by other empirical literature (Wilson and Collier, 2000; Pannirselvam and Ferguson, 2001; Sila and Maling. 2002) for the importance of these two factors in effectively managing an organisation and as fundamental elements within the early stages in the TQM implementation process.
The findings of the current study provide important pointers to managers in terms of managing their organisations for superior performance, which is consistent with the literature review, which established that TQM factors are holistic in that synergies must be created among them to achieve favourable business results. The study identifies leadership and strategic planning as the two factors that act as the foundations of these synergies. Therefore, as far as leadership is concerned, companies need to seek such qualities in their top leaders and supervisors that embrace the organisation's focus on quality and assume responsibility for quality and change in all aspects of management including human resource management, process management, and resource management.

The findings also indicate that there is unanimous agreement by the respondents from Libyan industry over the importance of education and training in the human resource management (HRM) criterion; and lesser importance of the other three sub-criteria of the HRM criterion (employee involvement, employee empowerment, and employee wellbeing and satisfaction). Hence, this puts the HRM criterion on the border of the required results. Table 5-6 above, similarly, shows that the results criterion has gone over the required limit of being critically accepted as prioritised by respondents, except for the human resources satisfaction results' criterion which is found within the agreed scale limits.

This agrees with findings of Thiggarajan and Zairi (1998) in their study on Malaysian organisations, who have also reported that education and training are important elements in the development of a suitable continuous improvement culture. Malaysian organisations view employee training, in problem solving and continuous improvement, as one of the main conditions for the successful implementation of TQM. They further stated that "top management must "sell" the need to create such a culture to engage the commitment of employees (Thiggarajan and Zairi 1998). In the context of this research, it is evident that education and training play no less important role in the nurturing of sound and proactive human resource capital necessary for organisational performance.

These findings are consistent with the widely held consensus in the literature which confirms the importance of senior management's commitment to quality (Thiagarajan and Zairi 1998). TQM experts unanimously agree in their thinking about the importance of top
management commitment and involvement, hence, this is echoed in other studies conducted in developing countries, such as the study of Krasachalli and Tannock (1999) who have reported that TQM implementation in Thailand is successful on the condition that top management commitment and support is present.

On the other hand, customer focus and supplier/partner management criteria as well as some other sub-criteria such as: suppliers/partners relationship management, social responsibility, and impact on society all are found to be not critical for Libyan industry. This is due to many reasons which may include: most of the participating organisations are state owned, employees status quo (low wages and their well being); the Libyan industry is still in the transitional period in its privatisation plan which started recently. As well as to the reason that Libya was under US and UN embargo for over a decade. These comments are based on the findings of the pilot study, carried out previously for this research as indicated in chapter three. It was also indicated that Libya is a third world nation and the economy is in limbo due to many factors (e.g. poor infrastructure, long term strategies, short sighted decision makers with no clear vision/mission in place, etc...). As a result, the people are more worried about providing the basic need rather than worrying about suppliers/partners relationship management, social responsibility and or impact on society.

However, some factors relationships, that were claimed to be significant in other studies, were found to be empirically non-significant in the current study. For instance, one of the interesting findings is that, contrary to the widely-held belief, customer focus has no direct or indirect effects on business results, this is due to the fact that Libya was a socialist country for almost three decade and closed to itself and relied solely on local produce, local product monopolised the market as there was no external competitors allowed to inter the Libyan market. However, the market was dry and whatever was produced was in demand. However, Wright and Snell (2002) argue that simply having a customer focus and acquiring customers may not be sufficient for success since customers can easily be lost if they have a bad experience with the products and services, or if the new entrants to the market attract them. Therefore, due to the open market strategy approach taken by the Libyan Government as part of the new reforms and the economic development programs; companies within the Libyan market should strive to attain customer loyalty and retention to achieve improved business results.
5.5.2 Critical factors content validity

Since content validity is not evaluated numerically, it is subjectively judged by the researchers. Thus, content validity depends on how well the researchers created the measurement items to cover the content domain of the variable being measured (Nunnally, 1967). Hence, the above indicated measures of the critical factors in quality management were developed based on an exhaustive review of the literature and detailed evaluations by academicians and quality practitioners, they are considered to have content validity.

5.5.3 Summary and conclusions

On the basis of survey results, the present research identified certain critical success factors for the TQM implementation in the Libyan industrial context which, consist of: (leadership, strategic planning, resource management, process management, and human resource management).

Reliability and validity of the instrument are tested using the data collected from the organisations in Libya and then compared with those of Saraph et al. (1989), and similar studies conducted in other countries. As well, this research study takes advantage of findings from a number of studies conducted in Europe Ramirez and Loney, (1993). Interestingly, the results of other studies conducted in Middle Eastern and Asian organisations seem to yield similar results (Thiagarajan, 1996; Baidoun, 2000; Al-Omair, 2002).

The level of quality management practices in Libya were found to be similar to that in the UAE firms, but on the other hand much lower to that in developed countries. The reason for the reported lower level of quality management practices in Libya is primarily because of the fact that Libyan firms are new in quality management practices due to the imposed embargo on Libyan organisations for over a decade. Whereas, firms selected from the developed countries are already firmly entrenched in quality management practices.

Overall, this research provides evidence to suggest that there are strong similarities between critical success factors for TQM implementation in developed and developing countries. For instance, similar to what has been widely reported in developed countries, in the present research top management commitment has been identified as one of the major
determinants of successful TQM implementation. This lends credence to those who argue that one of the major barriers to TQM implementation in developing countries is lack of commitment from top management (Djerdjour & Patel, 2000; Singh, 1994). Similarly, strategic planning is another critical success factor for TQM implementation, identified and widely reported in developed countries. Employee education and training are also identified as prerequisite for successful TQM implementation in Libyan organisations.

In summary, the results culminated in six critical success factors (leadership, strategic planning, process management, human resource management, resource management and results) and 22 indicators as depicted in Table 5-6. Leadership and strategic planning are found as the two most critical factors that act as the foundations of any TQM performance measurement model. The findings also indicate that there is unanimous agreement by the respondents over the importance of education and training in the human resource management (HRM) criterion; and lesser importance of the other three sub-criteria of the HRM criterion (employee involvement, employee empowerment, and employee wellbeing and satisfaction). On the other hand, customer focus and supplier/partner management criteria as well as some other sub-criteria such as: suppliers/partners relationship management, social responsibility, and impact on society all are found to be “not critical” for the Libyan industry. Furthermore, customer focus was identified as having no direct or indirect effects on business results. These findings are due to some obvious factors which include: Libya as a socialist country for some time; the UN sanction imposed on Libya for over a decade.
Chapter 6 The proposed NQA model

6.1 Chapter outlines

The main objective of this chapter is to develop a generic NQA for Libya, which will consist of four main phases. The first phase is the introduction and identification of the conceptual NQA framework tailor made for Libya along with its elements (major criteria and sub-criteria). This model is based on the results/findings taken from previous chapters 2, 3, 4, and 5. The second phase provides the linkages between the CSF's and the three main NQA attributes (TQM maturity level, culture and tech/socio/political) that are found to affect the development of an NQA. The third phase is to develop an NQA process development model using a decision scoring matrix by applying the three main NQA attributes identified in the literature. The final phase will focus on fine tuning the NQA model employing the previous phase findings.

6.2 Introduction

As we have seen from the literature review chapter 2 much has been written on the impact of TQM on organisational performance. These studies typically conclude that TQM has a positive and significant relationship with organisational performance. However, not all TQM implementations yield the satisfactory results promoted by its advocates (Brown, 1993; Harari, 1993; Tatikonda and Tatikonda, 1996). Therefore, TQM scholars, practitioners and government bodies, have all strived to develop a mechanism for assessing TQM performance. Such a mechanism is embedded in various national quality awards (NQA) developed worldwide (i.e. DP, MBNQA and EFQM). These awards are structured to revolve around TQM-CSF's specific to the country. These CSF's are referred to, when used in the award models, as the model criteria and sub-criteria.

However, past evidence has shown that TQM programmes have failed because the success factors were not in place (Curry and Kadasah, 2002). Thus, although it is necessary to implement every essential component in order to succeed, one might wonder which critical factors and methods NQA developers ought to be familiar with in order to include them in the model proposed. Thus, there is a need to construct a model that links the appropriate TQM-CSF's, and the NQA attributes, which are found to affect the development of BEMs, which are claimed to be driven by National environmental conditions of the country (e.g. economical development, culture and TQM maturity level).
6.3 NQA development

As it was stated above, National Quality Awards (NQA's) are associated firmly with self-assessment. Hence, self-assessment is a comprehensive, systematic and regular review of an organisation's activities that ultimately result in planned improvement actions (EFQM, 2002 and Henderson, 1997). The assessment process helps organisations identify their strengths, shortcomings, and best practices where they exist (Neely, 1998). According to Hillman (1994), the three main elements in self-assessment are model, measurement and management.

The process model in Figure 6-1 below provides the basis for defining the three main types of measures. The type of measure determines where in the process you can find performance indicators and where to collect data. The process model and its three types of measures also reveal the interrelationships of products and services throughout the customer-supplier chain.

Moreover, the performance measures of a business process consist of two main indicators; the enablers and the results indicators. These two indicators are linked to the business process and its outcome as per Figure 6-2 next.

Figure 6-1 the process model

Figure 6-2 relationship between Enablers and Results
The performance measures indicators and the BEM main principles are indicated in Figure 6-3 below. These principles are synthesised from the TQM initiatives developed within the last decades. These principles are associated with the two performance indicators (Enablers and Results), found by both academicians and quality practitioners to be most essential for the formulation of a dynamic and vigorous NQA framework.

1. Strategic Enablers
   - Leadership
   - Policy & Strategy

2. Tactical Enablers
   - People Management
   - Resources
   - Processes

- Customer Satisfaction
- People Satisfaction
- Impact on Society
- Business Results

**Figure 6-3 elements of a Performance Measurement Framework**

It is important to note that "CSF's" can be more than 22 and over 60 sub-criteria. Since, each person's perception of how much to breakdown any variable can be subjective, a decision where to stop with respect to the criteria, and the breakdown of sub-criteria, must be taken to align these criteria and sub-criteria with the country specific circumstances. There is a stage where further detailed criteria and sub-criteria will not provide any more accuracy, whilst increasing the complexity of the proposed model (Oger and Platt, 2000).

Moreover, to develop a country specific tailor-made Performance Measurement Framework, BE / TQM principles ought to be drafted into a set of questionnaires and voted for by local organisations, government bodies, and quality practitioners in the country under study, for the purpose of identifying the critical factors essential for the successful TQM implementation in that country. The Framework should define certain performance
categories that are interrelated, and organisations cannot achieve sustained success without sound systems and processes in place for all these categories.

The final Framework should integrate leadership and management systems that describe the essential features, characteristics and approaches of organisational systems that promote sustainable, excellent performance. Application of the principles, through the categories and items of the Framework can guide organisational improvement and success. The framework should define certain performance categories that are interrelated, and organisations cannot achieve sustained success without sound systems and processes in place for all these categories.

In this research, the BE principles in conjunction with the most common CSF's that have international consensus are used. However, the instrument used here is based on the assessment of the CSF's by individual participants, and their general consensus of certain criteria and their criticality for the successful implementation within the country under study. Therefore, the development of an NQA model should be based on the findings of the CSF's identified in the country. The selection of measurement scales to solicit such responses must be taken into consideration for both respondents and those administering the tools. Furthermore, the ease of completion and scoring method are important to the former, while ease in interpretation is important to the latter.

The CSF investigation for developing a TQM self assessment model for the Libyan industry identified six categories of evaluation criteria with respect to that of other models developed elsewhere, such as the EQA (EFQM, 2000) and MBNQA (NIST, 2002). These categories are leadership, strategic planning, resource management, process management, human resource management, and results. The criteria provide a systematic framework for assessing and measuring performance on a composite of key indicators of organisation performance (Figure 6-3). This includes evaluating performance, identifying areas for improvement, and developing recommendations and plans for further action. A total of 1000 score points are allocated to 22 items of the 6 categories, each focusing on a major requirement. Under each item, there are several areas to be addressed.

The organisation can assess its performance on these areas with relevant information. The framework constitutes of several core approaches, deployment and results elements, that
Investigating the factors affecting the development of NQA

govern the operations of the TQM self assessment model, and the initiation of continuous improvement. A summary of evaluation criteria, items and sub-items of the model is shown in Table 6-1.

<table>
<thead>
<tr>
<th>No</th>
<th>TQM critical success factors</th>
<th>No</th>
<th>TQM critical success factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>Leadership</td>
<td>F4</td>
<td>Process management</td>
</tr>
<tr>
<td>1</td>
<td>Top management commitment and leadership</td>
<td>12</td>
<td>Product and service design</td>
</tr>
<tr>
<td>2</td>
<td>Supervisory leadership</td>
<td>13</td>
<td>Process control</td>
</tr>
<tr>
<td>3</td>
<td>Attention to customer satisfaction</td>
<td>14</td>
<td>Innovation &amp; CI of processes, products and services</td>
</tr>
<tr>
<td>F2</td>
<td>Strategic planning</td>
<td>F5</td>
<td>Human resource management</td>
</tr>
<tr>
<td>4</td>
<td>Quality mission, vision, goals and policy</td>
<td>15</td>
<td>Employee involvement</td>
</tr>
<tr>
<td>5</td>
<td>Strategy development</td>
<td>16</td>
<td>Employee empowerment</td>
</tr>
<tr>
<td>6</td>
<td>Deployment of policy and strategy</td>
<td>17</td>
<td>Employee education and training</td>
</tr>
<tr>
<td>F3</td>
<td>Resource management</td>
<td>F6</td>
<td>Results</td>
</tr>
<tr>
<td>7</td>
<td>Information management utilisation and analysis</td>
<td>18</td>
<td>Employee wellbeing and satisfaction</td>
</tr>
<tr>
<td>8</td>
<td>Material resources management</td>
<td>19</td>
<td>Customer satisfaction results</td>
</tr>
<tr>
<td>9</td>
<td>Technology resources management</td>
<td>20</td>
<td>Human resources satisfaction results</td>
</tr>
<tr>
<td>10</td>
<td>Financial resources management</td>
<td>21</td>
<td>Financial and market results</td>
</tr>
<tr>
<td>11</td>
<td>Supplier partners performance and quality</td>
<td>22</td>
<td>Organisational effectiveness results</td>
</tr>
</tbody>
</table>

Table 6-1 a summary of evaluation criteria, items and sub-items of the model.

It may be noticed from Table 6-1 above that the evaluation criteria, items and sub-items are different from those of the findings of the critical success factors as depicted in Chapter 5 (Table 5-6). This change in elements is clearly explained in the mechanism used for prioritising these criteria, where elements with weights over 0.5 are excluded. However, the sub criteria under these items are correlated with the remaining criteria elements, and moved respectively under the relevant criteria.

Criteria weightings are assigned based to the frequency responses given to these criteria, by the respondents as shown in Table 5-6 detailed earlier in Chapter 5. Criteria weightings are calculated based on the frequency distribution values gained from respondent consensus, and percentages are accordingly distributed. The relevant weightings are as shown on the model framework, Figure 6-4 as noted below.
6.3.1 Framework contents of major criteria and specific sub-criteria

**Criterion 1 – Leadership:** This criterion focuses on the main and vital role of top management in creating the culture, values and overall direction for lasting success. The analysis of the culture and management style has indicated that Libyan managers are still lacking behind this respect. Therefore, the ways in which Libyan leaders develop firm values, they should be personally involved in the management system and motivate the organisation's people.

**Criterion 2 – Strategic Planning:** The systems for ensuring that the needs of stakeholders are incorporated in strategies and those strategies are developed, deployed, and communicated. This criterion focuses on business planning (which incorporates improvement plans), the linkage of planning to strategic direction/intent, the implementation and the measurement of performance to assess progress. With respect to Libyan organisations, as it has been indicated in chapter 5 – analysis of Socio-Economic development that Libyan organisations suffered from the setting of clear visions due to the embargo posed on Libya for over a decade and this in return has handicapped the setting of any strategic planning that incorporate the needs of the stakeholders. Therefore, as sanctions are lifted, and Libya is now opening up for international investors to take part of the national development Libyan leaders should put more emphasis on this criterion.
Investigating the factors affecting the development of NQA

Criterion 3 – Resource management: This criterion examines how the organization manages key resources, such as partnerships, finances, equipment, technology, information, material, and knowledge. Managing resources in efficient and effective ways is another fundamental tenet of modern organizations. In the past, organizations have been more concerned with hard resources in the forms of assets and capital. As knowledge and information are becoming more significant, therefore, Libyan managers ought to strive to invest heavily in this criterion so Libyan organizations can catch up with the leaders and be able to compete in the international arena.

Criterion 4 – Process Management: This criterion examines how processes are managed to support the organization's strategic direction, with a specific focus on prevention (as against correction), as well as continuous improvement. Process management applies to all activities within the organization, in particular those that are critical (key) for success. It is applied as the methods for managing and improving processes, producing products and services, and incorporating customer needs and expectations into processes.

This criterion is found in some sub-criteria such as process control, product and service design and innovation, which can be defined broadly as "an idea, a product or process, system or device that is perceived to be new to an individual, a group of people or firms, an industrial sector or a society as a whole" (Rogers, 1995). This criterion is comprehensively covered by the ISO 9001 Quality Management System. From previous results of this study it was indicated that only 7 Libyan organizations are ISO certified, and therefore, Libyan organizations should invest heavily in ISO implementation as the way forward towards the national embarkation of Business Excellence.

Criterion 5 – Human Resource management (HRM): This criterion examines how people are encouraged, enabled, and involved to contribute to the achievement of the organization's goals, while reaching their full potential. A company must possess good human resource and human resource development programmes. Then, it must have the ability to retain those resources through good compensation and reward systems. Whereby people are managed, competencies developed, people involved and recognized; and seek evidence of a dialogue between people and the organization.
From the Socio-economic factor that was investigated, it was noticed that a brain drain within the Libya qualified and experienced staff is of a high scale. Therefore, for Libyan organisations to retain and encourage national staff, and attract other international expertise ought to employ various programmes to strengthen employee satisfaction. As well as the setting of a national campaign that helps in the awareness of Libyan managers to set in various programmes that assist in satisfying Libyan staff, such as employee suggestion schemes, employee reward programmes, and team-building.

**Criterion 6 – Results:** This criterion examines the outcomes from overall organisational achievements. Total performance includes both financial and non-financial indicators, such as revenue, profit, growth and market share, image, etc. The specific sub-criteria of this criterion are detailed as follows:

**Customer Results:** The measures of customers' perceptions of the organisation and other indicators of firm performance with respect to external customers, including image, loyalty, and the reputation of the firm's products, services, and customer service.

**People Results:** The measures of employees' perceptions of the organisation and other indicators of firm performance with respect to its people, including satisfaction, motivation, recognition, involvement, and achievement.

**Society Results:** The measures of the organization's performance in satisfying the needs and the expectations of society (local, national, or international community), including public disclosure, environmental impact, community involvement, health and safety, and management of such issues.

**Key Performance Results:** The measures of the organization's ability to grow in value and meet the expectations of investors and stakeholders, including financial and non-financial performance indicators related to present and future profitability, cash flow, and investor returns.

6.3.2 Comparing the proposed LQA with the major IQA's

In attempting to understand these observed differences in criteria weightings of the proposed model and the other reputable models (e.g. MBNQA & EQA), a hypothesis have
been put forward. The hypothesis is that the two frameworks may differ from the devised one in their relative emphases on business processes (referred to by the EQA as Enablers) and the outcomes of those processes (Results).

Specifically, the four Results criteria are grouped together as per Figure 6-3. These groups are categorised to Strategic Enablers as they are most closely related to setting the goals and objectives of the firm, and Tactical Enablers as they are concerned with effective execution of strategy via deployment and management of resources to achieve those goals. Two criteria were classified as Strategic Enablers: Leadership, and Policy and Strategy. The three remaining Enablers were classified as Tactical Enablers: People Management, Resources, and Processes. The weightings of these groups of criteria are as summarised in Table 6-2. The weightings of the LQA criteria relative to MBNQA and EQA are in norm of 100%.

<table>
<thead>
<tr>
<th>Criteria Group</th>
<th>Model Weightings</th>
<th>Weightings Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MBNQA</td>
<td>EFQM</td>
</tr>
<tr>
<td>Strategic Enablers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leadership</td>
<td>309</td>
<td>180</td>
</tr>
<tr>
<td>Policy &amp; Strategy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tactical Enablers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>People Management</td>
<td>241</td>
<td>320</td>
</tr>
<tr>
<td>Resources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Results</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer Satisfaction</td>
<td>450</td>
<td>500</td>
</tr>
<tr>
<td>People Satisfaction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impact on Society</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business Results</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 6-2 Comparing the Criteria weightings of the MBNQA, EFQM and the LQA

It may be noticed from Table 6-2 that tactical criteria are dominate in the LQA in comparison to the other two. These differences are quite striking, and while they are at least in part consistent with the hypotheses, some intuitive interpretation is desirable. To this end, some observations regarding the ways in which these results are consistent with differences between Libya and the industrial nation's socioeconomic environments.

Another possible difference between the value-creation dynamics underlying the LQA and the IQA's may be in their implicit definitions of performance and value to be achieved. Such
definitions depend on interpretation and comparison across different organizational and national cultures (see, for example, Dellana, S.A., and Hauser, R.D., (1999)).

Again if we compare the results criteria, an obvious distinction may be witnessed between the two renowned models and the proposed model, specifically with regard to the impact on society which does not exist at all in the LQA. This supports very much the pilot survey findings, which Libyan people are more interested in providing their basic needs rather than worrying about any impact to the society which may impose a threat to the environmental or whatsoever.

6.3.3 Conclusion

It can be concluded that the proposed model is still in its preliminary phases and is found significantly affected by a wide range of underlying causes of uncertainty. It is interesting to find that Customer Focus and Suppliers/Partners management and performances criteria are not standing out clearly in the model but hints of these two criteria are embedded in other criteria (i.e. F3 - Resources and F6 - Results). Desk top and pilot survey results provided significant evidence that underlying causes are due to the fact that Libya has adopted a socialist system for some time, where foreign and local private enterprises were restricted from contributing to the national development. In addition, the UN and USA sanction imposed on Libya which lasted for over a decade has been a major obstacle in Libyan business improvement, which has driven the intention of decision makers and Libyan managers to focus on the basic necessity of the society rather than focusing on Customer/Supplier relations development or impact on society.

Research has indicated that the adoption of best practices is not sufficient to emulate the success of the key players; practices have to be adapted to the environment in which the company is operating (Camp, 1989; Whittle et al., 1992; Young, 1992; Rose, 1984). The four-stage model of Wheelwright and Hayes (1985), depicting the strategic role of manufacturing, provides evidence that manufacturing is subject to an evolutionary cycle. This may suggest that practices may also have to be adapted to the phase of maturity where companies stand. This information is supported by the work of IBM (1994; 1996), and the International Quality Study (1993), which believes that practices go through stages of maturity themselves. The results of the International Quality Study indicated that some
practices are considered as part of a basic infrastructure which must be in place for more sophisticated practices to be fully effective.

6.3.4 Limitations and implications –

Only few Libyan organisations from those participated in this work study had knowledge of TQM, whereas the majority had very minimum TQM awareness.

**Practical implications** – The application of the business model will provide useful knowledge to Libyan organisations on which underlying causes of uncertainty are significantly affecting their performance.

**Originality/value** – A holistic approach such as the business model will give a solid foundation for the Libyan organisations to evaluate their performance. Using the knowledge of significant underlying causes of uncertainty, the Libyan organisations could then prioritise the effort and devise suitable buffering or dampening techniques.

6.3.5 Summary

While the primary objective of this study was the investigation of the factors affecting the development of National Quality Award (NQA) for Libya, the critical factors for the successful implementation of TQM within the Libyan industry were investigated and consequently a conceptual NQA tailor made for Libya was devised.

The CSF’s findings of the study show that there is emphasis on leadership, strategic planning, resource management, human resource management, process management and results. Furthermore, the six criteria proved to be essential not only in this study but also in the award schemes world-wide.

However, the above devised model is based only on the CSF’s within Libya and no hints were made to the attributes of the NQA which are found to affect the development of an NQA for the developing countries. Therefore, it is assumed that the model is still in its primary stages and further improvement, refinement, and validation is required. It is proposed that further investigation, and analysis is needed. Thus, it is planned that the next section be dedicated for this purpose.

195
6.4 Linkage of TQM-CSF with NQA attributes

From chapter 2 sections 2.3.6.3 of this research study, TQM critical success factors (CSF) were clearly defined and classified, where also they were referred to as soft and hard factors. Hence, these ‘soft’ and ‘hard’ quality factors reflect the TQM model proposed. As indicated through the literature that “it is not so explicit distinguishing ‘people’ or ‘soft’ factors from ‘system’ or ‘hard’ factors embodied by the BEMs’ However, this kind of dichotomy may reduce the importance regarding the diversity and multi-dimensional nature of TOM, if the right approach was not taken. Thus, and in relation to the context of this study, these factors will be classified in relation to the three BEM attributes listed in chapter 2, section 2.5, which are found to be essential factors for the development and implementation of BEM in developing countries.

As it has been described in the literature; these attributes evolve in an evolutionary cycle and they develop through phases (from basic to mature) depending on the country/organisation’s experiential development as per Figure 6-5 below.

<table>
<thead>
<tr>
<th>TQM Maturity</th>
<th>Culture</th>
<th>Socio-Economic Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Unaware / Basic Stage</td>
<td>1. Power</td>
<td>1. Marginalized (below 0.20)</td>
</tr>
<tr>
<td>2. Developing Stage</td>
<td>2. Role</td>
<td>2. Dynamic adopters (between 0.20-0.35)</td>
</tr>
<tr>
<td>3. Mature Stage</td>
<td>3. Achievement</td>
<td>3. Potential Leaders (between 0.35-0.49)</td>
</tr>
<tr>
<td>4. Sustaining Stage</td>
<td>4. Support</td>
<td>4. Leaders (above 0.5)</td>
</tr>
</tbody>
</table>

Quality Management in developing countries, Krasachol Ladawan, Guh Eric, (2001)
Diagnosing organisational culture, Harrison R., (1992)
The Technology Achievement Index (TAI), the Human Development, UN, (2001)

Figure 6-5 NQA attributes Experiential level

It is assumed that the more mature these variables get the more likely they are to intersect composing the Venn diagram as shown in Figure 6=6. However, the further they intersect, the more emphasis and comprehensiveness of the model should be. Hence, when these variables overlap they are considered to be in their full maturity phase.
For the purpose of linking these attributes with CSF’s, it has been decided to use the BE criteria found common to the three major BEM (DP, MB and EQA) mentioned earlier in the literature as the main TQM practices/CSF’s of this study, which include:

1. leadership system,
2. impact on society,
3. information and analysis,
4. strategy and policy planning,
5. resources,
6. customer management and satisfaction,
7. people management,
8. process management,
9. performance and management of suppliers/partners, and
10. business results

It was stated earlier that the CSF’s are referred to as soft and hard factors which compose the sets of TQM management practices. The next step is to develop a multidimensional model of TQM by arranging these TQM practices into several subgroups. The building of these subgroups is centred on several theoretical arguments mentioned earlier, although this process is still exploratory in nature. Based on the content analysis of the TQM practices, three subgroups matching the three BEM attributes previously mentioned are identified (e.g. socio-economic development, culture and TQM maturity), which are referred to in this study as X, Y, and Z respectively.
X – Socio-economic construct: comprises impact on society, strategic planning, resources, information and analysis factors, which are classified as hard factors and therefore. From this point of view, all these practices reflect well the beginning (i.e. planning) and ending (i.e. evaluation) phases of strategic management processes, which depend highly on the development of the nation.

Y – Culture construct: comprises leadership and people management practices that mostly relate to human relations aspects in the organisation. This can be seen from the practices incorporated in this construct, such as sharing beliefs and values, providing role models, empowerment, participative management, creating unity between departments, training and development, creating a quality work environment, and communication. These are considered as soft elements of TQM.

Z – TQM maturity construct: on the other hand, comprises customer focus, process management practices, performance and management of suppliers/ partners; and business results, which are also classified under hard factors.

This dichotomy is supported by Wilkinson, (1992) who utilised the British Quality Association (BQA) definitions of TQM which described it from three distinguished perspectives. The first perspective, where TQM is seen focusing on the "soft" qualitative characters, leading to open management styles, delegated responsibility and increased staff autonomy. In the second hard perspective, it emphasises the production aspects such as systematic measurement and control of work, setting standards of performance and using statistical procedures. The third perspective is a mixture of these hard and soft features: key ingredients are "an obsession with quality, the need for scientific approach, and the view that all employees are of the one team".

6.5 NQA process development for the developing nations

In this study the TQM-CSF are referred to as F, and the BEM attributes (socio-economic development, culture, TQM maturity) are referred to as (X, Y, Z) respectively. As it was indicated by (Chuan & Soon, 2000) these attributes are found to affect the development of NQA the most. (Chuan & Soon, 2000) adds that the TQM maturity is very much dependant
upon the economic development of the country. This was very obvious in our empirical findings chapter 5 and as presented in the proposed model Fig. 6.5

![Figure 6-7 Matrix scoring guide (BEM attributes maturity level index)](image)

**Figure 6-7** Matrix scoring guide (BEM attributes maturity level index)

The attributes development may vary from one organisation/country to another (e.g. X could be at level 3, Y at level 1 and Z at level 2). Therefore, the size and shape of the BEM will depend on the experiential maturity of these variables in factor of time as per Figure 6-7 above.

- X = economic development level of the country,
- Y = quality culture advancement level of the country's organisations,
- Z = level of TQM maturity of the country / organisation.

Hence, since these three attributes advance and develop in factor of time and space, consequently, they can be identified as vectors of the NQA as per **Figure 6-8** below.

![Figure 6-8 the three NQA attributes as vectors in space](image)
Investigating the factors affecting the development of NQA

In result a relational matrix was proposed for these vectors as per Figure 6-9 next. The matrix describes the relationship between the CSF and BEM attributes based on their four levels of progress.

<table>
<thead>
<tr>
<th>BEM Attributes</th>
<th>Critical Success factors (CSF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>F(X)</td>
<td>F{x₁, .................. x₄} Economic</td>
</tr>
<tr>
<td>F(Y)</td>
<td>F{y₁, .................. y₄} Culture</td>
</tr>
<tr>
<td>F(Z)</td>
<td>F{z₁, .................. Z₄} TQM Maturity</td>
</tr>
</tbody>
</table>

Figure 6-9 relational Matrixes of CSF & NQA variables

The literature indicated that the assignment of CSF's to an NQA depend on the experiential advancement of the country within the three NQA attributes. Applying the Variation Ratio approach (Weisberg, 1992); If a country's assessment results indicated that the country maturity is below level one (less than 50 %) this means the country is below the average experiential level with respect to the three main NQA attributes (Economic, Culture and TQM Maturity), hence, below the international standard. In this case a basic NQA framework may be considered comprising the main principles of BE/TQM and most essential TQM practices. Otherwise, if the results indicated a level of two above (50 % and more) which means that the country is within international standard, then a more comprehensive NQA framework may be considered.

However, research indicated that the criteria found in the three major IQAs vary from 7 to 10 factors, which represent the TQM-CSF’s relevant to that country/region. The common critical factors found between most IQA's are (Leadership, Resources Management, Policy and Strategy, Human Resource Management, Process Quality, Customer Satisfaction and Results), whereas the generated sub-criteria under each criteria can vary from 3 to 5 sub-criteria.

Since the number of criteria and sub-criteria assigned to an NQA are country specific and would highly depend on the three main attributes that affect the development of an NQA (economic development, culture and TQM maturity level). Therefore, the commonly identified critical factors above mentioned are mapped to the relevant NQA attributes as per chapter 2 above section 2.3.6.3 (Classification of the TQM-CSF).
6.5.1 Development scales

The BEM variables are qualitative variables and it is natural to measure the qualitative variables using qualitative grades, rather than numerical scores. Qualitative evaluation grades are used in this decision matrix framework. The grades are defined in two steps. First, grade scales are established which indicate how many grades are going to be defined in this decision matrix framework. These grades are generated based on literature reviewed in the field of quality management in line with the EFQM (2000) scoring guidelines. Based on the EFQM (2000) guidelines, the scores are grouped into five grades with descriptors for each of these categories, 100 %, 75 %, 50 %, 25 % and 0 %. Therefore, to be consistent with the EFQM model four grades are chosen in this decision matrix framework.

For the economic development, the UN Human Development, (2001) technology achievement index (TAI) is used, which is used more widely to measure the economic competitive growth for a country (see Appendix II), with the four levels termed as:

1. Marginalised (TAI below 0.20)
2. Dynamic adopters (TAI between 0.20-0.35)
3. Potential leaders (TAI between 0.35-0.49)
4. Leaders (TAI above 0.5)

Each grade represents a different progressing level. Therefore, the four development scales can be defined as:

\[ X = \{x_1, x_2, x_3, x_4\} \]

\[ = \{\text{Marginalised; Dynamic adopters; Potential leaders; Leaders}\}; \]

\[ F(X) = \{F(x_1); F(x_2); F(x_3); F(x_4)\} \]

\[ F(x) = \{0.25; 0.5; 0.75; 1\}; \text{where } F(x_i) \text{ represents the level of the factor } X_i. \]

For the culture variable, the Roger Harrison, (1975) Appendix III, is used to define the cultures basic to most organisations as:
Investigating the factors affecting the development of NQA

1. Power
2. Achievement
3. Role
4. Support

Each grade represents a different cultural level. Therefore, the scales can be defined as:

\[ Y = \{y_1 \ y_2 \ y_3 \ y_4\} = \{\text{Power}; \ \text{Achievement}; \ \text{Role}; \ \text{Support}\}; \]

\[ F(Y) = \{F(y_1); F(y_2); F(y_3); F(y_4)\} \]

\[ F(y) = \{0.25; 0.5; 0.75; 1\}; \] where \( F(Y_i) \) represents the level of the factor \( Y_i \).

For the TQM maturity, the criteria for assessment of national development of quality management in developing countries, developed by Krasachol and Guh, (2001) Appendix V is applied, were the five grades are termed as:

1. Unaware stage;
2. Basic Stage;
3. Developing Stage;
4. Mature Stage; and
5. Sustaining Stage;

Each grade represents a different TQM maturity level. Therefore, the development scales can be defined as:

\[ Z = \{z_1 \ z_2 \ z_3 \ z_4\} = \{\text{unaware stage}; \ \text{basic stage}; \ \text{developing stage}; \ \text{mature stage}; \ \text{sustaining stage}\}; \]

The unaware stage will be excluded as it will be assigned to 0 value and there is no sense of including it the model.

\[ F(z) = \{F(z_1); F(z_2); F(z_3); F(z_4)\} \]
F[z] = \{0:25; 0:5; 0:75; 1\}; where F(Zi) represents the level of the factor Zi.

This is in line with the characteristics of the five evaluation grades that are defined in the EFQM (2000) scoring matrix:

- 0 %: no evidence or anecdotal;
- 25 %: some evidence;
- 50 %: evidence;
- 75 %: clear evidence;
- 100 %: comprehensive evidence.

Utilising the above should assist in developing a more robust BE model. The comprehensiveness of the model may be decided based on the country advancement in the three attributes as per above stated. If the country assessment indicated that the country is above 50 % a more comprehensive model should be devised, otherwise, a simpler model may be devised. Nonetheless, literature has stated that a successful TQM model must consist of the main TQM principles that are found to be the most essential (critical) for the success of any TQM initiative. Therefore, the model should consist of all these practices, but be moderate enough to accommodate the country's development. The matrix scoring guide next indicates the three NQA experiential levels within the country.

![Figure 6-10 matrix scoring guide](image-url)
6.6 Fine tuning the proposed NQA model

The process development framework is in its early phases. However, the final goal is to create a well balanced Business Excellence Model that contributes efficiently and effectively to the Excellence journey.

6.6.1 The Process Development Framework application

From the empirical findings in Chapter 5 it was found that Libya is still in its early stages of quality practices development. As per the empirical results Chapter 5 and as it was stipulated on the three BEM attributes development level (the matrix scoring guide) Figure 6-11, it can be seen that Libya stands in the first level on the matrix of every attribute; x (Socio-Economic development) is at level 1 (25 %), y (Level of Quality Culture practices) is at level 1 (25 %) and z (TQM maturity) is at level 1 (25 %).

![Figure 6-11 The matrix scoring guide in the Libyan case](image)

From the above findings it is seen that three attributes are at the same basic experiential level; z (TQM maturity) then x (Socio-Economic), followed by y (Culture), in which they are all advanced by 33 %. Therefore, they should be equally emphasised.

In the case of the proposed conceptual NQA model Figure 6-4 that was developed in section 6.3 above, nothing else should be added, as the three attributes are found to be equally developed at the same level.
6.7 Validation of the proposed mode

In order to validate the proposed excellence model, two generic approaches (quantitative and/or qualitative) may be used. The quantitative approach relies upon the use of questionnaires. Broadly, a written survey, targeting a set of organisations, is used to validate the model. The questionnaire covers principles and practices identified as excellence drivers (or CSF's) that generally correspond to the model criteria. However, since the CSF's have already been identified in Chapter 5.0, in which they were translated into the model variables (indicators), and used in the proposed conceptual model, they need not to be reinvestigated.

However, a qualitative approach is left for further studies. This approach is usually based on the use of a set of forms (one for each of the model criteria or sub-criteria) that have to be fulfilled by assessment teams. In the evaluation process, the main goal is to get a picture of the organisation that identifies its strengths and weaknesses, but also highlights some improvement actions that need to be put into action. In the validation (and subsequently application) of the proposed excellence model, according to this qualitative approach, the following steps, under the supervision of the so-called self-assessment process co-ordinator must be established, as its usually followed: (a) selection and training of self-assessment teams, (b) self-assessment meetings, (c) production of a self-assessment report and an improvement actions plan.

Application to the Libyan organisations should be carried out through an empirical study for qualitatively validating the model. Consequently it should be aimed at getting a better understanding of how Libyan organisations pursue strategic and quality management, knowing which innovation practices and tools are being adopted, using the excellence model.

Figure 6-4 above that was developed for Libya. The resulting model is built around six criteria which are assumed to be related to each other. It intends to be a management and assessment tool, to be used by Libyan organisations in their self-analysis, enabling the identification of strong points and areas for improvement, and providing, at the same time, a source for seeking quality improvement opportunities.
6.7.1 Theoretical validation of the proposed model

This is the final phase for developing the TQM self assessment model, which consist of the utilisation of the results. The six criteria and the 22 sub-criteria are the final results of the proposed NQA for Libya. These criteria and sub-criteria represent those found as the critical elements for the TQM self assessment for Libyan industry. In order to prevent unnecessary mistakes in the construction of a TQM self assessment model based on these elements, a last comparison is made between the criteria and sub-criteria resulting from the current study, and those resulting from an analysis of existing award programmes mentioned in the literature review Chapter 2.

6.7.2 Quality award-based models - a critical examination

The importance of these quality award-based frameworks is evident from indications that an increasing number of organisations from different parts of the world have been adopting them as vehicles for TQM implementation. Their benefits as self-assessment tools, based on a universal and comprehensive set of criteria, have also been highlighted. Above all, they drive continuous improvement, based on a common approach, across the organisation and encourage a holistic view. Nonetheless, quality award models have also important limitations, both as conceptual models and especially as measurement models. Both the MBNQA and the EFQM/BEM implicitly assume that there are causality links between TQM elements and results (Ghobadian & Woo, 1996). Yet, the real impact of changes in the enablers over results is often difficult to establish.

Moreover, quality award-based frameworks were not developed using a scientific approach, based on the identification and validation of CSF's, but rather mainly result from the assembling of ad hoc evidence and successful case stories. They are not based on systematic empirical evidence (Black & Porter, 1996). Additionally, from a measurement point of view, when weights are attached to each criterion, they are arbitrary and do not necessarily reflect the relative importance of each model construct. Therefore, the prioritisation of improvement efforts becomes somehow ambiguous.

Table 2-1 below provides a summary of the main strengths and shortcomings associated with major quality award- based frameworks.
Investigating the factors affecting the development of NQA

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Shortcomings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aims and purposes</td>
<td>* Posterior performance of winning companies does not consistently support the claim that TQM effectively leads to competitive success</td>
</tr>
<tr>
<td>* increase quality awareness</td>
<td>* Criteria emerged from ad hoc empirical evidence and do not necessarily reflect the CSFs</td>
</tr>
<tr>
<td>* encourage self-assessment against well-established criteria</td>
<td>* criteria were not tested for construct validity</td>
</tr>
<tr>
<td>* facilitate benchmarking and organisational learning</td>
<td></td>
</tr>
<tr>
<td>* catalyst for improvement and change</td>
<td></td>
</tr>
<tr>
<td>Conceptual</td>
<td></td>
</tr>
<tr>
<td>* Promote a holistic and process-based view of the organisation</td>
<td>* do not comprise a mathematical formulation and therefore relationships among the criteria cannot be estimated</td>
</tr>
<tr>
<td>* linkage between inputs, processes and outputs</td>
<td>* subjective scoring system</td>
</tr>
<tr>
<td>Measurement</td>
<td></td>
</tr>
<tr>
<td>* Diagrammatic representation</td>
<td>* lack of empirical testing and validation</td>
</tr>
</tbody>
</table>

Table 6-3 Strengths and shortcomings of major NQA-based frameworks

6.7.3 Comparison with the existing award schemes

Table 6-4 next compares the characteristics of the three main NQA’s and the proposed Libyan Quality Award.

<table>
<thead>
<tr>
<th>S/N</th>
<th>Country</th>
<th>NQA</th>
<th>Emphasis of NQA criteria and model</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Japan</td>
<td>DP</td>
<td>The emphasis is on the examination of QC practices on a company-wide basis.</td>
</tr>
<tr>
<td>2</td>
<td>USA</td>
<td>MBNQA</td>
<td>The set of award criteria is results-oriented. It supports a systematic approach to maintaining goal alignment throughout the organisation and a goal-based diagnosis of the organisation. The criteria also emphasise a customer and market focus in all organisational activities and operations.</td>
</tr>
<tr>
<td>3</td>
<td>Western Europe</td>
<td>EFQM</td>
<td>The criteria address more areas than the MBNQA. The major emphases are still on the results achieved by the organisation in the various criteria. In general, the criteria focus more on an organisation’s management of resources, employee work satisfaction, and the impact of an organisation’s operations, products and services on society.</td>
</tr>
<tr>
<td>4</td>
<td>Proposed Libyan Quality Award</td>
<td>LOA</td>
<td>The criteria and their emphases are similar to those of MBNQA, except that there is more weight on the leadership criteria followed by development of strategy, process management and human resource plans. There is also more use of relevant indicators for tracking and improving an organisation’s performance. It is concerned with an organisation’s management of its employees and employee satisfaction compared with all the other NQAs.</td>
</tr>
</tbody>
</table>

Table 6-4 main NQAs characteristics vs. the proposed framework

Together, the criteria of the proposed model constitute a very comprehensive listing of elements, covering (almost) all elements of the existing award programmes. The other
major award programmes seem to be somewhat less comprehensive, with no clear interest in some of the major customer issues: people management, impact on society, supplier and partner relationships, and innovation. However, an exception should be made here for the Baldrige Award, because within this model the element business results has five sub-elements, covering customer satisfaction results, human resource results, financial and market results, supplier and partner results, and company results. Therefore, the Baldrige Award can be regarded as rather comprehensive and very similar to the results of the criteria of the proposed model. Finally, the comparison shows that there are six criteria, which are represented in all awards: human resource management, customer orientation, policy and strategy, leadership, process management and business results. Together, these criteria can be regarded as the stable and consistent elements of all programmes.

### 6.7.4 Comparison of the proposed model with the existing empirical findings

Chapter 2, the literature review, shows the empirical findings of Saraph et al., (1989) and of Black and Porter, (1995). The comparison between the 10 critical factors of Black and Porter, and the clusters of the criteria of the proposed model is much closer than the comparison with the eight factors of Saraph et al. It is, however, remarkable that Black and Porter did not find a factor for process management, and that market orientation is not represented. Only five factors of Saraph et al.'s study relate to the criteria of the proposed model. Moreover, the factors product service design, training and role of the Quality Department are not replicated by Black and Porter or in the criteria of the proposed model. These finding are an indication for the changing conceptual framework for TQM. The study of Saraph et al., was conducted in 1987 and published in 1989. Apparently, 15 years ago the aspects of customer orientation, policy and strategy and people management were supposed to be less important for TQM, whereas topics like training and employee support were supposed to be more important than today.

In summary it has been identified and characterized in this study notable difference between the proposed model and the IQA's. Specifically, it was observed that the model and other IQA's, despite sharing a common goal of identifying and measuring the firm characteristics associated with the process of value creation, propose very different descriptions and weightings of the elements of that process. The model places much more emphasis on tactical issues relating to the diffusion and implementation of strategy and the
monitoring of employee and results, while the Baldrige model emphasizes the development of strategy and the reporting and analysis of business (financial) results. It was discussed that these differences in light of the differing socioeconomic environments of Libya and the industrialized countries.

There is a need for future research in this area to confirm empirically the need for, appropriateness of, and economic consequences of the model differences that is claimed to be driven by socioeconomic differences between western and devolving countries. It must be tested the implication that a Libyan firm will be more successful following the Libyan model than any of the IQA's.

6.8 Conclusion

Many quality award frameworks have been developed, all over the world, and differ to some degree in the way they are presented, and in the specific criteria / quality practices used Puay et al., (1998). However, overall, there is considerable similarity on the general translation of the quality management philosophy into the business model used. With the common direction and an increased consistency of purpose, quality award frameworks can provide organisations with opportunities to build greater unity in pursuit of initiatives that affect improvement.

The model could be used as a profile of the business unit's actual level of quality management practices, through the use of a survey instrument for the three BEM attributes and CSF. This survey instrument can be administered periodically (every year/two years) to monitor the quality-related performance on a continuous basis. Significant differences in performance between years should be addressed. There should also be an improvement trend in the quality management practices relevant to the BEM attributes and criteria over the years.

This procedure may be used for developing a BEM and/or updating an existing model to lead to a more comprehensive quality award model addressing the principle domains of TQM, and eventually would help in improving the competitiveness performance of the developing countries, such as the case of Libya. As it is argued by Dean and Bowen, (1994) with respect to the continuous updates made to the MBNQA, that the conceptual
framework underlying the award addresses the principle domains of TQM; it has been kept and updated to reflect current thinking on TQM and, to an award criteria that is not limited to a single perspective.

The present study also shows how this instrument could be used as a self-assessment tool by quality managers for continuous monitoring of quality-related performance. These measurements can help decision-makers to identify those areas of quality management where improvements should be made. Comparisons between different organisations of divisions could be made to help to prioritise quality management efforts. Firms scoring high on most of the critical factors of quality management under each BEM variable may then consider performing a self-assessment using the proposed National Quality Award or any other quality award criteria.
Chapter 7 CONCLUSIONS AND RECOMMENDATIONS

7.1 Chapter outlines

This chapter provides the summary of the thesis, along with clear limitations of the work, conclusions and directions for future work.

7.2 Research Summary

This chapter presents a summary of the research work and outlines the degree of attainment of reaching the objectives of the research. It identifies the: conclusions of the research, difficulties faced, and presents recommendations for future research work.

The primary objective of the research was to investigate the factors that affect development of an NQA for Libya. This investigation led to the development of a mechanism which can be utilised by Business Excellence custodians (the organisation or body entrusted to promote a NQA for the Libyan Industry) to develop a tailor-made NQA model that fits the Libyan context. The proposed approach should eliminate that major gap (the lack of universal NQA model – one size fits all) found in the IQA’s as identified from the literature.

The researcher was able to accomplish the research objectives by utilising the research methodology indicated in Figure 1-2 Research Methodology, of Chapter 1.

The uniqueness and contribution of this research to the original body of knowledge was based upon the following:

1. A model which is specifically tailor-made for Libya that eliminates the gaps in existing business models through the identification of the factors which are critical to the successful implementation of TQM in the Libyan industry.
2. The ability of the model to be applied in a culture different from the culture where the original concepts of BE models are found. This is achieved by investigating cultural sensitive approaches and recommending solutions for their proper implementation.
3. The cultural dimensions that are included within the model criteria, at the corporate level and most importantly at the national level, as significant determinants that support and drive expected change in an organisation.
4 The ability of the model to be applied in a socio-economic environment different from those ones where the original BE principles are being originated. This is achieved by investigating the Libyan socio-economic environments and devising a model accordingly.

5 The ability of the model to be applied in a quality environment less mature than the original concepts of the model are originated. This is achieved by investigating the TQM maturity level of the Libyan Industry and recommending solutions for the proper implementation.

The research approach adopted for this study started by studying the trends of NQA's and takes the guiding principles embodied within them. The previously developed IQA's indicated that their frameworks are built on time-honoured and tested principles of leadership and management, those known as the Principles of Business Excellence. These Principles, which have evolved over the past 50 years of TQM initiatives implementation, are supported by a body of published research that underpins all similar frameworks throughout the world. They form the basis of a unified theory of management. The Framework is an integrated leadership and management system that describes the essential features, characteristics and approaches of organisational systems that promote sustainable, excellent performance. Application of the principles, through the categories and Items of the framework can guide organisational improvement and success. The frameworks define certain performance categories that are interrelated, and organisations cannot achieve sustained success without sound systems and processes in place for all these categories.

The instrument that was developed in this research project evolved over the three main TQM principles: customer focus, participation and teamwork, and continuous improvement linked to the three main NQA attributes discussed previously in the thesis (socio-economic, culture, and quality maturity). The TQM principles that were investigated in the Libyan context have generated six main performance categories / criteria as per the empirical research findings as depicted in chapter five of this project (leadership, strategic planning, resource management, process management, human resource management and business results). These performance categories proved to be essential not only in the Libyan context but also in the award schemes world-wide. The performance categories are
mapped on the three attributes based on their relevance constituting the required NQA
model. The criteria and the attributes are dichotomised according to their relevance as
"soft" or "hard" criteria and segregated accordingly. In this dichotomy approach, the socio-
economic attribute and the TQM maturity are categorised as hard, whereas, the culture
attribute is classified as soft. Based on these three attributes a matrix (Figure 6-7 Matrix
scoring guide (BEM attributes maturity level index)) relational matrices of CSF & BEM
variables are developed which provides a visual image of what is in place and gives
direction as to what has to be done to develop a broader scope on quality management.
The matrix simulates action instead of only measuring. Some case examples support the
usefulness of the matrix, but more research is needed in this direction.

The matrix can also be used to sense the country's specific advancement level so as to
assist in devising an NQA suitable for the country's unique circumstances. If the country's
advancement level indicates a value of above 50 % in each element of the matrix, then a
more mature and complex model can be targeted, otherwise, the aim should be towards a
more simple model. Based on the level of each element in the matrix, an emphasis to the
lacking element is added resulting a more weightings added to that element's specific
criteria, this should eventually lead to a more balanced NQA model.

The matrix scoring guide (Figure 6-10) provides users with an objective mean of self-
assessment to profile their strengths and weaknesses, and identify improvement
opportunities with respect to the evaluation criteria and BEM attributes.

Based on the empirical findings and the matrix scoring guide an NQA was devised for
Libya. The model consists of the factors found essential for the successful implementation
of TQM in Libya as indicated in Chapter 5 of this project; these factors are represented in
the six main criteria and 22 sub-criteria of the NQA.

The model as presented in this thesis was not intended to describe every single step in the
different improvement process, such as the detailed process of culture change or the steps
to design a performance-based reward system, or the organisation information
management system. The researcher believes that these issues are very much
organisation dependent and cannot be included in a generic model. The main idea was to
come up with a 'road map' to illustrate the sequence of activities needed for achieving
Investigating the factors affecting the development of NQA improvement in business performance through the logical interaction and integration of different improvement approaches. As such, many of the items that could be seen missing from the model are simply details that are embedded within one of the model's criteria or sub-criteria.

Through the different criteria and sub-criteria of the model, the researcher was keen not to suggest 'a one way or one best way' for managing change in the organisation. The model is built to allow the top management to always have the choice to select what is more appropriate for their organisations in terms of their internal needs, as well as their external surrounding environment. Much of the burden lies on the top management of the organisation to realise and implement the model's different criteria. However, most Libyan organisations may need to seek some external assistance on the interpretation to the model approaches, deployment and improvement attainment.

Based on the matrix scoring guide a validation survey with a group of quality scholars and practitioners was conducted, the findings validated the potential applicability of the matrix scoring guide. Despite the fact that the matrix may supplement the development of NQA model, it serves four important purposes.

1. It helps in the development of an NQA model for developing countries that seek to launch a business excellence programme.
2. It is a working tool for guiding the implementation of performance measurement system in organisations.
3. It helps organisations improve their management practices in relation to performance measures, and
4. It facilitates the sharing of information on best practices and benchmarking performance within and among organisations.

It is evident that the authors' approach (i.e. the development and implementation of the frameworks and diagnostic models) overcomes a number of shortcomings experienced with other approaches; it is in this respect that it makes its key contribution: i.e. the educational aspects; for managers, for organisational development, to encourage a culture for learning and continuous improvement; the approach recognises and supports the need for a dynamic and cyclical process to business improvement; it leads to in-house, tailored
strategic measurement systems which provide the much sought after "step-up" to formal self-assessment models.

On the other hand, the linkage of NQA attributes and CSF's along with the matrix scoring guide are still in the very early phases of development and no real empirical research has been conducted. Therefore, it may be feasible and very much advisable to investigate further this process.

At the beginning of this research project in the year 2002, a pilot survey was carried out in Libya, for the purpose of initiating the project. The survey targeted Libyan senior managers and quality practitioners. During the survey some Libyan managers, who were interviewed on the pilot survey, have showed some uncertainties about the Libyan organisations and their future. Most of those managers were sceptical about the capability of the Libyan organisations to comprehend and adopt these modern improvement approaches that the research model suggests. However, in this little time which has elapsed since the start of the project, some improvements have been made on the Libyan organisations were some quality initiatives and quality improvement tools such as (TQM, Six Sigma, ISO 9000, ISO 14000, Health and Safety systems and Lab Accreditation systems - ISO 17025) are being implemented in many Libyan companies. This improvement could be linked to the quality campaign that was initiated by the Libyan Quality Society (LQS) with the joint efforts from the Libyan National Centre for Standardisations and Measurements (LNCSM) and the private quality consultants for the last decade or so. Now it can be seen that several Libyan organisations have achieved real progress in terms of adapting many of the improvement approaches that NQA's currently present.

However, Libyan organisations are at an early stage in the process of considering and possibly adopting a business excellence model. Those companies which decide to proceed with implementation are unlikely to show significantly improved business results for at least three to five years. This means that this would provide an interesting basis for a longitudinal study.
7.3 Contribution to knowledge

The main contribution of this project to knowledge is the development and empirical study of a structured approach for the development of a National Quality Award for Libya. The approach was based on the best practices found in the International Quality Awards and the principles of Business Excellence built on the TQM initiatives since 1980's. Literature review Chapter 2 indicated that most of the renowned IQA's, are built on one vector only (e.g. the TQM elements / critical success factors found to be essential for the successful implementation of TQM in that country and or region). However, this approach has the implications for the selection of some practices which may not be appropriate to the context of most of the organisations in the country/region. Thus, the proposed framework has taken this fact in consideration by adding three more vectors (socio-economic development, culture, and TQM maturity level). These vectors are found to affect the development of an NQA the most specially in the case of the developing countries. This approach can be used to identify practices with the strongest effect, deciding the size and shape of the proposed NQA and adding the appropriate emphasis to the elements found in the first vector (CSF) depending on their implementations development in the country/region under study.

The research study originality and contribution to knowledge may be summarised as follows:

1. Extension of the literature on critical factors of TQM implementation.
2. The pilot study has shed the light on TQM maturity and implementation in the Libyan context.
3. It is intended that the data will be used to develop extensive benchmarks for award custodians in other countries, and that custodians across the world will benefit from the results of this study. It is anticipated, moreover, that the methodology described will be used extensively by custodians in improving their own frameworks and supporting services.
4. Carrying out the first detailed investigation of this type in Libya;
5. A process that can be applied in other developing organisations or countries;
6. Mapping the TQM-CSF's on to the attributes that affect the development of an NQA (Socio-Political and Socio-Economical, Culture, and Quality Maturity);
7. A decision scoring matrix, applying the three NQA attributes for assessing the current position of an organisation/country was devised, to be used for refining the proposed NQA model.

In summary, the proposed model for a National Quality Award is very original and has been developed using a triangulated process based approach, including qualitative and quantitative methods, together with an underpinning from the core and critical literature and through a rigorous analysis of existing national award models and use in other geographical contexts. This logical and systematic process has helped ensure that the likely proposed national award model is based on logic and offers a lot of potential for implementation and further investigation.

7.4 Difficulties and Limitations

The following represent the major difficulties and limitations that faced the researcher during the course of the research:

1. The comprehensive nature of the research entailed the researcher to review a large and diversified number of topics on different approaches and practices applied worldwide. This large extent of literature on all these topics took a considerable amount of time to wrap it up and extract the essentials needed for the project.

2. The lack of the understanding of TQM initiatives, modern improvement approaches and models within the Libyan industry. This in turn had dramatic affect on the surveys and questionnaires carried out in Libya, both in terms of their administrations and the efficiency and accuracy of their results.

3. The deficiencies in the literature of references that are related to national differences that exist between Western countries and Middle Eastern countries especially in the Libyan case, specifically in the field of quality. As well as, the lacking literature with respect to NQA's due to their short history.

4. The short timescale that has elapsed since Libyan organisations embraced on TQM initiatives also makes it difficult to assess, on a long-term basis, the variety of implementation approaches and deployment

5. Shortage of empirical research availability on the subject area.

Investigating the factors affecting the development of NQA

7. Political constraints and continuous administrative changes in the country.
8. Contacting responsible people in order to get primary data was very difficult.
9. The delay in completing the questionnaire was a major problem for this study.
10. Limited use of electronic mail.

7.5 Conclusion

The success and continuity of an organisation depend on its performance. Recent business literature gives prominence to Balanced Scorecards much (BS), Total Quality Management (TQM), National Quality Awards (NQA's), and other similar approaches for assessing enterprise performance. Most of these systems and/or frameworks share the basic understanding that success in today's global marketplace requires measures of the critical aspects of performance. The interest in Business Excellence (BE) has been fuelled with a range of national and regional quality awards (such as, Deming Prize, MBNQA and EQA). These awards are being increasingly used by organisations as part of the business improvement process. As the goal of NQA is to achieve Business Excellence through the implementation of TQM principles, however, the criteria of use and selection of these principles may differ from one country to another, as indicated in the literature review Chapter 2.

The literature review Chapter 2 has indicated that the premise of using one of the existing International Quality Awards (IQA's) such as the Deming Prize of Japan, the Malcolm Baldridge of the USA, and or the European EFQM models for assessing the TQM performance in the emerging countries is found to be too sophisticated for many of these countries in general and for Libya in particular. Many Libyan organisations have either developed some sort of an informal quality system e.g. oil firms, or have been forced to implement a formal quality management system such as ISO 9000 based on the demand of their customers; e.g. the case of General Electronic Company (GEC), and or by government decrees e.g. the inspection companies operating in Libya.

However, existing IQA's do not fit well with the informal way quality initiatives have been developed, or with the three main NQA attributes (e.g. socio-economic, existing culture practices and or the level of quality maturity that Libyan organisations have reached). Although, the importance of a less complex NQA approach is recognised as more
appropriate, it must be sophisticated enough so to meet the desired objectives of a self-assessment framework. A model that is capable of attaining the desired improvement and sustainability is required.

### 7.6 Recommendation for future research

The author has identified some areas that need future research, these areas include:

1. The validation of the decision model found in the linkage of the three BEM attributes (socio-economic, culture, and TQM maturity), and the related decision scoring matrix in different geographical contexts within developing countries for identifying issues and perceptions relating to the efficacy and implementation of the framework.

2. To have a thorough empirical investigation to further validate the classified NQA attributes (socio-economic, culture, and TQM maturity), as well as the CSF's to further validate the model and its effectiveness and efficiency.

3. The actual Implementation of the proposed NQA in a real industrial environment. This implementation should be accompanied by assessing the time and the cost factors needed to put the model in place, and to run it efficiently. This could also involve a benefit-cost analysis for the whole model as well as its individual components.

4. Investigating the model in various sectors of the economy and different sizes of organisations.

5. Finally to validate the model and its contents in the Libyan context and other different geographical contexts, in countries and regions of the developing economies for identifying its reliability and applicability.
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220
Investigating the factors affecting the development of NQA

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<thead>
<tr>
<th>No.</th>
<th>Author(s)</th>
<th>Title and Details</th>
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222
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<table>
<thead>
<tr>
<th>Reference</th>
<th>Author(s)</th>
<th>Title</th>
<th>Publisher</th>
<th>Location</th>
</tr>
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</table>
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242


243


244
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246
Investigating the factors affecting the development of NQA


247
Investigating the factors affecting the development of NQA


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Investigating the factors affecting the development of NQA


Investigating the factors affecting the development of NQA


APPENDICES

Appendix I: The Preliminary Pilot Survey – The BE concepts associated with NQA’s

The focus of these Questionnaires is on the Preliminary Pilot Survey.

1. Do you think developing an NQA for Libya would help in promoting the business excellence culture within Libyan organisation? Yes/No, please explain? .................................................................

2. Is your company using any quality scheme for the moment? Yes/No, if the answer is yes, please state. ..........................................................................................................................................................................

3. Are you aware of any NQA? Yes/No, if the answer is yes, please list them. ..........................................................................................................................................................................

4. Would you think an NQA be useful and relevant to the Libyan industry? Yes/No, please explain? ..........................................................................................................................................................................

5. Would you think having an improvement team within your company be useful? Yes/No, please explain? ..........................................................................................................................................................................

6. Are you willing to be a member of such team? Yes/No

7. How acceptable would be an NQA to your organisation? Very much/Acceptable/Least acceptable/Do not know

8. Would you think an NQA be applicable in your organisation? Very much/Applicable/Least applicable/Do not know

9. What would be the barriers to implementing an NQA within your organisation in particular and within Libya in general?

10. Would organizations in Libya benefit from an NQA? Yes/No, if the answer is yes please state in which way?

11. What do you think the biggest barriers in applying an NQA in Libyan organizations?

12. Do these barriers differ significantly from one organization to another? Please explain

13. Which of the following has most influence on your organisation (Please add any other factor):
   - Managers / internal leaders ( ...... %)
   - Suppliers & partners ( ...... %)
   - People of the organization ( ...... %)
   - Legislations ( ...... %)
   - Customers ( ...... %)
   - Other(s) ....................... ( ...... %)
   - External influencers ( ...... %)

14. From your perspective, which one of the following quality factors be the most important to your organisation?
   - Leadership
   - Information analysis
   - Resources management
   - Policy and strategy
   - Human resource management
   - Process management
   - Customer focus
   - Supplier/Partner management and performance
   - Results
   - Other ............................................................................................................................

15. Would these factors be influential on your decision to use or not to use an NQA within your organisation? Yes/No, please explain?

16. How an NQA Award should be implemented within your company?

17. What is the likelihood of considering the implementation of an NQA by your organisation in the near future, if there was one? (Very likely, More likely, Likely, Less likely, Not, don’t know)

18. Are you and or your company willing to co-operate with any Government-driven approach for promoting and implementing any TQM Initiative? Yes/No.

253
Appendix II: The Technology Achievement Index (TAI)

The focus of these Questionnaires is to investigate the Libyan Economic development.

<table>
<thead>
<tr>
<th>No</th>
<th>Dimension of the TAI</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Technology Creation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Patents granted to residents (per million people) 2002</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Receipts of royalties and licenses fees (US$ per 1000 people) 2002</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Diffusion of Recent Innovation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Internet hosts (per 1000 people) 2002</td>
<td></td>
</tr>
<tr>
<td></td>
<td>High and medium technology exports (as % of total goods export) 2002</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Diffusion of Old Innovation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Telephones (mainline and cellular, per 1000 people) 2002</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electricity consumption (Kilowatt-hours per capita) 2002</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Human Skills</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mean years of schooling (age 15 and above) 2002</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gross tertiary science enrolment ratio (%) 2002</td>
<td></td>
</tr>
</tbody>
</table>

Source: UN development index (2000)

Composition of the Growth Competitiveness Index

The Growth Competitiveness Index is composed of three component indexes: the technology index, the public institutions index, and the macroeconomic environment index. These indexes are calculated on the basis of both "hard data" and "Survey data."

Researchers categorised countries into two groups: the core innovators and the non-core innovators. Core innovators are countries with more than 15 US utility patents registered per million population; non-core innovators are all other countries. For the core innovators, we place extra emphasis on the role of innovation and technology.

The weightings for the core innovators are as follows:
Growth Competitiveness Index for core innovators = 1/2 technology index + 1/4 public institutions index + 1/4 macroeconomic environment index

For the non-core innovators, we calculate the Growth Competitiveness Index values as a simple average of the three component indexes:
Growth Competitiveness Index for non-core innovators = 1/3 technology index + 1/3 public institutions index + 1/3 macroeconomic environment index

Technology Index components
The technology index is calculated for the core and non-core innovators as follows:
Technology index for core innovators = 1/2 innovation sub-index + 1/2 information and communication technology sub-index
Technology index for non-core innovators = 1/8 innovation sub-index + 3/8 technology transfer sub-index + 1/2 information and communication technology sub-index

Innovation sub-index
Innovation sub-index = 1/4 Survey data + 3/4 hard data

Innovation Survey questions
3.01 What is your country's position in technology relative to world leaders?
3.02 Are companies in your country unable/aggressive in absorbing new technology?
3.06 How much do companies in your country spend on R&D relative to other countries?
3.07 What is the extent of business collaboration in R&D with local universities?

Innovation hard data
3.17 US utility patents granted per million populations
3.17 Gross tertiary enrolment

Technology transfer sub-index
Technology transfer sub-index = un-weighted average of two technology transfer Survey questions
3.04 Is foreign direct investment in your country an important source of new technology?
3.03 Is foreign technology licensing in your country a common means of acquiring new technology?

Information and communication technology (ICT) sub-index
Information and communication technology sub-index = 1/3 information and communication technology Survey data + 2/3 information and communication technology hard data

Information and communication technology Survey questions
3.11 How extensive is Internet access in schools?
3.12 Is there sufficient competition among ISPs in your country to ensure high quality, infrequent interruptions and low prices?
3.13 Is ICT an overall priority for the government?
3.14 Are government programs successful in promoting the use of ICT?
3.15 Are laws relating to ICT (electronic commerce, digital signatures, consumer protection) well developed and enforced?
Investigating the factors affecting the development of NQA

Information and communication technology hard data
3.18 Cellular mobile subscribers per 100 inhabitants
3.19 Internet users per 10,000 inhabitants
3.20 Internet hosts per 10,000 inhabitants
5.08 Main telephone lines per 100 inhabitants
3.21 Personal computers per 100 inhabitants

Public Institutions index components
Public Institutions index = 1/2 contracts and law sub-index + 1/2 corruption sub-index

Contracts and law sub-index
6.01 Is the judiciary in your country independent from political influences of members of government, citizens or firms?
6.03 Are financial assets and wealth clearly delineated and well protected by law?
6.07 Is your government neutral among bidders when deciding among public contracts?
6.15 Does organized crime impose significant costs on business?

Corruption sub-index
6.19 How commonly are bribes paid in connection with import and export permits?
6.20 How commonly are bribes paid when getting connected with public utilities?
6.21 How commonly are bribes paid in connection with annual tax payments?

Macroeconomic environment index components
Macroeconomic environment index = 1/2 macroeconomic stability sub-index + 1/4 country credit rating + 1/4 government waste

Macroeconomic stability sub-index
Macroeconomic stability sub-index = 5/7 macroeconomic stability hard data + 2/7 macroeconomic stability Survey data

Macroeconomic stability Survey questions
2.01 Is your country’s economy likely to be in a recession next year?
2.07 Has obtaining credit for your company become easier or more difficult over the past year?

Macroeconomic stability hard data
2.13 Government surplus/deficit
2.14 National savings rate
2.16 Inflation
2.15 Real effective exchange rate
2.17 Lending - borrowing interest rate spread
2.20 Government debt
2.21 Institutional Investor country credit rating
Appendix III: Libyan Organizational Culture Questionnaire

The focus of these Questionnaires is to investigate the Libyan Organizational Culture

No Question | Answers
---|---
1 A good supervisor is: | Strong, decisive, favours good workers. Sticks to company rules. Listens to others. Encourages teamwork.
2 A good worker is: | a Compliant, hard working, and loyal to the interests of his/her superior. b Responsible and reliable, and avoids actions that surprise or embarrass his boss. c Self motivated, open with his ideas and suggestions and accepts ideas of others. d Interested in learning and developing new skills, respects others and
3 A good member of the company gives first priority to the: | a Personal demands of the boss. b Duties responsibilities and requirements of his/her own role. c Requirements of the task for skill, ability, energy, and material resources. d Personal needs of the individuals involved.
4 People who do well in the company are: | a Shrewd and competitive, with a strong drive for power. b Conscientious and responsible, with a strong sense of loyalty to the company. c Technically effective and competent. With a strong commitment to finish the job. d Effective and competent in personal relationships.
5 The company treats the Individuals as: | a Though their time and energy were at the disposal of their bosses. b Part of a two way relationship. c Co-workers who have committed their abilities to the common cause. d Interesting and worthwhile persons in their own rights.
6 People are controlled and Influenced by the: | a Personal exercise of reward and discipline. b Impersonal exercise of reward and discipline to enforce procedures and standards. c Communication and discussion of task requirements and Commitment to task. d Interest and enjoyment found in their activities and concern and care for others.
7 It is right for people to control other’s activities if: | a They have more authority to control and more power in the company. b Their role prescribes that they are responsible for directing others. c They have more knowledge relevant to the task. d The others accept that the first person’s help or instruction can contribute.
8 The basis of task assignment is the: | a Personal needs and judgement of those in authority. b Formal divisions of functions and responsibilities in the system. c Resource and expertise requirements of the job to be done. d Personal wishes and needs for learning and growth of company individuals.
9 Work is performed out of: | a Hope of reward, fear of discipline or loyalty toward a powerful individual. b Respect for contractual obligations and loyalty towards the company. c Satisfaction in excellence of work and achievement and/or task commitment. d Enjoyment of the activity and concern of the other persons involved.
10 People work together when: | a They are required by higher authority/ when they believe they can use each other. b Co-ordination and exchange are specified by the formal system. c Their joint contribution is needed to perform the task. d The collaboration is personally satisfying, stimulating and or challenging.
11 The purpose of competition is to: | a A. Gain personal power and advantage. b B. Gain high-status positions in the formal system. c C. Increase the excellence of the contribution to the task. d D. Draw attention to one's own personal needs.
12 Conflict is: | a Controlled by the intervention of higher management to maintain their authority. b Suppressed by reference to rules, procedures, and definitions of responsibilities. c Resolved through full discussion of the merits of the work issues involved. d Resolved by open and deep discussion of personal needs and values involved.
13 Decisions are made by the: | a Person with the higher power and authority. b Person whose job description carries the responsibility.
Investigating the factors affecting the development of NQA

c Persons with the most knowledge and expertise about the problem. 
d Persons most personally involved and affected by the outcome.

14 Appropriate control and communication structure is characterised by:

a A rigid hierarchy.  
b A hierarchy with some exchange at similar levels.  
c Nature of task requirements dictates how it will be organised, as it shifts with 
d Co-operative approach, tasks are assigned by mutual agreement/consultation.

15 The workplace is viewed as:

a Competitive, everyone is against everyone, exploiting one another.  
b Competition is limited by procedures; there can be negotiation over conflicts.  
c A complex of imperfect forms and systems which are to be reshaped and  
d Improved.  
d A complex of potential threats and support. Member's co-operation is encouraged.

\[
\text{Sum of a's} = \text{Power} \\
\text{Sum of b's} = \text{Role} \\
\text{Sum of c's} = \text{Task} \\
\text{Sum of d's} = \text{Self}
\]

\[
\text{Mean of Sums}
\]

Key: 
- The sum of a, b, c and d=100, due to the rounding up, values are fluctuating by 
- The sums of the replies of every question and the mean, the scoring system is as 
  a - POWER = 100 - 175  
  b - ROLE = 175 - 250  
  c - TASK = 250 - 325  
  d - SELF = 325 - 400 
- The above scoring system is an indication of the actual management style, when w 
  Exist = How company currently perceived 
  Part's = Individual preferred management style

Components of Organizational Culture (Harrison, 1993)

1. **POWER CULTURE:**
   In power cultures resources are unequally distributed, and those in power have more than others. Workplace power includes such factors as money, privileges, job security, working conditions and the ability to control other's access to these. Persons in power have the ability to satisfy or frustrate and control the behaviour of others. Leaders have the ability to administer rewards and privileges, and persons in such organizations are typically motivated by the desire to be associated with a strong leader. Any military or paramilitary organization is likely to contain many power culture features.

2. **ROLE CULTURE:**
   The role orientation substitutes a system of structures and procedures to counter the power of leaders. This type of culture provides protection of subordinates and stabilizes an organization. Roles of each person in the organization are clearly defined, and act as the typical part of a formal or implicit contract between the person and the organization. Workers perform specific duties for which they receive specific rewards. Bureaucracies are the best examples of a role oriented work culture.

3. **TASK/ACHIEVEMENT CULTURE:**
   Achievement culture organizations emphasize the intrinsic nature of work. Individuals believe they are working for something larger than themselves, and typically are rewarded by completing the task. In the achievement culture organization individuals supervise themselves, authority, power, and role are generally unimportant, and the person who does the best job is the one who gets the rewards, which are intrinsic to the task. In this culture the mission is clearly understood by all and serves as the basis for all decisions.

4. **SELF/SUPPORT CULTURE:**
   The organizational of a support culture is based on mutual trust between the individual and the organization. A humanistic value system permeates this type of culture, and employees care for each other. A warm, fuzzy type of climate prevails in this culture, and there is a considerable amount of communication and interpersonal warmth. Support culture work environments are places where employees go out of their way to cooperate and help each other. Cooperation and harmony are emphasized and members of the department experience a strong sense of belonging.
Appendix IV Quality culture and quality management practices

The focus of these Questionnaires is to investigate the Libyan Quality culture and quality management practices

Section One (Company Profile):

- Name: ................................................................. Title: .................................................................
- Company: .............................................................. Size (Number of employees): ........................................
- Is your company ISO 9001 certified? Yes/No
- Approximate number of employees in your Department/under your authority: ............................................................
- Number of years working for this company: ....................... Number of years at current position: ..........................
- Age: ................. Education: .................................................................

Section Two (Quality Culture Questionnaire):

1. Who is accountable for the Quality developments within your organisation?
   - Senior Management Team / Quality Manager / Quality Department / Other ..........................................................

2. What is/are the main driver(s) of quality development within your organisation?
   - Enhance Client/Customer confidence in their Products/Service
   - The need to achieve Competitive Edge/Improve Market Share
   - Other ........................................................................................................................................

3. What constitute high quality within your organisation?
   - Meeting customer demands / Exceed customer demands.

4. Are members of your organisation aware of the latest quality trends? Yes / No

5. Is quality development part of your organisation's development planning process? Yes / No

Section Three (Quality management practices)

1. Does your company have a quality scheme in place? Yes / No, If yes, please state clearly which one?
   ........................................................................................................................................

2. If no, would you be considering having one? Yes / No, If yes, what quality scheme is your company considering?
   ........................................................................................................................................

3. What is the purpose of having one?
   ........................................................................................................................................

4. Please identify the most influential sources of information that your organisation had turned to when considering using one or more of these quality schemes. ........................................................................................................................................

258
**Appendix V: Assessment Criteria of TQM in Developing Nations (Used for Libya)**

The focus of these Questionnaires is to investigate the TQM Maturity Level within Libya.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Unaware stage</th>
<th>Basic Stage</th>
<th>Developing Stage</th>
<th>Mature Stage</th>
<th>Sustaining Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Nation-Wide promotion of quality through education and training</td>
<td>None</td>
<td>Mainly government</td>
<td>Mainly by government but private sector begin to be actively involved</td>
<td>The government still plays an important role by co-operating with private sectors</td>
<td>Mainly by non-profit organisations which are private sectors</td>
</tr>
<tr>
<td>2. Competent consultants</td>
<td>None to very few in number</td>
<td>Very few local competent consultants need import foreign consultants</td>
<td>Start to develop local consultants using fewer foreign consultant</td>
<td>A number of local consultants who are competent start of national professional bodies</td>
<td>A large number of professional consultants Established profession</td>
</tr>
<tr>
<td>3. standardisation and accreditation system</td>
<td>None</td>
<td>Setting up a national standard body to take charge of standardisation and accreditation</td>
<td>The national system more established but still has deficiencies in coverage/scope</td>
<td>Have had a complete standardisation and accreditation system for some times</td>
<td>Certification and accreditation system is robust and mature</td>
</tr>
<tr>
<td>4. ISO 9000</td>
<td>Very few companies</td>
<td>A small number of companies and most of them are exporters</td>
<td>More companies but most of them are big companies</td>
<td>A large number of companies and local companies including SMEs</td>
<td>Almost all(if they want) reaching saturation point</td>
</tr>
<tr>
<td>5. TQM</td>
<td>None</td>
<td>A few companies most of them are joint venture and foreign owned</td>
<td>Spreading to the more advanced local companies</td>
<td>A large number of companies implement TQM</td>
<td>TQM is well known and implemented widely in industry</td>
</tr>
<tr>
<td>6. NQA</td>
<td>None</td>
<td>Setting up a National Quality Award process</td>
<td>Lunching NQA programme limited understanding or take-up in industry</td>
<td>An established NQA for some time, companies using the criteria</td>
<td>NQA is well developed and widely used many applications</td>
</tr>
<tr>
<td>7. perception of quality level in global market</td>
<td>Very poor</td>
<td>Poor but cheap</td>
<td>Medium and cheap</td>
<td>Good and reasonable price</td>
<td>Excellent and good price</td>
</tr>
<tr>
<td>8. R&amp;D</td>
<td>None</td>
<td>A few isolated industry projects</td>
<td>Limited and mainly in government, academic institutes and big companies</td>
<td>Starting to have cooperation between academics and industry practitioners</td>
<td>R&amp;D is common</td>
</tr>
</tbody>
</table>

*Source: Krasachol Ladawan, Guh, Eric, (2001)*
Appendix VI: NQA Questionnaire / TQM Success Factors (Initial)

These Questionnaires represent the initial set designed for investigating the TQM-CSFs within Libya.

Section One:

Dear Sir/Madam

Would you kindly fill out the following information?

- Name: .................................................................. Title: .................................................................................
- Company: ................................................................ Size of company (Number of employees): ................................
- Is your company ISO 9001 certified? (Yes/No), if yes please state when? ..........................................................
- Approximate number of employees in your Department/under your authority: ..................................................
- Age: ......................................... Education: .....................................................................................................

Section Two:

a) Please indicate which statement best reflects your opinion regarding which criteria and sub-criteria should be incorporated into a national self assessment framework for Libyan industry. Please use the following grading system (5: Highly agree, 4: Agree, 3: Neutral, 2: Disagree, 1: Highly disagree).

<table>
<thead>
<tr>
<th>No</th>
<th>Major Criterion/Sub-Criterion</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>Weighting</th>
</tr>
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<tr>
<td>1</td>
<td>Leadership</td>
<td></td>
<td></td>
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<tr>
<td>1.1</td>
<td>Leadership involvement in TQM</td>
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<tr>
<td>1.2</td>
<td>Leadership roles and commitment</td>
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<td>Leadership system</td>
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<td>1.4</td>
<td>Quality culture</td>
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</tr>
<tr>
<td>2</td>
<td>Impact on society</td>
<td></td>
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<tr>
<td>2.1</td>
<td>Contribution to society</td>
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<td>Environmental impact</td>
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<td>3</td>
<td>Resources management</td>
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<tr>
<td>3.1</td>
<td>Information management utilisation and analysis</td>
<td></td>
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<td>3.2</td>
<td>Material resources management</td>
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<tr>
<td>3.3</td>
<td>Technology resources management</td>
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<td>3.4</td>
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<td>Strategy and policy</td>
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<td>4.1</td>
<td>Establishment of policy and strategy</td>
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<td>Communication of policy and strategy</td>
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<td>4.3</td>
<td>Improvement of policy and strategy</td>
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<td>4.4</td>
<td>Deployment of policy and strategy</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Human resource management</td>
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Appendix VII: TQM – Critical Success Factors (Final)

Section One:

Dear Sir/Madam,

Would you kindly provide the following information?

About your Company

Industrial sector:  
- a) Privately owned
- b) Public owned
- c) State owned

Industrial type:  
- a) Manufacturing
- b) Service

Business sector: please tick one from the list below:

- Communications
- Computer equipment or peripherals
- Electronics
- Building material
- Mechanical
- Automotive
- Food
- Gas
- Plastic
- Oil / Petrochemical
- Chemical
- Textiles
- Metal / Iron ore
- Pharmaceutical
- Other: Please specify

Please briefly describe your company’s main products or services: ..............................

Is your company certified to ISO 9001:2000? Yes / No. If no, do you have any plans to become certified? Yes / No.

About yourself

Current position held within your company: ..............................

Number of years in this position: ... Number of years with this company: ...

Age: ... Qualifications (academic/professional): ..............................

Section Two:

Please indicate which statement best reflects your opinion regarding which criteria and sub-criteria should be incorporated into a national self-assessment framework for Libyan industry. Please use the following grading system (5: Highly agree, 4: Agree, 3: Neutral, 2: Disagree, 1: Highly disagree).

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