THE USE OF MANAGEMENT ACCOUNTING PRACTICES IN MALAYSIAN SMES

Submitted by
Kamilah Ahmad

to the
University of Exeter
as a thesis for the degree of

Doctor of Philosophy in Accountancy

May 2012
Declaration

This thesis is available for Library use on the understanding that it is copyright material and that no quotation from the thesis may be published without proper acknowledgement.

I certify that all material in this thesis which is not my own work has been identified and that no material has previously been submitted and approved for the award of a degree by this or any other University.

(signature).............................................................................................................
ABSTRACT

There have been the recent calls for additional research in order to enhance the understanding of the adoption of management accounting practices (MAPs) in small and medium sized enterprises (SMEs). This, allied to an increasing importance of SMEs around the world especially in developing countries, is the motivation for this research. This research explores the uptake of a broad range of MAPs in Malaysian SMEs; identifies the roles of MAPs in the management of SMEs; determines factors that affect the extent of use of MAPs in SMEs and lastly examines the relationship between the use of MAPs and organizational performance of SMEs. A postal questionnaire was conducted to 1,000 Malaysian SMEs in manufacturing sector which elicited 160 useable responses.

The results show that the majority of respondents have used the five management accounting areas identified. Use of the costing system, budgeting system and performance evaluation system are significantly higher than for the decision support system and strategic management accounting, which indicates that the uptake of traditional MAPs is greater than for sophisticated MAPs. The results indicate that medium sized firms make greater use of all MAPs as opposed to small sized enterprises. The most significant differences relate to the use of decision support system and strategic management accounting. The increased uptake of sophisticated MAPs by larger firms is in line with size being a contingent variable explaining the use of such practices.

The results also suggest that MAPs were perceived as playing very important roles in the management of Malaysian SMEs. Performance evaluation and controlling activities were the major roles of MAPs in the management of SMEs. Overall the study suggests that MAPs are perceived by SMEs as relevant and useful in their management processes.
Further, the study found that four out of five contingent factors; size of the firm, intensity of market competition; participation of the owner/manager in the development of MAPs in firm and advanced manufacturing technology have a positive and statistically significant relationship with the use of certain MAPs. The research however found weak support for the positive relationship between the use of MAPs and organizational performance of SMEs.

This study enriches the existing body of knowledge of management accounting by providing information as to the use of MAPs in SMEs in Malaysia. The findings can be specifically informative for policy makers intent on developing management accounting skills among Malaysian SMEs. This research will provide valuable insights into the nature of MAPs in SMEs in a developing country and will promote interest among Malaysian researchers as well as researchers of other countries to make the SME sector a focus of interest in management accounting research.
# LIST OF CONTENTS

- Declaration ................................................. 2
- Abstract ..................................................... 3
- List of Contents ............................................ 5
- List of Tables .............................................. 9
- List of Figures ............................................. 12
- List of Abbreviations ..................................... 13
- Acknowledgment .......................................... 15

## Chapter 1: Introduction

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Introduction</td>
<td>16</td>
</tr>
<tr>
<td>1.2 Background</td>
<td>16</td>
</tr>
<tr>
<td>1.3 Problem statement</td>
<td>18</td>
</tr>
<tr>
<td>1.4 Research objectives</td>
<td>21</td>
</tr>
<tr>
<td>1.5 Research questions</td>
<td>22</td>
</tr>
<tr>
<td>1.6 Hypotheses</td>
<td>22</td>
</tr>
<tr>
<td>1.7 Importance of the study</td>
<td>22</td>
</tr>
<tr>
<td>1.8 Research methodology</td>
<td>23</td>
</tr>
<tr>
<td>1.8.1 Research process</td>
<td>24</td>
</tr>
<tr>
<td>1.9 Organisation of the thesis</td>
<td>25</td>
</tr>
<tr>
<td>1.10 Summary</td>
<td>28</td>
</tr>
</tbody>
</table>

## Chapter 2: Management accounting overview

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 Introduction</td>
<td>29</td>
</tr>
<tr>
<td>2.2 History and development of management accounting</td>
<td>29</td>
</tr>
<tr>
<td>2.2.1 The changing focus and innovation of management accounting</td>
<td>33</td>
</tr>
<tr>
<td>2.2.2 The changing roles of the management accountant</td>
<td>37</td>
</tr>
<tr>
<td>2.2.3 Definition of management accounting</td>
<td>38</td>
</tr>
<tr>
<td>2.2.3.1 Institute of Management Accountant (IMA)</td>
<td>38</td>
</tr>
<tr>
<td>2.2.3.2 Chartered Institute of Management Accounting (CIMA)</td>
<td>39</td>
</tr>
<tr>
<td>2.2.3.3 International Federation of Accountants (IFACs)</td>
<td>40</td>
</tr>
<tr>
<td>2.2.3.4 Summary</td>
<td>41</td>
</tr>
<tr>
<td>2.3 Drivers of change in management accounting</td>
<td>41</td>
</tr>
<tr>
<td>2.4 Summary</td>
<td>43</td>
</tr>
</tbody>
</table>

## Chapter 3: Small and medium-sized enterprises (SMEs) in Malaysia

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 Introduction</td>
<td>44</td>
</tr>
<tr>
<td>3.2 The importance of SMEs</td>
<td>44</td>
</tr>
<tr>
<td>3.2.1 The contribution of Malaysian SMEs</td>
<td>45</td>
</tr>
<tr>
<td>3.3 The development of SMEs</td>
<td>47</td>
</tr>
<tr>
<td>3.3.1 The Malaysian economy</td>
<td>47</td>
</tr>
<tr>
<td>3.3.2 The role of the Malaysian government</td>
<td>49</td>
</tr>
<tr>
<td>3.3.3 Opportunities and challenges for SMEs</td>
<td>51</td>
</tr>
<tr>
<td>3.4 Definition of SMEs</td>
<td>54</td>
</tr>
<tr>
<td>3.5 An overview of SMEs and their key sectors</td>
<td>55</td>
</tr>
</tbody>
</table>
3.5.1 Number of establishments 55
3.5.2 SMEs by sector 56
3.5.3 Size of SMEs 56
3.5.4 Size and sectors of SMEs 57
3.5.5 SMEs activities 58
  3.5.5.1 Activities of the service sector 58
  3.5.5.2 Activities of the agriculture sector 59
  3.5.5.3 Activities of the manufacturing sector 59
3.5.6 Contribution of SMEs to the Malaysian SMEs 60
  3.5.6.1 Performance of the SMEs sector in term of total output, value added and employment 61
3.6 Research relating to Malaysian SMEs 64
3.7 Summary 68

Chapter 4: Literature review, key research areas and development of hypotheses

4.1 Introduction 69
4.2 Research into management accounting practices 70
  4.2.1 Management accounting practices in developed countries 71
    4.2.1.1 European research 71
    4.2.1.2 US research 72
    4.2.1.3 Asia-Pacific research 73
  4.2.2 Management accounting practices in developing countries 75
    4.2.2.1 China 75
    4.2.2.2 Middle East 76
    4.2.2.3 South East Asia 76
    4.2.2.4 Other developing countries 78
  4.2.3 Research into specific area of management accounting practices 78
    4.2.3.1 Costing 79
    4.2.3.2 Budgeting 81
    4.2.3.3 Performance evaluation 84
    4.2.3.4 Decision support system 87
    4.2.3.5 Strategic management accounting 88
  4.2.4 Management accounting in SMEs 90
  4.2.5 Summary 90
4.3 The role of management accounting in the management of an organization 95
  4.3.1 Summary 99
4.4 Management accounting within a contingency framework 100
  4.4.1 Early contingency studies 101
  4.4.2 An organizational framework for contingency-based management control system (MCS) research 104
    4.4.2.1 Evidence from SMEs 111
  4.4.3 An organizational framework for contingency-based management accounting practices (MAPs) research 112
    4.4.3.1 Evidence from SMEs 116
  4.4.4 Summary 117
4.5 Management accounting practices and organizational performance 125
  4.5.1 Positive results 126
  4.5.2 Negative results 131
  4.5.3 Types of performance measures used in the literature 132
  4.5.4 Summary 133
4.6 Overall summary 135
practices and industry type

7.4 Additional analysis: Tests for an association between the selected contingent factors and frequency of use of management accounting techniques

7.4.1 Contingent variables and costing techniques
7.4.2 Contingent variables and budgeting techniques
7.4.3 Contingent variables and performance evaluation techniques
7.4.4 Contingent variables and decision support techniques
7.4.5 Contingent variables and strategic management accounting techniques

7.5 Association analysis of management accounting practices and perceptions of firm performance

7.5.1 Costing system and perceptions of firm performance
7.5.2 Budgeting system and perceptions of firm performance
7.5.3 Performance evaluation system and perceptions of firm performance
7.5.4 Decision support system and perceptions of firm performance
7.5.5 Strategic management accounting and perceptions of firm performance
7.5.6 Association analysis of industry type and perceptions of firm performance

7.6 Additional analysis: Test for an association of the frequency of use of management accounting techniques and perceptions of firm performance

7.6.1 Costing techniques and perceptions of firm performance
7.6.2 Budgeting techniques and perceptions of firm performance
7.6.3 Performance evaluation techniques and perceptions of firm performance
7.6.4 Decision support techniques and perceptions of firm performance
7.6.5 Strategic management accounting techniques and perceptions of firm performance

7.7 Summary

Chapter 8: The multivariate analysis

8.1 Introduction
8.2 Logistic regression analysis
8.2.1 Logit regression: Model and underlying assumption
8.2.2 Multicollinearity between independent variables
8.3 Important statistics in the logit regression analysis
8.4 Binary logistic regression analysis testing for a relationship between the use of management accounting practices and a range of contingent factors which affect the extent of the use of MAPS
8.4.1 Binary logit regression model
8.4.2 Factors that affect the use of a costing system
8.4.3 Factors that affect the use of a budgeting system
8.4.4 Factors that affect the use of a performance evaluation system
8.4.5 Factors that affect the use of a decision support system
8.4.6 Factors that affect the use of strategic management accounting
8.4.7 Additional analysis: Binary logistic regression analysis in factors related to the use of management accounting practices (with level of qualification of accounting staff)

8.5 Ordinal logistic regression analysis testing for a relationship between the use of management accounting practices and perceptions on the level of firm performance.
8.5.1 Background of ordinal logistic regression
8.5.2 The ordinal regression model (Cumulative odds (CO) logit models)

8.6 The ordinal regression between the use of management accounting practices and perception of firm performance.
8.6.1 Management accounting techniques and perceptions of performance in the level of productivity
8.6.2 Management accounting techniques and perceptions of performance in
product quality
8.6.3 Management accounting techniques and perceptions of performance in the number of deliveries on time
8.6.4 Management accounting techniques and perceptions of performance in sales growth rate
8.6.5 Management accounting techniques and perceptions of performance in operating profit growth rate
8.6.6 Management accounting techniques and perceptions of performance in cash flow growth rate

8.7 Summary
8.7.1 Possible relationship between the use of management accounting practices and contingent factors
8.7.2 Comparison of results with previous research.
8.7.3 Possible relationship between perceptions of firm performance and the use of management accounting practices
8.7.4 Comparison of results with previous research.

Chapter 9: Conclusions, limitations and suggestions for further research
9.1 Introduction
9.2 The research problems and conclusions
9.3 Limitations of the study
9.4 Suggestions for future research
9.5 Summary

References
Glossary
Appendices

LIST OF TABLES

Chapter 3:
Table 3.1: Summary of the SME definition
Table 3.2: Number of SME establishments, 2003
Table 3.3: SMEs by sector, 2003
Table 3.4: SMEs by size, 2003
Table 3.5: Proportion of sizes within the sectors of SMEs
Table 3.6: SMEs by service sub-sector, 2003
Table 3.7: SMEs by agriculture sub-sectors, 2003
Table 3.8: Selected manufacturing sub-sectors of SMEs, 2003
Table 3.9: Total output, value added and employment per establishment, 2003
Table 3.10: Total output, value added and employment of SMEs by size, 2003
Table 3.11: Value of assets in the manufacturing sector by size, 2003

Chapter 4:
Table 4.1: List of contingency variables and the types of literature where they have appeared
Table 4.2: Organizational performance indicators used by a study by Jusoh et al. (2008).
Table 5.1: The proportion of establishments in the small and medium category based on number of establishments.
Table 5.2: The proportion of establishments in the small and medium category based on contribution in economic value-added, output and employment and salaries.
Table 5.3: Response rate from selected studies in Malaysian companies
Table 5.4: Sample size for each subgroup and the target number of responses

Chapter 6:
Table 6.1: Summary of survey response
Table 6.2: Analysis of the population and usable responses by number of employees
Table 6.3: Pearson chi-square based on number of employees and manufacturing activities
Table 6.4: Test of representativeness of response rate for small and medium firms (based on number of employees)
Table 6.5: Profile of the responding firms
Table 6.6: The results relating to the use of management accounting practices and the ranking of practices
Table 6.7: Descriptive statistics for the use of costing systems and the ranking of techniques
Table 6.8: Descriptive statistics for the use of budgeting systems and the ranking of techniques
Table 6.9: Pair usage of type of budget and their timing
Table 6.10: Descriptive statistics for the use of performance evaluation systems and the ranking of techniques
Table 6.11: Descriptive statistics for the use of decision support systems and the ranking of techniques
Table 6.12: Descriptive statistics for the use of strategic management accounting and the ranking of techniques
Table 6.13: Assessment of market competition by percentage of respondents
Table 6.14: Accounting staff employment by percentage of respondents
Table 6.15: Qualification of accounting staff by percentage of respondents
Table 6.16: Participation of owner/manager by percentage of respondents
Table 6.17: Use of advanced technology by percentage of respondents
Table 6.18: Performance of the firm: summary statistics shown by percentage of respondents
Table 6.19: Perceptions of the role management accounting by percentage of respondents

Chapter 7:
Table 7.1: A summary of the type of data of independent and dependent variables under the first hypothesis.
Table 7.2: Kendall’s tau correlation coefficient test results for the relationship between annual sales turnover and the use of specific management accounting practices.
Table 7.3: Kendall’s tau correlation coefficient test results for the relationship between intensity of market competition and the use of management accounting practices.
Table 7.4: Kendall’s tau correlation coefficient test results for the relationship between participation of owner/manager and the use of management accounting practices.
Table 7.5: Kendall’s tau correlation coefficient test results for the relationship between reported use of AMT and the use of management accounting practices.
Table 7.6: Kendall’s tau correlation coefficient test results for the relationship between individual AMT measures and the use of management accounting practices.
Table 7.7: Kendall’s tau correlation coefficient test results for the relationship between the level of qualification of accounting staff and the use of management accounting practices.
Table 7.8: Pearson chi-square and Cramer’s V correlation coefficient test results for a relationship between industry type and the use of management accounting practices.
Table 7.9: A summary of the type of data for the new dependent variables under the first
hypothesis.

Table 7.10: Kendall’s tau correlation coefficient test results for a relationship between contingent variables and the frequency of use of costing techniques

Table 7.11: Kendall’s tau correlation coefficient test results for a relationship between contingent variables and the frequency of use of budgeting techniques

Table 7.12: Kendall’s tau correlation coefficient test results for a relationship between contingent variables and the frequency of use of performance evaluation techniques.

Table 7.13: Kendall’s tau correlation coefficient test results for a relationship between contingent variables and the frequency of use of decision support techniques.

Table 7.14: Kendall’s tau correlation coefficient test results for a relationship between contingent variables and the frequency of use of strategic management accounting techniques.

Table 7.15: A summary of the type of data of independent and dependent variables under the second hypothesis

Table 7.16: Kendall’s tau correlation coefficient test results for the relationship between the use of costing system and the perceptions of firm performance.

Table 7.17: Kendall’s tau correlation coefficient test results for the relationship between the use of budgeting system and the perceptions of firm performance.

Table 7.18: Kendall’s tau correlation coefficient test results for the relationship between the use of performance evaluation system and the perceptions of firm performance.

Table 7.19: Kendall’s tau correlation coefficient test results for the relationship between the use of decision support system and the perceptions of firm performance.

Table 7.20: Kendall’s tau correlation coefficient test results for the relationship between the use of strategic management accounting and the perceptions of firm performance.

Table 7.21: Pearson chi-square and Cramer’s V correlation coefficient test results for a relationship between the type of manufacturing activities and the perceptions of firm performance.

Table 7.22: A summary of the type of data for the new independent variables

Table 7.23: Kendall’s tau correlation coefficient test results for a relationship between the frequency of use of costing techniques and the perceptions of firm performance measured in seven ways.

Table 7.24: Kendall’s tau correlation coefficient test results for a relationship between the frequency of use of budgeting techniques and the perceptions of firm performance measured in seven ways.

Table 7.25: Kendall’s tau correlation coefficient test results for a relationship between the frequency of use of performance evaluation techniques and the perceptions of firm performance measured in seven ways.

Table 7.26: Kendall’s tau correlation coefficient test results for a relationship between the frequency of use of decision support techniques and the perceptions of firm performance measured in seven ways.

Table 7.27: Kendall’s tau correlation coefficient test results for a relationship between the frequency of use of strategic management accounting techniques and the perceptions of firm performance measured in seven ways.

Table 7.28: Positive results of a test for a statistically significant relationship between contingent variables and the use of management accounting practices

Table 7.29: Positive results of a test for a statistically significant relationship between the use of management accounting practices and the perceptions of firm performance.

Chapter 8:

Table 8.1: Correlation matrix between five contingent variables.

Table 8.2: Correlation matrix between five main areas of management accounting practices.

Table 8.3 Collinearity statistics

Table 8.4: A summary of the type of data of independent and dependent variables for testing the
first hypothesis
Table 8.5: Logistic regression analysis relating to the factors that affect the use of a costing system
Table 8.6: Logistic regression analysis relating to the factors that affect the use of a budgeting system
Table 8.7: Logistic regression analysis relating to the factors that affect the use of a performance evaluation system
Table 8.8: Logistic regression analysis relating to the factors that affect the use of a decision support system
Table 8.9: Logistic regression analysis relating to the factors that affect the use of strategic management accounting
Table 8.10: Comparisons of models fitting and R squares with and without qualified accounting staff
Table 8.11: Comparisons of significance value of predictors with and without qualified accounting staff
Table 8.12 Results summary of ordinal regression analysis between the use management accounting practices and perceptions of firm performance.
Table 8.13: Details of independent variables developed from specific management accounting techniques.
Table 8.14 Ordinal logistic regression analysis relating to the level of use of management accounting techniques within nine categories and perceptions of performance measured by the level of productivity
Table 8.15: Ordinal logistic regression analysis relating to the level of use of management accounting techniques and the perceptions of performance measured by product quality
Table 8.16: Ordinal logistic regression analysis relating to the level of use of management accounting techniques and the perceptions of performance measured by the number of deliveries on time
Table 8.17: Ordinal logistic regression analysis relating to the level of use of management accounting techniques and the perceptions of performance measured by sales growth rate
Table 8.18: Ordinal logistic regression analysis relating to the level of use of management accounting techniques and the perceptions of performance measured by operating profit growth rate
Table 8.19: Ordinal logistic regression analysis relating to the level of use of management accounting techniques and the perceptions of performance measured by cash flow growth rate
Table: 8.20: Summary of statistically significant results from binary logistic regression tests
Table: 8.21: Summary of statistically significant results from ordinal regression tests for an association between nine accounting techniques and perceptions of firm performance

Chapter 9:
Table 9.1: Summary of the results of bivariate and multivariate analyses regarding factors affecting the use of MAPs

LIST OF FIGURES

Chapter 1:
Figure 1.1 Overview of research process

Chapter 2:
Figure 2.1: Evolution of Management Accounting.

Chapter 3:
Figure: 3.1: SME contribution to GDP in selected countries (% share)

LIST OF APPENDICES

Appendix 1: List of literature in management accounting
• Table A1: Major studies in management accounting practices
• Table A2: Costing
• Table A3: Budgeting
• Table A4: Performance evaluation system
• Table A5: Decision support system
• Table A6: Strategic management accounting

Appendix 2: List of performance measures in management accounting
• Table A7: Performance measures used by previous research

Appendix 3: Non-response bias test
• Table A8: Pearson chi-square result of early and late responses test
• Table A9: Mann-Whitney U test result of early and late responses test

Appendix 4: Ordinal regression analysis
• Table A10: Results summary of ordinal regression analysis between the use of management accounting practices and perceptions of firm performance using complementary log-log link

Appendix 5: Questionnaire

Appendix 6: Covering letter to target respondent

Appendix 7: Covering letter: 1st Follow-up

Appendix 8: Covering letter: 2nd Follow-up

ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABC</td>
<td>Activity-based Costing</td>
</tr>
<tr>
<td>ABCMA</td>
<td>Activity-based Costing and Management</td>
</tr>
<tr>
<td>ABMA</td>
<td>Activity-based Management Accounting</td>
</tr>
<tr>
<td>AIS</td>
<td>Accounting Information System</td>
</tr>
<tr>
<td>AMT</td>
<td>Advanced Manufacturing Technology</td>
</tr>
<tr>
<td>ARR</td>
<td>Accounting Rate of Return</td>
</tr>
<tr>
<td>BBRT</td>
<td>Beyond Budgeting Round Table</td>
</tr>
<tr>
<td>BSC</td>
<td>Balanced Scorecard</td>
</tr>
<tr>
<td>CAM-I</td>
<td>Consortium for Advanced Manufacturing Interna-</td>
</tr>
<tr>
<td>CBM</td>
<td>Central Bank of Malaysia</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
</tr>
<tr>
<td>CIMA</td>
<td>The Chartered Institute of Management Accountants</td>
</tr>
<tr>
<td>CSFs</td>
<td>Critical Success Factors</td>
</tr>
<tr>
<td>CVP</td>
<td>Cost-Volume-Profit</td>
</tr>
<tr>
<td>DOS</td>
<td>The Department of Statistics</td>
</tr>
<tr>
<td>DSS</td>
<td>Decision Support System</td>
</tr>
<tr>
<td>FDI</td>
<td>Foreign Direct Investment</td>
</tr>
<tr>
<td>FMAC</td>
<td>Financial Management and Management Accounting Committee</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>IRR</td>
<td>Internal Rate of Return</td>
</tr>
<tr>
<td>IFAC</td>
<td>International Federation of Accountants</td>
</tr>
<tr>
<td>IMA</td>
<td>Institute of Management Accountants</td>
</tr>
<tr>
<td>IMP</td>
<td>Industrial Master Plan</td>
</tr>
<tr>
<td>IT</td>
<td>Information Technology</td>
</tr>
<tr>
<td>JIT</td>
<td>Just-In-Time</td>
</tr>
<tr>
<td>KM</td>
<td>Knowledge Management</td>
</tr>
<tr>
<td>KPIs</td>
<td>Key Performance Indicators</td>
</tr>
<tr>
<td>MA</td>
<td>Management Accounting</td>
</tr>
<tr>
<td>MAP</td>
<td>Management Accounting Practice</td>
</tr>
<tr>
<td>MAS</td>
<td>Management Accounting Systems</td>
</tr>
<tr>
<td>MAT</td>
<td>Management Accounting Technique</td>
</tr>
<tr>
<td>MCS</td>
<td>Management Control System</td>
</tr>
<tr>
<td>MOA</td>
<td>Ministry of Agriculture and Agro-based Industries</td>
</tr>
<tr>
<td>MP</td>
<td>Malaysia Plan</td>
</tr>
<tr>
<td>NPC</td>
<td>National Productivity Corporation (Malaysia)</td>
</tr>
<tr>
<td>NPV</td>
<td>Net Present Value</td>
</tr>
<tr>
<td>NSDC</td>
<td>Malaysian National SMEs Development Council</td>
</tr>
<tr>
<td>NZ</td>
<td>New Zealand</td>
</tr>
<tr>
<td>OC</td>
<td>Organizational Controls</td>
</tr>
<tr>
<td>PMS</td>
<td>Performance Measurement System</td>
</tr>
<tr>
<td>ROI</td>
<td>Return on Investment</td>
</tr>
<tr>
<td>ROE</td>
<td>Return on Equity</td>
</tr>
<tr>
<td>ROA</td>
<td>Return on Asset</td>
</tr>
<tr>
<td>ROS</td>
<td>Return on Sales</td>
</tr>
<tr>
<td>SMEs</td>
<td>Small and Medium sized Enterprises</td>
</tr>
<tr>
<td>SMIDEC</td>
<td>Small and Medium Industries Development Corporation</td>
</tr>
<tr>
<td>SMA</td>
<td>Strategic Management Accounting</td>
</tr>
<tr>
<td>TQC</td>
<td>Total Quality Control</td>
</tr>
<tr>
<td>TPM</td>
<td>Total Productive Maintenance</td>
</tr>
<tr>
<td>TQM</td>
<td>Total Quality Management</td>
</tr>
<tr>
<td>UNDP</td>
<td>The United Nations Development Program</td>
</tr>
<tr>
<td>UK</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>US</td>
<td>United States</td>
</tr>
<tr>
<td>VBM</td>
<td>Value-based Management</td>
</tr>
<tr>
<td>VE</td>
<td>Value Engineering</td>
</tr>
<tr>
<td>ZBB</td>
<td>Zero-Based Budgeting</td>
</tr>
</tbody>
</table>