

BIBLIOGRAPHY

Books:

- ANDERSON, L.G. 1986. *The economics of fisheries management*. London: the John Hopkins University Press.
- BARRY, T. J. 1991. *Management excellence through quality*. Wisconsin: ASQC Quality Press.
- BRINKERHOFF, R. O. & DRESSLER, D. E. 1990. *Productivity management: a guide for managers and evaluators*, New bury Park: Sage Publications.
- CAMP, R. C. 1993. Benchmarking: The search for industry best practices that lead to superior performance. *In Handbook for productivity measurement and improvement*, edited by W. Christopher and C. G. Thro. Portland, Productivity Press, p.1-9.1 – 1-9.12.
- CHEN GORDON, K.C. & McGARRAH, R. E. 1982. *Productivity Management: text and cases*. Chicago: CBS College Publishing.
- COHEN, L. & HOLLIDAY, M. 1996. *Practical statistics for students*. London: Paul Chapman Publishing company.
- COOPER, D. R. & SCHINDLER, P. S. 1998. *Business research methods, 6th edition*. Toronto: Irwin McGraw-Hill, Inc.
- COTTON, J. L. 1993. *Employee Involvement: methods for improving performance and work Attitudes*. California: Sage Publications, Inc.
- DAFT, R. L. 1997. *Management, 4th edition*. Fort Worth, Texas: Dryden Press.

- DESSLER, G. 1985. *Management fundamentals, 4th edition*. Virginia: Reston Publishing company, Inc.
- DRUCKER, P. F. 1974. *Management: Tasks, Responsibilities and practices*. London: Heinemann Publishing Inc.
- EDOSOMWAN, J. A. 1995. *Integrating Productivity and Quality Management, 2nd edition*. New York: Marcel Dekker.
- EVANS, J. R. & LINDSAY, W. M. 1999. *The Management and Control of Quality, 4th edition*. Cincinnati, Ohio: South-western College Publishing.
- GROSSMAN, E.S. 1993. Hospital Productivity measurement. In *Handbook for productivity measurement and improvement*. Edited by Christopher, W. F. and Thor, C. G. Portland, Productivity press. p.7-13.1 – 7-13.20.
- GROSSMAN, E.S. 1993. How to measure company productivity. In *Handbook for productivity measurement and improvement*. Edited by Christopher, W. F. and Thor, C. G. Portland, Productivity press, p.6-1.3 – 6-2.21.
- GRAY, E.R. & SMELTZER, L. R. 1989. *Management: the competitive edge*. New York: Macmillan Publishing Company.
- GREGERMAN, I. B. 1984. *Productivity Improvement: A Guide for Small Business*. New York: Van Nostrand Reinhold Publication.
- HUSSEY, J. & HUSSEY, R., 1997. *Business Research: A practical guide for undergraduate and postgraduate students*. London: Macmillan Press ltd.

- JURISON, J. & GRAY, P. 1995. Defining and measuring productivity. In *Productivity in the Office and the Factory*. Edited by Jurison, J. and Gray, P. Danvers: boyd and fraser publishing company. p.11-21.
- KENDRICK, J. W. 1984. *Improving Company Productivity: Handbook with case studies*. Baltimore: The John Hopkins University Press.
- HEAP, J. 1992. *Productivity management: a fresh approach*. New York: Cassell Education Limited.
- LEVIN, R. I. & RUBIN, D.S. 1983. *A short course in Business Statistics, 2nd edition*. New Jersey: Englewood Cliffs, Prentice-Hall, Inc.
- MUKHERJEE, S. K. & SINGH, D. 1975. *Towards high productivity: report of a seminar on higher productivity in public sector production enterprises*. New Delhi: Bureau of Public Enterprises.
- NUNNALLY, J. C. & BERNSTEIN, I. H. 1994. *Psychometric Theory, 3rd edition*. New York: McGraw-Hill Publishing, Inc.
- PROKOPENKO, J. 1987. *Productivity management: a practical handbook*. Geneva: International Labour Office.
- RILEY, M., WOOD, R. C., CLARK, M.A., WILKIE, E. & SZIVAS, E. 2000. *Researching and writing dissertations in business and management*. London: Thomas Learning Publishing.
- ROSS, J. E. 1977. *Managing productivity*. Virginia: Reston Publishing Company, Inc.

- SABO, R.S. 1993. Managing according to the golden rule: Lincoln Electric. In *Handbook for productivity measurement*, edited by W. Christopher and C. G. Thro. Portland, Productivity Press. P.2-10.1 – 2-10.15.
- SADLER, G. 1993. Plant productivity measures. In *Handbook for productivity measurement and improvement*. Edited by Christopher, W. F. and Thor. C. G. Portland, Productivity press, p. 3-3.1 – 3.20.
- SCHERMERHORN, J. R. 1993. *Management for productivity, 4th edition*. Canada: John Wiley & Sons, Inc.
- SCHERMERHORN, J. R., HUNT, J. G., & OSBORN, R. N. 2000. *Organisational behaviour, 7th edition*. Toronto: John Wiley and Sons Inc.
- SCHERMERHORN, J. R. 1989. *Management for Productivity, 3rd edition*. New York: John Wiley and Sons Inc.
- SONIAT, E.J. & RAAUM, R.B. 1993. Government productivity measurement as an Analytical tool. In *Handbook for productivity measurement and improvement*. Edited by Christopher, W. F. and Thor, C. G. Portland, Productivity press, p.7-4.1 – 7-4.15.
- THOR, C. G. 1993. The family of measures method: Application in staff departments. In *Handbook for productivity measurement and improvement*. Edited by Christopher, W.F. and Thor. C. G. Portland, Productivity press, P. 5-3.1 – 5-4.5.
- THOR, C. G. 1994. *Measures of success: Creating a High Performing Organisation*, Oliver Wight Publications, Essex Junction.

THUROW, L. C. 1993. Productivity. *In Handbook for productivity measurement and improvement*. Edited by Christopher, W. F. and Thor, C. G. Portland, Productivity press. p.1-2.11

VAN LOGGERENBERG, B. J.1990. *Productivity decoding of financial Signals: a primer for novices on deterministic productivity accounting*. South Africa: Wits Productivity Measurement associates.

Articles:

ABOGANDA, W. M. 1994. Productivity measurement methodology. *Industrial Engineering*, vol. 26, no. 11, p.46-49.

ANDERSON, J.C., DOOLEY, K. J. & MISTEREK, D. A. 1992. Productivity as a performance measure. *International Journal of Operations and Production Management*, vol. 12, no. 1, p. 29-45.

ANONYMOUS, 1997. Collapsing Fisheries. December 1997, vol. 25, no. 4.
http://www.jhuccp.org/pr/m13chap3_6.shtml (6 June 2003).

ANONYMOUS, 1998. Fishery degradation overview.
<http://home.alltel.net./bsundquist1/fi1.htm> (6 April 2004).

ANONYMOUS, 2003. Global Fisheries.
<http://ged.econ.queensu.ca/pub/faculty/garvie/econ290/website/lecture%20materials/fisheries.pdf> (6 June 2003).

AUSTRALIAN BUREAU OF STATISTICS. 2000. Australian National Accounts: Concepts, Sources and Methods. *Statistical concepts library*. November 2000.
<http://www.abs.gov.au/Ausstats/.../65a7a1b617fd3461ca2569a70003feef>(21 Jul 2003)

- AVLONITIS, G. J. & GOUNARIS, S. P. 1997. Marketing Orientation and company performance: industrial vs. Consumer goods companies. *Industrial Marketing Management*, vol. 26, no. 5, p.385 – 402.
- BAINES, A. 1997. Productivity improvement. *Work Study*, vol. 46, no. 2, p. 49 – 51.
- BEACH, A. J. 1996. Empowerment to the people: creating an atmosphere for growth. *Empowerment in Organisations*, vol. 4, no. 1, p.29 –33.
- BLASI, J., CONTE, M. & KRUSE, D. 1996. Employee stock ownership and corporate performance among public companies. *Industrial and Labour Relations Review*, October 1996, vol. 50. no.1, p. 60-79.
- BOLTON, M.F. & HEAP, J.P. 2002. The myth of continuous improvement. *Work study*, vol. 51, no. 6, p.309-313.
- BOOTH, A.J. & HECHT, T. 2000. Utilisation of South Africa’s living marine resources. March 2000.
- BRIDGES, B. M. 1992. To measure or not to measure, that is the question. Productivity and quality improvement in government, edited by John S., W. Fargher. *Institute of Industrial Engineering*, January 1992, p. 412 – 419.
- BROWN, S., FAKHFAKH, F. & SESSIONS, J.G. 1999. Absenteeism and employee sharing: An empirical analysis based on French panel data, 1981-1991. *Industrial and Labour Relations Review*, January 1999, vol. 52, no. 2, p. 234-251.
- COOPER, C. 1999. The ABC of productivity measurement. *Productivity South Africa*, Sept/ Oct 1999, p.4-6.

- COSH, A. DUNCAN, J. & HUGHES, A. 1998. *Investing in training and small firm growth and survival: an empirical analysis for the UK 1987 – 97*, research report, London.
- COTTON, J. L., VOLLARTH, D. A., FROGGATT, K. L., LENGNICK-HALL, M. L., & JENNINGS, K. R. 1988. Employee participation: Diverse forms and different outcomes. *Academy of Management Review*, vol. 13, no. 1, p.8 – 22.
- CRAIG, C. E. & HARRIS, R. C. 1973. Total productivity measurement at the firm level. *Sloan Management Review*, Spring 1973, p.13-29.
- DANFORTH, D. D. 1984. Quality means doing the job right the first time. *The Wall Street Journal*, 21 March 1984, p.33.
- DELGADO, C. L., WADA, N., ROSEGRANT, M. W., MEIJER, S. & AHMED, M. 2003. The future of fish: issues and trends to 2020. *International Food Policy Research Institute and World Fish Centre*. <http://www.ifpri.org/pubs/ib/ib15.pdf> (30 March 2004).
- DOULMAN, D. J. 2003. A global challenge: a look at recent global data on the state of fish stocks. Economic perspectives. January 2003. <http://usinfo.state.gov/journals/ites/0103/ijee/trends.htm>. (3 July 2003)
- DRUCKER, P. F. 1991. The new productivity challenge. *Harvard business Review*, November – December 1991, p.69-79.
- Du PLOOY, E. & JACKSON, D. 1995. Productivity Measurement. *Productivity South Africa*, March/April 1995, p.14-17.

- ENVIRONMENTAL NEWS SERVICE. 2001. Better Fisheries management could Prevent overexploitation. *Ichthyology*. October 19,2001. Press release <http://www.refisheries2001.org/> (25 April 2004)
- FAO Fisheries Department, 2002. The State of World Fisheries and Aquaculture 2002. <http://www.fao.org/docrep/005/v7300e/v7300e4.htm#P00>. (1 April 2004).
- FAO, 1992. National fisheries of Eritrea: Part I Sector review and Part II national fisheries strategy and development programme. <http://www.fao.org/docrep/field/003/AB902E/AB902E02.htm> (11 April 2003)
- FEDERAL RESERVE BANK OF DALLAS. 2003. Deflating nominal values to real values. DataBasics - *FRB Dallas*. <http://www.dallasfed.org/data/basics/nominal.html> (12 Nov. 2003).
- FRIEDEL, C. 2000. Post-apartheid fisheries management in South Africa: a local and global perspective. A discussion document, August 2000 prepared with the Southern Africa Environment Project (SAEP). www.saep.org/Interns/Intpro00/Friedel2000 (13 Apr. 2004)
- GHEBREMICHAEL, A. 2000. Annual statistical report for Eritrean fisheries: 2000 Ministry of fisheries, Massawa, Eritrea.
- HAROLD, E. D. 1985. Productivity: problems, paradigms and progress. *SAM Advanced Management Journal* (New York, Society for the advancement of Management), Autumn 1985, p.39-45.
- HAUNG, T.C. 2001, The relation of training practices and organisational performance in small and medium size enterprises. *Emerald*, September 2001, vol. 43, no. 8/9, p. 437-444.

- HAYES, R. H. & CLARK, K. B. 1986. Why some factories are more productive than others. *Harvard business Review*, September- December 1983, vol. 64, p. 66- 73.
- HELMS, M. M.1996. Perspectives on quality and productivity for competitive advantage. *The TQM Magazine*, vol. 8, no. 3, p. 5 – 10.
- HERTZ, P., FELDMAN, J. & RICHARDSON, K. 1997.
at:<http://www.gco.org/hertz.html> (12 September 2003)
- HOWARD, R. 1994. Quality's link to Productivity. *Nation's Business*, April 1994, vol. 82, no. 2, p. 33- 35
- ICHINOWSKI, C., KOCHAN, T. A., LEVINE, D., OLSON, C. & STRAUSS, G. 1996. What Works at Work: Overview and Assessment. *Industrial Relations*, July 1996, vol. 35, no. 3, p. 299-333.
- JAIN, P. 1999. On -the - Job training a key to human resource development. *Library Management*, vol. 20, no. 5, p. 283 – 294.
- KELLY, D. 2000. Using vision to improve organisational communication. *Leadership & Organisational Development Journal*, January 2000, vol. 21, no. 2, p. 92 – 101.
- KHAN, J. H. 2003. Impact of total quality management on productivity. *The TQM Magazine*, vol. 15, no. 6, p. 374 - 380.
- LIFE SCIENCES. 2003. Sustaining South Africa's Fisheries. www.spss.com/success (15 March 2004).
- LIMEHOUSE, D. 1999. Know your customer. *Work Study*, vol. 48, no. 3, p. 100 – 102.

- MADY, M. T. 1992. Measuring productivity in real terms: a suggested unified accounting system – based model for Egyptian industry. *International Journal of Operations and Production Management*, vol. 12, no. 9, p. 49-58.
- MAYNARD, J.P. & GALARNEAU, D. 1995. Measuring productivity. *Perspectives*, Spring 1995, p.26-32.
- McKee, D. 2003. Productivity tools: horses for courses. *Work Study*, vol. 52, no. 3, p.136-140.
- MICHAEL, H.Z & SCRIMGEOUR, F. 2003. An economic analysis artisanal fisheries in Eritrea: identifying the constraints. New Zealand.
<http://www.nzae.org.nz/conferences/2003/34-scrimgeour-report.doc> (15 Apr. 2004)
- MILLER, D. M. 1984. Profitability = productivity + price recovery. *Harvard Business Review*. May –June 1984, p. 145 – 153.
- MINISTRY OF FISHERIES OF ERITREA (MoF). 2001. Mission of the ministry.
<http://www.ledafish.com/index1.htm> (25 April 2004)
- MINISTRY OF FISHERIES OF ERITREA (MoF). 2000. Executive summary of the ministry of fisheries report, Massawa, Eritrea.
- MOHANTY, R. P. & YADAV, O. P. 1994. Linking the quality and productivity movements. *Work Study*, vol. 43, no. 8, p. 21 – 23.
- MORGAN, R. E. 1999. Environmental determinants of export decision-making. *European Business Review*, vol. 99, no. 5, p. 323 – 331.

- NIXON, A. 1997. World Fisheries: The current crisis. *Library of Parliament, Parliamentary Research Branch, Science and Technology Division*. January 1997. <http://www.parl.gc.ca/information/library/PRBpubs/bp434-e.htm>. (29 March 2004)
- OCEAN UPDATE. 1998. Report calls for 50% reduction in global fishing. June 1998. <http://www.seaweb.org/resources/18update/global.html>. (3 July 2003).
- OECD Productivity manual. 2001. A guide to the measurement of industry level and aggregate productivity growth. March 2001. Statistics directorate directorate for science, technology & industry
- OWUSU, Y. A. 1999. Importance of employee involvement in world-class agile management systems. *International Journal of Agile Management systems*, vol. 1, no. 2, p. 107 – 115.
- PARSONS, J. 2000. Current approaches to measurement within the service sector & service sector /white collar institutions. A report presented on the APO symposium on productivity measurement in the service sector, Kuala Lumpur, Malaysia, 1 – 4 August 2000.
- PAULY, D. & ZELLER, D. 2003. Fisheries trends: the global fisheries crisis as a rationale for improving the FAO's database of fisheries statistics. *Fisheries centre research reports*, vol. 11, no. 6, p. 1-9.
- PAUL, K. 2000. Transformation of the fishing industry in the new South Africa: Sustainable management of marine living resources and redistribution of access to them since 1994. 6 Jun. 2000. <http://www.saep.org/Interns/intPro/intpro00/Kavita2000.htm> (3 Apr. 2004)

- PIERCY, N. F. 1995. What do you do to get customers focus in an organisation?
Marketing Intelligence & Planning, vol. 13, no. 6, p. 4 – 11.
- PRODUCTIVITY PRIMER. 2003. Productivity. *Productivity commission of Australia*.
(7Apr 2003) <http://www.pc.gov.au/work/productivity/primer.html> (29 May 2003).
- PUGH, S.1984. Management training versus training in library management. *Information and Library Manager*, vol. 3, no. 2, p. 35 – 37.(abstract).
- RAIBORN, C. & PAYNE, D. 1996. TQM: Just what the ethicist ordered. *Journal of Business Ethics*, vol. 15, no. 9, p. 963 – 72.
- REYNALDO, J. & SANTOS, A. 1999. Cronbach’s Alpha: a tool for assessing the reliability of scales. *Journal of extension*, April 1999, vol. 37, no. 2.
<http://www.joe.org/joe/1999april/tt3.html> (08 Dec 2003).
- RIGGS, J. L. & Felix, G.H. 1983. Productivity Measurement by Objectives. *National Productivity Review*, Autumn 1983, p. 386 – 393.
- ROGERS, M. 1998. The definition and measurement of productivity. *Melbourne Institute working paper*, no.9/98, May 1998.
- ROWLEY, J. 1995. Management development: new agenda for information professionals. *Library Management*, vol.16, no.1, p. 5 - 10
- SARAPH, J. V., BENSON, P. G. & SCHROEDER, R. G. 1989. An instrument for measuring the critical factors of quality management. *Decision Science*, Fall 1989, vol. 20, no. 4. p. 810 - 824
- SAUIAN, M.S. 2002. Labour productivity: an important business strategy in manufacturing. *Integrated Manufacturing Systems*, vol. 13, no. 6, p. 435 – 438.

- SIEGEL, I. H. 1976. Measurement of company productivity: Improving productivity through industrial and company management. *National Centre for Productivity and Quality of Working life*, Washington, D.C., Series 2, p. 15 – 25.
- SIERRA CLUB. 2003 “Population and overfishing Fact sheet – Global population and environment” <http://www.sierraclub.org/population/reports/fishing.asp>. (30 June 2003).
- SINGH, H., MOTWANI, J. & KUMAR, A. 2000. A review and analysis of the state-of-the-art research on productivity measurement . *Industrial management and Data Systems*, vol. 100, no. 5, p. 234 – 241.
- SOHAL, A. & ANDERSON, M. 1999. A study of the relationship between quality management practices and performance of small businesses. *International Journal of Quality & Reliability Management*, vol. 16, no. 9, p. 859-877.
- STAINER, A. 1997. Capital input and total productivity management. *Management Decision*, vol. 35, no. 3, p. 224-232
- STAINER, A. 1997. Logistics –a productivity and performance perspective. *Supply chain management*, vol. 2, no. 2, p. 53 – 63.
- STAINER, A., 1995. Productivity management: the Japanese experience. *Management Decision*, vol. 33, no. 8, p. 4 – 12.
- TAN, KEAH-CHOON; KANNAN, V. R.; HANDFIELD, R. B. & GHOSH, S. 1999. Supply chain management: an empirical study of its impact on performance. *International Journal of Operations & production Management*, vol. 19, no. 10, p.1034 – 1052.

- THE STATE OF ERITREA MINISTRY OF INFORMATION (MoI). 2004. Fishery resources development: Key to Economic Growth in Eritrea. 12 March 2004. http://www.shabait.com/articles/publish/article_1680.html (6 April 2004).
- THOMAS, B. & BARON, J.P. 1994. Evaluating Knowledge worker productivity. USACERL interim report FF-94/24, June 1994,
- TJOSVOLD, D., YU, Z. & LIU, C. 2002. Production and people values: their impact on relationships and leader effectiveness in China. *Leadership & Organisation Development Journal*, vol. 23, no. 3, p. 134 – 144.
- TURNER, J. 2003. Current challenges in international fisheries. *Economic Perspectives*, published January 2003.
- USAID SPARE Fisheries & Aquaculture Panel. 2003. Review of the states, trends, and issues in global fisheries & aquaculture, with recommendations for USAID investment. http://pdacrsp.oregonstate.edu/miscellaneous/f&a_subsector_final_rpt.pdf (4 Apr 2004)
- VAN LOGGERENBERG, B. J. & CUCCHIARO, S. J. 1981-82. Productivity measurement and the bottom-line. *National Productivity Review*, vol. 1, no. 1, winter 1981-82, p.87 – 99.
- WALTEMATH, M. 2002. Conservation and sustainable use of agricultural biodiversity. *A Sourcebook*. International treaties relevant to the Conservation and Management of Aquatic Biodiversity. Page 488-500.
- WHITE PAPER. 1997. A marine Fisheries policy for South Africa. 5 May 1997. <http://www.gov.za/whitepaper/1997/marine.htm> (15 Apr. 2004).

WOOD, M. 1997. The notion of customer in total quality management. *Total Quality Management*, vol. 8, no. 4, p. 181 – 194.

WORLD BANK, 2003. World Fisheries: Coping with a global crisis. September, 2003.
www.worldbank.org/rural (3 April 2004).

WORLD RESOURCES, 1996-97. A guide to the global environment. Marine fishing trends: troubled waters ahead the urban environment.
http://www.wri.org/wri/wr-96-97/wa_txt2.html. (18 June 2003).

WORLD RESOURCES.1998-1999. Diminishing returns: world Fisheries under pressure.
<http://wri.igc.org/wr-98-99/fishlos2.html>. (3 Jul. 2003).

Appendix 1

QUESTIONNAIRE

Dear respondent,

The research is conducted for the purpose of completing my masters degree at the University of Pretoria. I am studying the management practices of the companies operating in the Eritrean fisheries industry and its relationship with total factor productivity (TFP). I would greatly appreciate your participation in this project, by completing the attached questionnaire and allow a follow-up interview to explore issues in more depth. All information obtained from this questionnaire will be treated ***confidential*** and participant's identity will remain anonymous. The results will be used for academic purposes only, and might be included in an academic publication.

This questionnaire seeks information about the degree of implementation of certain selected management practices in your company. The selected management practices to be considered are the following: measuring productivity, productivity standards, management of the customer and the employee, organisational communication, product quality, leadership and the competitive environment. You will be asked to consider how these various elements are managed in your company.

In answering each question, please be as ***objective*** as possible remembering that biases sometimes "***cloud***" the real answer. You should not tick a box for example because the answer sounds more like what you "***want***" to hear but rather, indicate an answer which in your opinion ***accurately depicts the present situation in the company***. Your responses should reflect the situation in your section/company. The validity of this research largely depends on the accuracy of your answers.

Thank you in advance for your participation in the completion of this questionnaire.

Kibrom Shumdehan
Researcher

Prof. E F de V Maasdorp
Supervisor

SECTION ONE: Background Information

		Respondent Number	<u>Office use</u>
1.	What is your position in the company? <input type="checkbox"/> General manager (C.E.O.) <input type="checkbox"/> Department head <input type="checkbox"/> Section head <input type="checkbox"/> Supervisor <input type="checkbox"/> Other, please specify: _____		V1 <input type="checkbox"/> <input type="checkbox"/> 1-2 V2 <input type="checkbox"/> 3
2.	Gender <input type="checkbox"/> Female <input type="checkbox"/> Male		V3 <input type="checkbox"/> 4
3.	Your highest educational level <input type="checkbox"/> Primary Education <input type="checkbox"/> Secondary Education <input type="checkbox"/> College diploma <input type="checkbox"/> Bachelor Degree <input type="checkbox"/> Master Degree <input type="checkbox"/> Other, please specify: _____		V4 <input type="checkbox"/> 5
4.	Name the section, division or department of which you are in charge _____ _____		
5.	Describe your main duties. _____ _____ _____		
6.	How many employees directly report to you? <input type="checkbox"/> 1 – 5 <input type="checkbox"/> 16 - 20 <input type="checkbox"/> 6 – 10 <input type="checkbox"/> 21 - 25 <input type="checkbox"/> 11 – 15 <input type="checkbox"/> 26 and more		V5 <input type="checkbox"/> 6
7.	How many years have you been with this company? <input type="checkbox"/> Less than 2 years <input type="checkbox"/> 2 – 5 years <input type="checkbox"/> More than 5 years		V6 <input type="checkbox"/> 7

SECTION TWO: Factors which the company management has direct control over

In this section you are asked to consider a number of statements in relation to your view of your section/company. Please answer ***all*** questions by ticking (✓) the appropriate box, which ***best*** describes the current situation in your section or company.

Part One: Ranking of certain management practices

8. Which of the following factors do you think *contributes most to productivity growth* in your company? Rank them in order of importance where 8= most important and 1= least important.

- | | | |
|---|--------------------------|---------------------------------|
| a) Investing in new machinery/ technology | <input type="checkbox"/> | V7 <input type="checkbox"/> 8 |
| b) Training of employees | <input type="checkbox"/> | V8 <input type="checkbox"/> 9 |
| c) Effective organisational communication | <input type="checkbox"/> | V9 <input type="checkbox"/> 10 |
| d) Resource availability | <input type="checkbox"/> | V10 <input type="checkbox"/> 11 |
| e) Customer satisfaction | <input type="checkbox"/> | V11 <input type="checkbox"/> 12 |
| f) Employee satisfaction | <input type="checkbox"/> | V12 <input type="checkbox"/> 13 |
| g) Marketing effectiveness | <input type="checkbox"/> | V13 <input type="checkbox"/> 14 |
| h) Product quality | <input type="checkbox"/> | V14 <input type="checkbox"/> 15 |

Office use

Part Two: Management practices relating to productivity measurement

- | | | | | | |
|---|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|--|
| 9. Productivity measures are part of the company goals and mission. | | V15 <input type="checkbox"/> 16 | | | |
| <input type="checkbox"/> ⁵ | <input type="checkbox"/> ⁴ | <input type="checkbox"/> ³ | <input type="checkbox"/> ² | <input type="checkbox"/> ¹ | |
| <i>Strongly agree</i> | <i>Agree</i> | <i>Neither agree nor disagree</i> | <i>Disagree</i> | <i>Strongly Disagree</i> | |
| 10. Key measures of section/department performance have been identified. | | V16 <input type="checkbox"/> 17 | | | |
| <input type="checkbox"/> ⁵ | <input type="checkbox"/> ⁴ | <input type="checkbox"/> ³ | <input type="checkbox"/> ² | <input type="checkbox"/> ¹ | |
| <i>Strongly agree</i> | <i>Agree</i> | <i>Neither agree nor disagree</i> | <i>Disagree</i> | <i>Strongly Disagree</i> | |
| 11. Key functional personnel are involved in the design and development of productivity measures. | | V17 <input type="checkbox"/> 18 | | | |
| <input type="checkbox"/> ⁵ | <input type="checkbox"/> ⁴ | <input type="checkbox"/> ³ | <input type="checkbox"/> ² | <input type="checkbox"/> ¹ | |
| <i>Strongly agree</i> | <i>Agree</i> | <i>Neither agree nor disagree</i> | <i>Disagree</i> | <i>Strongly Disagree</i> | |

12. Section performance results are used to plan improvement. V18 19
- ⁵ ⁴ ³ ² ¹
Strongly agree *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*
13. Company performance results are communicated throughout the company. V19 20
- ⁵ ⁴ ³ ² ¹
Strongly agree *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*
14. Overall company performance is measured against our competitors. V20 21
- ⁵ ⁴ ³ ² ¹
Strongly agree *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*

Part Three: Management practices relating to productivity standards

15. Please mark one Implemented Planned for Not planned for
- a) In-house productivity standards V21 22
- b) Third party productivity standards V22 23
- c) Benchmarking V23 24
16. Does your company have a productivity improvement program? V24 25
 If yes, then **Yes** **No**
- a) is someone in charge ? V25 26
- b) is there a formal structure? V26 27
- c) Are managers at all levels involved? V27 28
17. Do you as an individual manager taken any specific action to improve productivity?
 Yes No. If yes, briefly what were they? _____ V28 29

Part Four: Management practices relating to employees

18. Employees are encouraged to be fully involved in the business and they reach their full potential. V29 30
- ⁵ ⁴ ³ ² ¹
Strongly agree *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*
19. Training needs are assessed periodically. V30 31
- ⁵ ⁴ ³ ² ¹

Strongly agree *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*

20. There is a budget allocated by the company for employee training purpose. V31 32
- ⁵
⁴
³
²
¹
- Strongly agree* *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*
21. All employees believe that increasing productivity is their responsibility. V32 33
- ⁵
⁴
³
²
¹
- Strongly agree* *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*
22. Employees are empowered by delegating authority to make decisions regarding process improvement within individual areas of responsibility. V33 34
- ⁵
⁴
³
²
¹
- Strongly agree* *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*
23. Reward and recognition systems support the company's productivity objectives. V34 35
- ⁵
⁴
³
²
¹
- Strongly agree* *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*
24. Employee satisfaction is regularly measured. V35 36
- ⁵
⁴
³
²
¹
- Strongly agree* *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*
25. There is adequate and fair pay for a job well done. V36 37
- ⁵
⁴
³
²
¹
- Strongly agree* *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*
26. There are safe and healthy working conditions. V37 38
- ⁵
⁴
³
²
¹
- Strongly agree* *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*
27. Employees have pride in the work itself and the organisation. V38 39
- ⁵
⁴
³
²
¹
- Strongly agree* *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*

Part Five: Organisational communication

28. Instructions and procedures are clear and easy to follow by subordinates. V39 40
- ⁵
⁴
³
²
¹
- Strongly agree* *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*
29. The company has a formal written purpose and direction. It is broadly communicated and understood by all managers and employees. V40 41
- ⁵
⁴
³
²
¹
- Strongly agree* *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*
30. Communication is open and continuous in three directions: up, down and across. V41 42
- ⁵
⁴
³
²
¹
- Strongly agree* *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*
31. Reports and models are designed to increase effectiveness in displaying and analysing of data. V42 43
- ⁵
⁴
³
²
¹
- Strongly agree* *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*
32. Both management and employees receive timely information. V43 44
- ⁵
⁴
³
²
¹
- Strongly agree* *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*

Part Six: Management practices on customer.

33. The company regularly measures customer satisfaction. V44 45
- ⁵
⁴
³
²
¹
- Strongly agree* *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*
34. The present needs and expectations of customers for the future are known. V45 46
- ⁵
⁴
³
²
¹
- Strongly agree* *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*
35. Complaints and problems are resolved promptly and efficiently by management. V46 47
- ⁵
⁴
³
²
¹

Strongly agree *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*

36. Employees are considered as internal customers in your company. V47 48
5
 4
 3
 2
 1

Strongly agree *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*

37. Customer relationships are evaluated and improved. V48 49
5
 4
 3
 2
 1

Strongly agree *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*

Part Seven: Management practices relating to quality

38. Quality improvement is your company’s objective. V49 50
5
 4
 3
 2
 1

Strongly agree *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*

39. Management promotes quality improvement efforts. V50 51
5
 4
 3
 2
 1

Strongly agree *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*

40. Your company always strives to produce existing products without any defects. V51 52
5
 4
 3
 2
 1

Strongly agree *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*

41. Management has established methods to maintain and improve the quality of products. V52 53
5
 4
 3
 2
 1

Strongly agree *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*

42. Management focuses on prevention of problems before they happen. V53 54
5
 4
 3
 2
 1

Strongly agree *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*

43. Management understands the strong connection between quality and productivity. V54 55
5
 4
 3
 2
 1

Strongly agree *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*

44. Top management concentrates on improving productivity and increasing effectiveness in utilising its resources. V55 56
5
 4
 3
 2
 1

Strongly agree *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*

Part Eight: Practices on leadership and competitive environment

45. Management knows exactly how aggressive your major competitors are. V56 57
- ⁵
⁴
³
²
¹
- Strongly agree* *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*
46. Overall competitiveness in your industry is very high. V57 58
- ⁵
⁴
³
²
¹
- Strongly agree* *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*
47. The amount of time spent analysing your major competitors is very high. V58 59
- ⁵
⁴
³
²
¹
- Strongly agree* *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*
48. The management style (leadership style) in your company encourages productivity. V59 60
- ⁵
⁴
³
²
¹
- Strongly agree* *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*
49. Strategies of the company include opening up overseas markets and finding new ways to compete. V60 61
- ⁵
⁴
³
²
¹
- Strongly agree* *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*
50. Marketing strategies of the company focus on international marketing and global competition. V61 62
- ⁵
⁴
³
²
¹
- Strongly agree* *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*

SECTION THREE: Factors which the company management has minimal influence or no control over.

In this section you are required to give your opinion on the various statements by ticking (✓) the appropriate box from the scale provided.

51. The government policies regarding the fisheries industry in Eritrea are conducive to your company's productivity growth objectives. V62 63
- ⁵
⁴
³
²
¹
- Strongly agree* *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*
52. The geographical location of your company is ideal for the kind of business you are running. V63 64
- ⁵
⁴
³
²
¹

Strongly agree *Agree* *Neither agree nor disagree* *Disagree* *Strongly Disagree*

53. There are many raw materials suppliers for your company at a competitive price.

V64 65

⁵
Strongly agree ⁴
Agree ³
Neither agree nor disagree ²
Disagree ¹
Strongly Disagree

54. The level of local competition in the industry is very high.

V65 66

⁵
Strongly agree ⁴
Agree ³
Neither agree nor disagree ²
Disagree ¹
Strongly Disagree

55. There is no need to look for new market, because the local market is not yet satisfied.

V66 67

⁵
Strongly agree ⁴
Agree ³
Neither agree nor disagree ²
Disagree ¹
Strongly Disagree

Thank you for your valuable time.

Appendix 3

Results of descriptive statistics using the ITEMAN Conventional Item Analysis Program Version 3.6.

Scale Statistics

Scale:	PM	EP	OC	CF	PQ	LC
N of items	6	10	5	5	7	6
N of examinees	41	41	40	41	41	41
Mean	3.163	3.033	3.330	3.234	3.763	3.089
Variance	0.894	0.551	0.581	0.581	0.726	0.422
Std. Dev.	0.945	0.742	0.762	0.762	0.852	0.649
Skew	-0.521	0.388	0.007	-0.139	-0.775	-0.429
Kurtosis	-0.193	-0.039	-0.629	-0.522	-0.112	-0.842
Minimum	1.000	1.600	2.000	1.600	1.714	1.833
Maximum	5.000	5.000	5.000	5.000	5.000	4.167
Median	3.167	2.900	3.400	3.200	4.000	3.167
Alpha	0.877	0.885	0.817	0.846	0.902	0.688
SEM	0.331	0.252	0.326	0.299	0.267	0.362
Mean P	N/A	N/A	N/A	N/A	N/A	N/A
Mean Item-Tot.	0.787	0.696	0.764	0.783	0.785	0.622
Mean Biserial	N/A	N/A	N/A	N/A	N/A	N/A

Legend:

PM = Productivity measurement

EP = Employee training and participation

OC = Organisational communication

CF = Customer focus

PQ = Product quality

LC = Leadership and competitive environment

Appendix 4

Results of descriptive statistics using the ITEMAN Conventional Item Analysis Program Version 3.6.

Pearson Product-moment correlations among the examinee scores on the individual scales.

Scale Intercorrelations.

	PM	EP	OC	CF	PQ	LC
PM	1.000	0.775	0.754	0.824	0.799	0.668
EP	0.775	1.000	0.826	0.803	0.673	0.593
OC	0.754	0.826	1.000	0.794	0.728	0.562
CR	0.824	0.803	0.794	1.000	0.778	0.574
PQ	0.799	0.673	0.728	0.778	1.000	0.687
LC	0.668	0.593	0.562	0.574	0.687	1.000

Legend:

PM = Productivity measurement
 EP = Employee training and participation
 OC = Organisational communication
 CF = Customer focus
 PQ = Product Quality
 LC = Leadership and competitive environment

Appendix 2

Total factor productivity (TFP) calculations (Company 7)

	1998		1999		2000		2001		2002	
	USD	INDEX	USD	INDEX	USD	INDEX	USD	INDEX	USD	INDEX
OUTPUT:										
Total sales revenue	8671808		9871502		10231000		12167253		11666724	
Inventory Change (±)	3228843		2336892		2021990		1404659		-650000	
Adjusted Production Output	11900651		12208394		12252990		13571912		11016724	
Less: - Material expenses	-2322137		-2043161		-2080620		-2404590		-1524703	
Energy expenses	-484640		-490164		-521955		-598141		-406206	
Other Expenses	-1479534		-1442131		-1274641		-1279686		-1090758	
Value added Output	7614340	100.0	8232938	108.0	8375774	110.0	9289495	122.0	7995057	105.0
CPI	1.00		1.052		1.084		1.126		1.225	
Adjusted Value added output	7614340	100.0	7825987	102.8	7726729	101.5	8249996	108.3	6526577	85.7
INPUT:-										
Labour (share of labour 20.8%)	1579887	100	1991922	126	1674680	106	1711018	108.3	1565668	99.1
CPI	1.00		1.052		1.084		1.126		1.225	
	1579887	100	1893462	119.8	1544908	97.8	1519554	96.2	1278096	80.9
Capital (share of capital 79.2%)	17156785	100	18656266	108.7	19046651	111.0	20464363	119.2	19293210	112.5
CPI	1.00		1.052		1.084		1.126		1.225	
	17156785	100	17734093	103.4	17570711	102.4	18174390	105.9	15749559	91.8
Total Factor Input (TFI)		100		106.8		101.4		103.9		89.5
PRODUCTIVITY MEASURES										
Labour Productivity		100		85.8		103.8		112.6		106
Capital Productivity		100		99.4		99.1		102.3		93.3
**TFP Productivity		100		96.3		100		104.2		95.8

** this indexes are the final measures of the Total Factor Productivity of company 7 during the years from 1998 - 2002.

Important notes and definitions in the TFP calculation:

1. **Total sales revenue.** This is the sales revenue received from outputs (goods and services) sold. Because complete records of units were not available, output was calculated from the annual sales revenue.
2. **± Inventory.** This includes finished goods and work in progress items. Inventory (calculated in sales value) stands for the difference between the year ending value and year beginning value of inventory. In the calculations of inventory balances, the FIFO method was applied. The balance is then added to or subtracted from the total sales. In this manner, in our calculations, an inventory adjustment was made to convert the sales output to a production output. In 1998 there was an inventory valued at \$3,228,843, which was produced in the same year but not sold.
3. **Value added (VA).** This is the difference between adjusted production output and other external purchases. In this case, materials, energy and other expenses were subtracted from the production output to arrive at the “value added output”. It refers to the “value added” to materials by each company as a result of applying labour and capital to convert the inputs into salable (marketable) outputs. In 1998 (\$ 7,614,340)
4. **CPI (consumer price index).** This is a price index number as sourced from the Commercial Bank of Eritrea (CBE). It is used to transform (i.e., to either inflate or deflate) the nominal value into real value. Because of the shortage of time and the lack of appropriate price indexes for each category of costs in the industry, the researcher has used the CPI to transform all the nominal values into real values. Had there been enough time, it could have been possible to develop company specific indexes, such as PPI (producer price index), in order to get a more accurate result.
5. **The base year.** In all the calculations, the year 1998 was chosen as the base year and hence an index number of 100 was allocated. By using an index, each year’s figure represents the relative change in the measure from this year (1998).
6. **Labour input (L).** Labour input is the total wage and salary costs paid for producing the value-added output, including all other benefits to employees in a particular financial year (i.e., \$1,579,887 in the base year). The assumption is that these costs represent the economic cost of the human talent that created the value-added output.
7. **Capital input (K).** Capital input is the cost of capital utilised in the production of the value-added output. There are many methods used in calculating capital inputs. In this study the method used to calculate capital input was the indexed historic cost approach adjusted for inflation. Capital assets include machinery, building, furniture, equipment and land. The real purchase values of capital were the only data available in the financial statements of the companies, which were written off overtime to account for depreciation. (In 1998, it was \$17,156,785).

8. **Total factor input (TFI).** This is the weighted sum of labour and capital input indexes. Labour and capital input indexes must be added to derive total factor input. To do so, their respective shares of total income in the base year (i.e., 1998) must be calculated. For instance, in this case labour input accounted for 20.8% percent of value added output ($1,579,887/7,614,340 = 20.8\%$). The remaining share was attributed to capital 79.2%(100% - 20.8%). These fixed weighting factors were then used throughout the years to sum the labour and capital inputs so that to arrive at the total factor inputs. For example, in 2002:

$$TFI \text{ was calculated as } [80.9 (0.208) + 91.8 (79.2) = 89.5].$$

9. **Total factor productivity (TFP).** This is the ratio of value added output to total factor input.

$$\text{In 1999, TFP} = \frac{VA}{TFI} = \frac{85.7}{89.5} = 95.8,$$

Relative to the base year (1998) in 2002 this company showed a 4.2% decline in total factor productivity.

Appendix 5

Mean calculations of one company's respondents responses to the questions. SAS Statistical software was used.

Respondent	v15	v16	v17	v18	v19	v20	v29	v30	v31	v32	v33	v34	v35	v36	v37	v38	v39	v40	v41	v42	v43	v44	v45	v46	v47	v48
1	4	4	2	4	1	3	3	3	3	4	4	4	3	4	4	3	4	4	4	3	3	3	4	4	3	3
2	4	3	3	3	4	3	4	3	3	3	3	4	3	3	4	3	3	3	3	3	3	3	3	4	4	3
3	4	4	3	3	3	2	3	3	2	3	3	3	3	3	3	3	3	4	3	3	3	2	3	3	3	3
4	4	4	3	4	4	4	3	2	2	3	4	2	2	2	4	4	4	4	4	2	3	4	4	4	3	4
5	3	2	3	4	3	2	3	2	2	4	3	2	5	2	4	4	4	3	4	2	2	5	4	4	3	2

Continues....

Obs	v49	v50	v51	v52	v53	v54	v55	v56	v57	v58	v59	v60	v61	PM	EP	OC	CF	PQ	CE	
1	5	4	3	3	3	5	4	4	3	3	4	4	5	3.00000	3.5	3.6	3.4	3.85714	3.83333	
2	4	4	4	4	4	4	4	3	3	3	4	4	4	3.33333	3.3	3.0	3.4	4.00000	3.50000	
3	4	4	4	4	3	4	4	3	4	2	5	4	4	3.16667	2.9	3.2	2.8	3.85714	3.66667	
4	4	4	5	4	4	4	4	3	3	3	2	3	5	3.83333	2.8	3.4	3.8	4.14286	3.16667	
5	3	4	4	3	4	4	3	4	4	2	4	4	4	<u>2.83333</u>	<u>3.1</u>	<u>3.0</u>	<u>3.6</u>	<u>3.57143</u>	<u>3.66667</u>	
														Mean	3.23332	3.12	3.24	3.4	3.88571	3.56667

Appendix 6

ITEMAN (tm) for 32 – bit Windows, Version 3.6

Conventional Item and Test Analysis Program

Seq. No.	Item Statistics for CF				N per Item
	Scale -Item	Item Mean	Item Var.	Item-Scale Correlation	
33	6-1	3.100	1.140	.88	41
34	6-2	3.400	0.840	.82	41
35	6-3	3.451	0.933	.70	41
36	6-4	3.220	0.805	.84	41
37	6-5	<u>3.000</u>	0.976	.67	41
		3.234			

The Means for each of the six scales were calculated as above using ITEMAN software.

*Appendix 7***Mean TFP calculations for the high total factor productivity (HTFP) companies.**

Company	Years				
	Base year 1998	1999	2000	2001	2002
Company 1	100.0	41.9	145.6	16.4	129.3
Company 3	100.0	99.6	65.3	76.2	162.0
Company 6	100.0	101.4	126.1	135.4	113.8
Mean TFP	100.0	81.0	123.3	76.0	135.0

Mean TFP calculations for the low total factor productivity (LTFP) companies.

Company	Years				
	Base year 1998	1999	2000	2001	2002
Company 2	100.0	100.0	81.1	23.6	-27.8
Company 4	100.0	84.5	104.6	101.6	81.8
Company 5	100.0	99.4	144.9	98.2	96.2
Company 7	100.0	96.3	100.0	104.2	95.8
Company 8	100.0	75.0	91.6	31.9	-16.3
Mean TFP	100.0	91.0	101.4	71.9	45.9

Mean TFP calculations for all companies.

Company	Years				
	Base year 1998	1999	2000	2001	2002
Company 1	100.0	41.9	145.6	16.4	129.3
Company 2	100.0	100.0	81.1	23.6	-27.8
Company 3	100.0	99.6	65.3	76.2	162.0
Company 4	100.0	84.5	104.6	101.6	81.8
Company 5	100.0	99.4	144.9	98.2	96.2
Company 6	100.0	101.4	126.1	135.4	113.8
Company 7	100.0	96.3	100.0	104.2	95.8
Company 8	100.0	75.0	91.6	31.9	-16.3
Mean TFP	100.0	87.3	107.4	73.4	79.4