THE IMPACT OF MANAGEMENT PRACTICES ON PRODUCTIVITY IN THE ERITREAN FISHING INDUSTRY

by

Kibrom Shumdehan Ghebrit

Submitted in fulfillment of the requirements for the degree

Magister Commercii (Business Management)

in the

Faculty of Economic and Management Sciences

at the

University of Pretoria

Supervisor: Professor E F de V Maasdorp

Pretoria June 2004
DECLARATION

I, Kibrom Shumdehan Ghebrit declare that the study on “The impact of management practices on productivity in the Eritrean fisheries industry” was concluded by me. I also compiled this research report and all the sources used or cited are acknowledged by means of a complete reference:

_________________________
Kibrom Shumdehan Ghebrit
ACKNOWLEDGEMENTS

This dissertation would not have been completed without the help and encouragement of the following people:

First and foremost I am greatly indebted to my supervisor, Professor E F de V Maasdorp, for his guidance, constructive suggestions and patience throughout the entire writing of the study. I would like to extend a sincere word of thanks to him for challenging my ideas and expanding my cognitive horizons.

I would like to thank the Ministry of fisheries of Eritrea (MoF) in general and the managers of the participating companies in particular for their unreserved co-operation and willingness to provide me with all the necessary information/data during my short visit to Eritrea during the data collection phase.

My sincere thanks also goes to the National Productivity Institute (NPI) of South Africa in Midrand for providing me with the relevant articles on productivity and its measurements.

I would also like to acknowledge the help of the department of statistics, research assistance section, of the University of Pretoria particularly Mrs JH Rina Owen and Miss Rene Ehlers for assisting me in the analysis of the data using the appropriate computer software.

Last, but far from least, I am thankful to all my family members, particularly to Shumdehan Ghebrit, Leteberhan Gebrezgiabher, Andemariam H/mariam and Kirsha Ghebrit, who have been there for me throughout my student life and for their never-ending motivation, encouragement, unreserved support and love in realising my dreams come true.
ABSTRACT

In today’s highly competitive business environment where survival of the fittest is considered the norm, business managers are increasingly striving to attain a position of competitive advantage in order to excel their competitors by effectively and efficiently utilising their resources. A better management practice at all levels of an organisation is a method that is increasingly accepted as a single best way to improve productivity. Improved productivity enables firms to meet all their business obligations to employees, suppliers, stakeholders and the government and to still remain competitive. To take advantage of the benefits to be realised from improved productivity, managers are expected to deal thoughtfully with their internal and external business environment. Thus, unless they understand the effects of their actions on their companies’ performances, all their day to day actions might end up counterproductive.

The objective of this study was to determine the degree of application of certain management practices in the private companies of the Eritrean fisheries industry and to investigate whether a relationship exists between the management practices and total factor productivity. In doing so, six internal management practices were identified and examined in connection to their impacts on total factor productivity in the private companies operating in the Eritrean fisheries industry. The management practices identified are productivity measurement, employee training and participation, organisational communication, customer focus, product quality and leadership and competitive environment. In 2003, the industry consisted total of 12 companies of which eight were surveyed in this study. Through detailed examination of the primary and secondary empirical data collected, first, the companies were classified into two major groups as being the High and the Low - total factor productivity companies. Following the classification, whether the degree of application of the identified management practices by each company has an impact on the total factor productivity was examined. Data analysis was based on both descriptive and inferential statistics. The ITEMAN and
SAS computer software packages were used to analyse the survey responses of the 41 participating managers.

The hypotheses were tested through a mean difference method and the Mann-Whitney U test statistics was utilised to analyse the significance of the differences in mean management practices (µMPs).

The results of the study confirmed that each of the six - mean internal management practices (µMPs) for groups of companies classified as HTFP companies were significantly higher than for those groups of companies classified as LTFP companies. Thus, it was concluded that a direct and positive relationship exists between management practices and TFP in the surveyed companies. Besides, the results of percentage comparison of some external factors affecting productivity between the two groups of companies also confirmed a positive relationship to productivity. Generally, it was concluded that the companies in the Eritrean fisheries industry are low productive mainly because of the prevailing low level of management practices.

The managerial implication of these findings is that the managers of the companies in the industry should give special attention to improve the identified internal management practices as they have direct impact on their performance.
# TABLE OF CONTENTS

ACKNOWLEDGEMENT--------------------------------------------------------------- I

ABSTRACT------------------------------------------------------------------------ II

LIST OF TABLES------------------------------------------------------------------ VIII

LIST OF FIGURES----------------------------------------------------------------- X

CHAPTER – 1

Introduction and research methodology ---------------------------------------- 1

1.1 Introduction--------------------------------------------------------------- 1

1.2 Background to the study---------------------------------------------------- 3

1.3 Statement of the problem---------------------------------------------------- 6

1.4 Objectives of the study----------------------------------------------------- 7

1.4.1 Background Study--------------------------------------------------------- 8

1.4.2 Empirical study----------------------------------------------------------- 8

1.4.3 Conclusions--------------------------------------------------------------- 9

1.4.4 Recommendations---------------------------------------------------------- 9

1.5 Research methodology-------------------------------------------------------- 9

1.5.1 Population of the study------------------------------------------------- 10

1.5.2 Variable measurement----------------------------------------------------- 10

1.5.3 Measuring instrument------------------------------------------------------ 13

1.5.3.1 Questionnaires--------------------------------------------------------- 14

1.5.3.1.1 Validity------------------------------------------------------------- 15

1.5.3.2 Personal interviews----------------------------------------------------- 17

1.5.4 Methods of data collection----------------------------------------------- 17

1.5.4.1 Questionnaire distribution--------------------------------------------- 17

1.5.4.2 Personal interviews----------------------------------------------------- 18

1.5.4.3 Total factor productivity (TFP)----------------------------------------- 18

1.5.5 Methods of data analysis----------------------------------------------- 19

1.5.5.1 Descriptive and inferential statistics------------------------------- 21

1.6 Scope of the study---------------------------------------------------------- 23

1.7 Contribution of the study--------------------------------------------------- 24
1.8 Organisation of the study................................................................. 25
1.9 Chapter summary.................................................................................. 26

CHAPTER - 2
The Fishing industry and its challenges ---------------------------------------- 27
2.1 Introduction ........................................................................................... 27
2.2 Importance and trend of the global fishing industry -------------------- 27
2.3 Global fishing production...................................................................... 29
  2.3.1 Growth in the fishing industry....................................................... 32
2.4 The challenges of world fisheries........................................................ 32
  2.4.1 Underlying causes of decline in the fishing industry .................. 34
  2.4.2 Global treaties dealing with over-fishing...................................... 39
2.5 The South African fishing industry....................................................... 43
  2.5.1 The industry’s problem areas....................................................... 46
2.6 The Eritrean fishing industry............................................................... 47
2.7 Chapter summary.................................................................................. 51

CHAPTER - 3
Productivity and its measurement ............................................................... 53
3.1 Introduction ........................................................................................... 53
3.2 Productivity in general........................................................................... 54
3.3 Productivity defined................................................................................ 58
  3.3.1 Performance effectiveness and Performance efficiency ............ 62
3.4 Productivity measurement..................................................................... 64
  3.4.1 Purposes of productivity measurement ....................................... 67
  3.4.2 General and special difficulties with measures ......................... 69
  3.4.3 Benefits of productivity measurement in companies and organisations 70
3.4.4 Elements of productivity measures............................................... 71
  3.4.4.1 Outputs ............................................................................... 72
    3.4.4.1.1 Measures of output....................................................... 75
  3.4.4.2 Inputs ................................................................................ 76
    3.4.4.2.1 Measures of input........................................................ 79
3.4.5 Measure expressions....................................................................... 79

- V -
5.2.2.3 Productivity standards -----------------------------------------------146
5.2.2.4 Management practices relating to employees.------------------------150
5.2.2.5 Management practices relating to organisational communication ----155
5.2.2.6 Management practices relating to customer focus. -----------------157
5.2.2.7 Management practices relating to product quality. -----------------160
5.2.2.8 Management practices on leadership and competitive environment ----163
5.2.3 External factors--------------------------------------------------------165
5.3 Classifying companies into high & low total factor productivity --------169
5.4 Analysing the link between TFP & management practices (MPs)-----------174
  5.4.1 Descriptive statistics of data------------------------------------------174
  5.4.2 Hypotheses testing – differences in means (Δµ) ----------------------176
  5.4.3 Analysing the relationships between the external factors and TFP----180
5.5 Chapter summary----------------------------------------------------------182

CHAPTER - 6
Conclusions and recommendations-------------------------------------------184
  6.1 Introduction -------------------------------------------------------------184
  6.2 Conclusion ---------------------------------------------------------------184
    6.2.1 Total factor productivity (TFP) -------------------------------------185
    6.2.2 Management practices (MPs) -----------------------------------------186
    6.2.3 The relationship between total factor productivity and management practices--189
  6.3 Recommendations----------------------------------------------------------189
  6.4 Recommendations for further research-----------------------------------191
# LIST OF TABLES

Table 1.1 - Reliability Coefficients--------------------------------------- 20

Table 2.1 - World fishing production and utilisation

(in millions of metric tons)----------------------------------------------- 30

Table 2.2 - World marine capture fishing production by

Ocean (in millions of metric tons)--------------------------------------- 31

Table 2.3 - The top 10-world marine capture fishing producers-------------32

Table 3.1 - Productivity effectiveness and efficiency --------------------- 63

Table 3.2 - Types of productivity measures ------------------------------- 90

Table 5.1 - Distribution of the managers according to their positions----138

Table 5.2 - Distribution of managers according to their gender-----------139

Table 5.3 - Distribution of the managers according to their highest

educational levels--------------------------------------------------------139

Table 5.4 - Distribution of the managers according to the number of

employees directly reporting to them. -----------------------------------140

Table 5.5 - Distribution of the managers according to

their experiences in the company----------------------------------------141

Table 5.6 - Ranking of certain variables according to their response means---142

Table 5.7 - Distribution of the respondents answers about their productivity

measurement actions------------------------------------------------------144

Table 5.8 - Distribution of the respondents according to their responses to

productivity standard questions------------------------------------------146

Table 5.9 - Distribution of the respondents answers according to their

responses to productivity improvement programs-------------------------148

Table 5.10 - Distribution of the respondents’ responses to

employee related questions-----------------------------------------------150

Table 5.11 - Distribution of the respondents’ response

on organisational communication------------------------------------------155

Table 5.12 - Distribution of the respondents’ responses to their customer practices----158

Table 5.13 - Distribution of respondents’ responses to product quality------160
Table 5.14 - Distribution of the responses of the respondents on their views to leadership and competitive environment------------------------------------ 163

Table 5.15 - Distribution of the companies (%) according to the responses to company external productivity factors questions-------------------------- 166

Table 5.16 - Total factor productivity indexes of the eight companies during the period (1998 – 2002)--------------------------------- 170

Table 5.17 - Mean total factor productivity indexes for three categories of companies during the period (1998 – 2002)------------------- 171

Table 5.18 - The six management practices examined in testing the hypotheses and their brief description.-------------------------------------- 174

Table 5.19 - Descriptive statistics for the six management practices----------------------175

Table 5.20 - Internal management practices for companies with high and low levels of TFP in 2002 [Mean (µ)].--------------------------- 176

Table 5.21 - Some statistical measurements for certain management practices (MPs)----------------------------------------------- 178

Table 5.22 - Percentage comparison of responses for HTFP and LTFP companies----------------------------------------------- 181
LIST OF FIGURES

Figure 3.1 - Cyclic effects of low productivity----------------------------------------------- 58
Figure 3.2 - Components of productivity------------------------------------------------- 61
Figure 3.3 - Input components considered in the task – oriented total
productivity model--------------------------------------------------------------- 98
Figure 3.4 - Output components considered in the task-oriented total
productivity model--------------------------------------------------------------- 99
Figure 3.5 - Objective Matrix – OMAX---------------------------------------------------- 101
Figure 3.6 - Relations among Productivity, Price recovery, and Profitability----------- 103
Figure 3.7 - Productivity Accounting – Performance Variances-------------------------- 104
Figure 4.1 - An integrated model of enterprise productivity factors-------------------- 110
Figure 4.2 - The study framework-------------------------------------------------------- 111
Figure 4.3 - Productivity and quality Assessment Matrix (PAQAM)---------------------- 128
Figure 5.1 - Mean TFP index measures for the HTFP and LTFP companies
during the period (1998 – 2002)----------------------------------------------------- 172
Figure 5.2 - Mean total factor productivities line for all companies during the
period (1998 – 2002)--------------------------------------------------------------- 173
Figure 5.3 - Mean (µ) MPs for HTFP and LTFP companies in 2002---------------------- 177

BIBLIOGRAPHY-------------------------------------------------------------------------------------193

Appendix 1------------------------------------------------------------------------------------- 208
Appendix 2------------------------------------------------------------------------------------- 217
Appendix 3------------------------------------------------------------------------------------- 220
Appendix 4------------------------------------------------------------------------------------- 221
Appendix 5------------------------------------------------------------------------------------- 222
Appendix 6------------------------------------------------------------------------------------- 223
Appendix 7------------------------------------------------------------------------------------- 224