

BUSITEMA UNIVERSITY
FACULTY OF ENGINEERING
DEPARTMENT OF TEXTILE AND GINNING ENGINEERING

**ANALYSIS OF TOTAL QUALITY MANAGEMENT SYSTEM IN A UGANDAN
TEXTILE MILL**

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BU/UG/2010/137



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**A RESEARCH PROJECT REPORT SUBMITTED TO THE DEPARTMENT OF
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DECLARATION

I, **Tulinabo Samuel** Reg: **BU/UG/2010/137**, do declare that this report is from my original work and has never been presented to any university for the award of a bachelor of science in textile engineering.

Signature: 

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DEDICATION

I dedicate this project report to my dear family of the late Kwenyongera Abias for all the financial, moral, love and spiritual support they offered to me during my education carrier up to this level. May the Heavenly Father bless them abundantly.

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I extend my gratitude to all my Lecturers at the Faculty of Engineering, Department of Textile and Ginning Engineering who have equipped me with academic knowledge that has guided me to succeed in my studies for the four academic years.

Firstly, I would like to express my greatest gratitude to my project supervisors that is Eng. Wandera W. Johnnie and Mr. Janani Loum for their invaluable guidance during the course of my research.

I am indebted to my dear brothers, sisters, relatives, classmates and friends to whom I extend my sincere appreciation for their guidance and support whose wisdom and love shaped me as I grew up.

Additionally I would like to express my gratitude to the UFM officials and their group employees who freely gave me their time for the interviews. It is through the interviews that were granted to me that I was able obtain these findings hence increasing the credibility to the purpose of this study.

Last but not least I also acknowledge the past researchers about TQM, for it's through reviewing their past literature that I was able to come out with these report findings.

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ABSTRACT

In this report, the Quality Management of a Ugandan Textile Mill was studied through interviews, questioners and evaluation of past records in production and marketing departments. The study focused on TQM approach in a Ugandan Textile Mill in all functions at all levels of the organization mainly along the production section. This study was mainly carried out by industry visit, process mapping, data collection, analysis of the data, result and discussion of the analysis, and conclusion. In this case study, Uganda Fishnet Manufacturers Limited was examined and the results for a different year have been discussed. The study shows that the concept of TQM in Uganda Fishnet Manufacturers Limited (UFM) is based on the first defective ratio, double check, customer claim, productivity, inventory, and supplier performance. The Present Quality Management system in UFM did not successful achieve the target even though UFM had a Quality system for a long time. This is due to the improper planning of the organization, and lack of continuous training and education of the employees. Finally, it is hoped that the results from the study could contribute to the researcher for future improvement.

LIST OF ACRONYMS AND ABBREVIATIONS

QMS - Quality Management System

TQM -Total Quality Management System

SPC- Statistical Process Control

UFM- Uganda Fishnet Manufactures Limited

QC- Quality control

SQC- Statistical Quality Control

TQC- Total Quality Control

LSL- Lower Specification Limit

USL- Upper Specification Limit

CL- Centre Limit/ line

SOPs-Standard Operating Procedures

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CHAPTER ONE

1.1 PROFILE OF THE CASE STUDY COMPANY

This project was carried out at Uganda Fishnet Manufacturers (UMF) Limited which is a Private Limited Company, started its operations in 1960s as an import substitute for fishnets. UMF is part of Aga Khan Fund for Economic Development (AKFED) and works under AKFEDs Industrial wing Industrial Promotion Services (Uganda) Ltd (IPS). Established in 1964, Uganda Fishnet Manufacturers Limited (UFM) is one of the largest manufacturers of fishing nets in East Africa with a production capacity of over 750 metric tons per year.

UFM employs more than 180 staff majority of whom are women and contributes to the socio-economic development of Uganda, including natural resource conservation.

In terms of production capacity, UFM has, since the 1990s, embarked on upgrading the factory by acquiring the modern manufacturing technology and international equipment. This has translated into the production of fishing nets that meet international standards. The UFM fishing nets fit within the parameters set by Government of Uganda through the *Ministry of Agriculture, Animal Industry and Fisheries (MAAIF)* on fishing nets allowable for use on Uganda's water bodies.

UFM manufactures fishnets from only Nylon which does not disintegrate when in water. This allows the fishermen to use the nets for a long time, but also allows for proper disposal, a key environmental control measure.

UFM's main products are fishing nets and twines. UFM manufactures fishing nets under the popular brand name, **Simba**, with the popular tag name, "*nguvu sana*" while the "*Simba net*" is a registered trade mark, an indication of high quality, authenticity and consistency.

Gill nets: These are made from pure nylon and come in various types;

- a) Thickness/plies of 3, 4, 6, 8, 9, 12, 15, 18, 21 and 24;
- b) Various mesh sizes; such as 5¹/₂, 6, 9.

Cage nets: Cages varying in sizes are made for fish farmers for growing fish.

Seine nets: These are especially used by pond fish farmers:

REFERENCES

1. Dr Carolin Richter, Deutscher Wetterdienst (2001), the applicability of total quality management to NMHSS in developing countries
2. The Importance of Quality Management, 2010.
3. An Empirical Investigation of Their Impact on Performance." *Quality Management Journal*, Vol. 6, No. 3, 1999, pp. 34-49.
4. Ambroz, M. (2004). Total quality system as a product of the empowered corporate culture. *The TQM Magazine*, Vol. 16. No. 2, pp. 93-104.
5. *International Journal of Quality & Reliability Management*, Vol. 19 No.3, pp.272-94.
6. Dotchin, J.A., Oakland, J.S. (1994). "Total quality management in services, part 2: service quality": *International Journal of Quality & Reliability Management*, Vol. 11 No.3, pp.27-42.
7. Bartol, Kathryn, M. and Srivastava Abhishek. 2002. Encouraging knowledge sharing: the role of organizational reward systems. *Journal of Leadership and Organizational Studies*. Vol. 9 (No.1), p. 64 76.
8. Feigenbaum A. *Total Quality Control*, McGraw-Hill, New York; 1956. Juran J. *Managerial Breakthrough*, McGraw-Hill, New York; 1964.
9. Ang, C. L., Davies, M. and Finlay, P N. (2000). Measures to assess the impact of information technology on quality management, *International Journal of Quality and Reliability Management*, Vol. 17, No. 1, pp. 42-65.
10. Arditi, D., and Gunayadin, H.M. (1998). Factors that affect process quality, in the life cycle of building.
11. Arthur R, Tenner and Irving J, De Toro, *Total Quality Management: Three steps to continuous improvement*, Addison Wesley Publishing Company, Inc., 1992.
12. Brown, A., *Industrial Experience with TQM Management*, *Total Quality Management*, Vol, 3, No.2, pp-147-156, 1992.

13. Deming W. Quality, Productivity and Competitive Position, MIT, Center for Advanced Engineering Study, Cambridge, MA; 1982.
14. Kossoff L. Total quality or total chaos? HR Magazine. 1993; 38(4):131-4.
15. Powell TC. Total quality management as competitive advantage: a review and empirical study. Strategic Management Journal. 1995; 16(1):15-37.
16. Williams RI. Essentials of Total Quality Management, A Work smart Series, New York, NY; 1994.
17. Bayazit, O. Total quality management (TQM) practices in Turkish manufacturing organizations. The TQM Magazine. 2003; 15(5):345-50.
18. Deming WE. Out of the Crisis, MIT Centre for Advanced Engineering Study, Cambridge, MA; 1986.
19. Crosby, Philip B. Quality is Free: The Art of Making Quality Certain. New York: New American Library; 1979.
20. Ishikawa K. What Is Total Quality Control? The Japanese Way, Prentice-Hall, London; 1985.
21. Juran J. Made in USA: a Renaissance in quality. Harvard Business Review. 1993; pg42-50
22. Zhihai Zhang, Ab Waszink, Jacob Wijngaard. An instrument for measuring TQM Implementation for Chinese manufacturing companies. International Journal of Quality & Reliability Management. 2000; 17(7):pg730-755.
23. Brown MG, Hitchcock DE, Willard ML. Why TQM Fails and What to Do about It, Irwin, Burr Ridge, IL; 1994.
24. Porter LJ, Parker AJ. Total Quality Management-critical success factors. Total Quality Management. 1993; 4: pg. 13-22.
25. Muhammad mubaraki, PhD application of total quality management principles in small and medims validation of TQM implementation constructs. *Decision Sciences*, Vol. 27.