

# Framework for Decision Support Tool for Quality Control and Management in Botswana Manufacturing Companies

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## Abstract

The pressure from globalisation has made manufacturing organisations to move towards three major competitive arenas: quality, cost, and responsiveness. Quality is a universal value and has become a global issue. In order to survive and be able to provide customers with good products, manufacturing organisations' supporting systems, tools, and structures it uses must grow or evolve. The majority of quality management concepts and strategies that are practiced recently are aimed at detecting and correcting problems which already exist and serve to limit losses. In agile manufacturing environment there is no room for defect and error so it needs a quality management which is proactively directed at problem prevention. This proactive quality management avoids losses by focusing on failure prevention, virtual elimination of the possibility of premature failure, mistake-proofing, and assuring consistently high quality in the definition and design of creation processes. To achieve this a Decision Support Tool for Quality Control and Management is suggested. Current decision support tools/methods used by most manufacturing companies in Botswana for quality management and control are not integrated, for example they are not consistent since some tests results data is recorded manually only whilst others are recorded electronically. It is only a set of procedures not a tool. These procedures cannot offer interactive decision support. This point brings to light the aim of this research which is to develop a framework which will help manufacturing companies in Botswana build a decision support tool for quality control and management.

## Keywords

Decision support tool, manufacturing, quality control, quality management

## Biography

**Mogale Sabone** is currently a fulltime research student at the Botswana International University of Science and Technology in the Department of Mechanical, Energy and Industrial Engineering. Mr. Sabone holds a Bachelor of Engineering degree in Industrial Engineering from University of Botswana and is currently pursuing a Master of Engineering degree in Industrial and Manufacturing Engineering from Botswana International University of Science and Technology. His research interests include manufacturing, simulation, value stream mapping production performance, quality control, lean manufacturing.