Midlands State University

FACULTY OF COMMERCE

DEPARTMENT OF MARKETING MANAGEMENT

AN EVALUATION OF THE QUALITY CONTROL SYSTEMS USED IN THE SHOES, LEATHER AND ALLIED PRODUCTS INDUSTRY; A CASE STUDY OF THE ZIMBABWE BATA SHOE COMPANY, GWERU

BY

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A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS OF THE BACHELOR OF COMMERCE MARKETING HONOURS DEGREE AT MIDLANDS STATE UNIVERSITY.

OCTOBER 2014

GWERU, ZIMBABWE

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Degree Title	Bachelor of Commerce in Marketing Management Honours Degree
Year this Degree granted	2014

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DEDICATIONS

This research is dedicated to my grand-daughter Hailey Bones who I deprived of television viewership or would only watch voiceless but moving pictures on television during the times I was doing my studies.

ACKNOWLEDGEMENTS

Special mention goes to the gentleman who supervised my dissertation. He would leave his busy schedule to guide and assist me throughout the research period. I give sincere gratitude to my wife and children for the support and encouragement they gave me. At some point in time I had made up my mind to quit the programme my family would have none of it. Mission impossible has become mission accomplished. There are a lot of other people that I would also like to thank but I will not mention their names because they preferred anonymity.

ABSTRACT

This research was undertaken to evaluate the quality control system used by The Zimbabwe Bata Shoe Company Gweru. The study was motivated by challenges that the company is facing particularly in its School shoe category which include loss in market share, decline in sales volumes and increase in the amount of rejects. The main objectives of the study were to establish the factors causing the major quality problems in the school shoes category. Moreover the study also sought to investigate the impact of worker participation on improving the quality of school shoes. Finally it also sought to establish the effect of Bata's financial reward system on quality of productivity. Various literatures in the area of quality control as well as employee participation and the reward system were reviewed and most of it came from textbooks, journals and other online resources. The research design used for this study was a combination of exploratory and descriptive research. The major instruments of the study were questionnaires and interviews which yielded both qualitative and quantitative data. In terms of data analysis both qualitative and quantitative approaches were used. The study found out that major causes of quality problems at Bata shoe manufacturing company are poor raw materials, lack of skilled personnel, power outages, water shortages and old machinery. Majority of respondent's interview indicated that the company has adequate control mechanisms in place for ensuring raw materials, processes and the final product meets the accepted standards. Employee participation at Bata Shoe Company has an impact on improving quality of products as it emerged that managers are reluctant to implement views of employees and is done informally, not planned and is not given adequate time. The study revealed that rewards systems have a positive impact on quality of productivity. The study recommends the company to consider horizontal collaboration with suppliers and also improving on employee participation.

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LIST OF ACRONYMS AND DEFINATION OF TERMS

SPM- Standard production per minute.

Tannery- Place where hides are processed into leather

Blooming- Discolouration of material due to improper processing

Sole Lifting- Separation of bond between upper and bottom materials of a shoe

Upper- The top part of a shoe

Sole- The bottom part of a shoe

Last- The solid form around which a shoe is moulded

Lasting- Pulling of the upper of the shoe down over a last and evenly adhering it to the insole that has been tacked to the underside of the la

Toe Lasting- Pulling of the shoe upper at the front or toe area of the shoe moulding it around the last

Side lasting- Pulling of the sides of the shoe upper keeping the upper at the same height but molding it and adhering it to the insole

Seat/lasting- Pulling of the shoe upper at the heel area molding and ensuring the upper is finally set correctly on the last before the sole is put

CHAPTER 1
GENERAL INTRODUCTION

1.0Introduction

This research is about control systems in the shoe manufacturing sector of which Bata Shoe Company is a case study. This chapter provides the reader with an overview of the research area which include, background analysis, statement of the problem, Objectives, assumptions as well as limitations of the study. Research boundaries are also spelt out in this chapter.

1.1Background to the study

The Zimbabwe Bata Shoe Company is the largest footwear manufacturing company and retail footwear giant in Zimbabwe. The company was established in 1939 in the City of Gweru. Bata is a multi-national family owned company. Gweru was chosen as the site for establishing this company because of its geographical central position, rail and road networks for easy transportation of finished goods, raw materials, good weather suitable for canvas footwear business, cattle farming as a source of hides and an economic hub due to the surrounding mining towns of Kwekwe, Shurugwi, Shangani, Lalapanzi and Zvishavane. Before relocating to its current position in the heavy industrial sites, Bata's original location is where Meikles Departmental Store is today. The relocation was prompted by the expansion of the central business area of the City of Gweru.

The company makes shoes for all walks of life. Bata produces the Toughees brand of school shoes, Weinbrenner brand, Tomy takkies, gumboots, safety shoes, army boots, police boots, security and guard boots, and for sports, the North Star brand of shoes. The company exports some of its products to Zambia, Malawi, Botswana, Namibia and South Africa. Before the year 2000 Bata had 144 retail outlets and depots in Zimbabwe. Today the company has only 45 retail stores and 5 depots. Of the 45 retail stores, for time immemorial, it has been the Gweru factory outlet that had been dedicated for selling factory seconds or rejected footwear. Now Bata stores like Bank Street in Harare and the Chitungwiza branch also sell factory seconds (rejects) because of the increase in footwear rejects. It is however not any cheaper to produce factory seconds than good quality shoes as these rejects have to be sold at a discount of 30%. The greater the number

of factory seconds (rejects) produced, the greater the loss in sales margin. The company also sells directly to other retailers, distributors, wholesalers, government departments and all other institutions through its non-retail sales division. Bata has over 350 clients on its non-retail sales customer database but 49 are now the only active accounts all due to the current economic meltdown in Zimbabwe. Bata imports more than 200 000 pairs of shoes annually. These shoes are imported from India, Pakistan, China, South Africa and Kenya.

At its peak Bata used to produce 65,000 pairs of footwear per day and selling 16 000 000 pairs of shoes annually. Bata employed 4500 people at the time and currently the company is producing 65000 pairs per week and employing 1431 people. This year's footwear sales target is 3 000 000 pairs. The factory's current capacity utilization at Bata is 30%. In the past the company had a market share of 80% and today the market share is only 25%. Most of the best brains Bata had left for greener pastures and had to be replaced by the company's loyal servants. For its survival Bata resorted to producing footwear with any available piece of substitute material and with no specifications because the customers at the time were unable to make choices due to scarcity of products on the market.

Bata has its own Training Centre where it used to train its employees in all fields of its footwear business. Some of its employees would be sent overseas on training at various colleges or on exchange programs with other companies within the Bata Shoe Organization. The training centre at Bata Gweru has been closed and the company relies on on-the-job training. Only a handful of its employees manage to get outside company sponsored training. The company has now embarked on employing already qualified people in managerial positions and keeps on training those already trained.

Zimbabwe has abandoned its currency and is using the multi currency system and customers now expect to buy quality products because raw materials and finished products can be sourced from anywhere around the world with ease. Bata imports 80% of its raw materials from such countries as Germany, Italy, North Korea, Sri-Lanka, Malaysia, South Africa, Botswana and Malawi to name a few. Where raw materials and components are locally available Bata would want to buy from local producers in support of local industries but some of the suppliers are a let-down and at times due to no fault of theirs. At times these companies experience power outages and water shortages which effectively affect Bata's operations when they delay deliveries. Bata's local raw

material suppliers are Hwange colliery, Cold Storage Commission, Prime Soles Pvt. Ltd, Kadoma Textiles, King Fisher Fabrics, and James North. Bata also buys hides from local abattoirs and individuals who may have them.

Bata faces stiff competition from local footwear manufacturers such as Superior Footwear, Marelli Footwear, Tripple Tee, Bendek Shoes, Conte Shoes, Dos Santos, Goksel, Main Protective Clothing, Karasons, Junoob Enterprises, Navina Footwear and other direct footwear importers. Flea markets are sprouting everywhere with their cheap offerings. There has also been a proliferation of several retail stores in the footwear trade selling mainly imported footwear and that has increased competition on the market. Competitive pressure has necessitated companies like Bata to embark on managing quality through defect free products to meet specifications of the target market. In recent times Bata bought few new machines but the majority of its machines are obsolete with major problems coming from the tannery where there are constant machine breakdowns. When the machines are repaired the workers engage in overtime work to catch up with production requirements. The downside is that when forced to work overtime employees easily burnout leaving them exhausted and stressed. Going to work will no longer be motivating and this leads to decreased performance and productivity. Tired and drained employees are unable to perform at their full capacity and so the products are of poor quality.

The Zimbabwe Bata Shoe Company has introduced Associated Business Units (ABUs) in an effort to increase its stitching capacity for footwear uppers. This decision was made as a cost cutting measure in this highly competitive business environment. These ABUs are making use of Bata's idle machines since the current utilization capacity at Bata is 30%. ABUs are about empowering the community Bata does business in. ABUs are a partnership between Bata and independent people from the Gweru community. Bata provides these ABUs with raw materials, machinery, technicians to repair the machines and even manpower to guide them in the production of uppers. The partners are only providing labour and buildings and Bata pays them for the labour costs per every pair made. These ABUs make 15000 pairs of uppers per week and deliver the finished uppers daily in accordance with Bata's daily production specifications.

Quality management has become one of the most reliable marketing strategies for improving a firm's productivity and competitiveness. Researches on quality management are not new and

many studies in quality management exist and for instance researches done in the world motor industry. Toyota recalled more than 8 million cars worldwide for various quality problems between 2009 and 2010 (Taylor, 2012). The quality problems and the subsequent recalls led to financial losses for Toyota and its dealers, lawsuits and negative publicity. There are other product recalls by BMW and Honda (BBC News, 2011; Reuters, 2012a). These renowned companies in the automobile industry did this to restore customer confidence and maintain good relations. There is however little evidence to suggest that a similar research was carried out in the Footwear, Leather and Allied Products Industry, especially in Zimbabwe. This has triggered the researcher's interest in carrying out a research based on managing quality, a strategy for firm competitiveness at the Zimbabwe Bata Shoe Company in Gweru.

Bata's employees who work directly on production lines are paid incentive bonuses according to Standard Production per Minutes (SPM). SPMs are work factor time units. According to work factor calculations 1 minute or 60 seconds is equivalent to 10 000 SPMs. The SPM is said to be the time taken by an average experienced operator working with good skill and effort to produce good quality. The company made a ruling that no bonus is paid for producing defective footwear even if the daily quantity produced is correct. Bata is into footwear mass production.

Furthermore the researcher spent 33 years working for the Zimbabwe Bata Shoe Company and went through various sections in which a number of quality concerns such as improper toe, side, and heel lasting, poor shoe fitting, cracked soles after a short period of wear, sole lifting, questionable genuineness of materials used, source of origin for raw materials and quality of finished products among others have been raised by customers. This created much interest to conduct a study based on managing quality at the Zimbabwe Bata Shoe Company Gweru particularly on the Toughees and Weinbrenner brands of school shoes. While Bata produces a wide range of shoe styles, school shoes are considered in this study as they constitute 30% of Bata's business. The acceptable level of factory seconds (rejects) at Bata is 1.5% yet currently it is 6%. At least 3 000 000 children go to school in Zimbabwe and that is a huge market to capture and satisfy. Moreover, Zimbabwe is a developing country that went through economic challenges for the past decade in which most parents, especially those in the rural areas are

finding it very difficult to raise money to buy school shoes hence the need for the Zimbabwe Bata Shoe Company to produce quality shoes based on durability.

1.2 Statement of the problem

This study sought to understand why Bata has in the past decade been experiencing many challenges chief among them, high rate of product returns in the Toughees and Weinbrenner school shoes. There has been a high rate of defective shoes resulting in depressed sales, complaints from customers in terms of lack of durability, blooming of soles and upper materials, cracked soles as well as the general uncompetitiveness in the domestic school shoes market. Competition has greatly increased in the school shoes category and clients who used to stock only Bata products have started stocking footwear distributed by other suppliers. The set standard of defective footwear which is 1.5% has quadrupled in recent times. For its survival and prosperity Bata needs to curtail the level of defective footwear. How effective is Bata's quality control system?

1.3 Research objectives

- To establish the factors causing the major quality problems in the school shoes category.
- To investigate the impact of worker participation on improving the quality of school shoes.
- To assess if the reward system has a relationship with the poor quality in the school shoes production.

1.4 Research questions

- How can the nature of complaints from customers, distributors and wholesalers help in improving the quality of school shoes?
- What causes such a high rate of factory seconds?
- How will worker participation improve the quality of school shoes?
- What effect does the reward system have on the quality of school shoes?

1.5 Significance of the study

To the Company

The research would help the company to understand the problems they might have in the company which needed to be addressed in order to improve product quality. The problem could be a training need on the part of the employees. The company would also be able to evaluate its suppliers of raw materials and its formulations. Bata would be able to increase its workforce, have a low labour turnover, increased customer satisfaction, increased market share and loss reduction. This research would inform the company of the importance of building strong relationships with suppliers.

To the researcher

The study would provide the researcher with the opportunity to share knowledge with those who may decide to carry out further studies and to reveal areas that the organization might have taken for granted and ignored.

To the University

The study would serve as a reference for further study on quality management by other students and for other students to understand how companies in Zimbabwe manage quality.

1.6 Assumptions

- The researcher assumed that lack of employee empowerment could be causing a high risk of factory seconds.
- The researcher also assumed that mobility of management could be causing the high rate of factory seconds.
- The researcher would not face language problems since all distributors, wholesalers and suppliers understand the English language.
- Use of the multi-currency system would not change during the research period.
- The indigenization policy would not affect Bata's business operations till the end of the study.

1.7 Delimitations

- The study was conducted at the Bata shoe factory and schools in and around Gweru.
- The research was concentrated on the period from 2009 to date.
- The research was focused on management, staff, suppliers, distributors and customers.
- The study focused on customer complaints.

1.8 Limitations

- The sample size used was limited but the researcher made sure it was enough to represent views the whole target population.
- This research relied mainly on the descriptive research design hence different results would occur if another research design like causal was used in the same research.

Side lasting- Pulling of the sides of the shoe upper keeping the upper at the same height but molding it and adhering it to the insole

Seat/ lasting-Pulling of the shoe upper at the heel area molding and ensuring the

upper is finally set correctly on the last before the sole is put.

1.9 Summary

In this section of the study all the areas of the research were highlighted. Pertinent questions were laid down and squarely matched to the objectives. The limitations, delimitations, and assumptions to the study were stated.

CHAPTER TWO

LITERATURE REVIEW

2:0 Introduction

Becser 2007 sees literature review as the theoretical foundation of a study. This study centres on quality control systems in the shoe manufacturing sector. It starts by evolution of quality management and then quickly jumps to defining the quality concept. Various authors' views concerning quality control, its different types as well as different quality tools are also reviewed. Literature on worker participation was critically evaluated together with the impact of reward systems on quality. The chapter concludes by a reviewing literature on different types of reward systems.

2:1 Evolution of quality management

To understand anything in life it is usually recommended that its historical evolution must be studied. The understanding of human being behaviour and other things is largely credited to the Darwenism theory of evolution. From this line of thinking it goes without saying that in this study of quality control systems in the shoe manufacturing industry there is need to initially explore how quality came into being. There is a general consensus among authors in regard to how quality came into being. The evolution of quality management according to several authors such as Mandal et, al (1998) went through 4 stages namely quality inspection phase, quality control phase, quality assurance and then the total quality management phase

In regard to the literature there seems to be no disagreements in terms of how quality came into being. Many authors among them Chandler & McEvoy (2000), highlighted that quality has been in existence since time immemorial, but deliberate efforts for quality was largely seen during the advent of industrial revolution and the emphasis was on product rather than process. And among the companies which practiced it was Ford Motors around 1910 when they first rolled their first car out of the production line (Chandler& McEvoy 2000), many companies according to Allen & Kilmann (2001) started employing teams of a inspectors and this stage is widely quoted as the inspection stage. This is supported by Guthrie (2001) who also gave some of the main duties of inspectors by noting that among the main duties these inspectors were tasked to inspect poor

quality goods and separate them from those with acceptable features. This kind of quality is still very prevalent in the Zimbabwe shoe manufacturing industry. In terms of how the company deals with those products which did not meet quality standards Hendricks and Singhal, (2001) indicated that they were either scrapped, reworked or simply sold to customers at lower prices. This is true if one considers the fact that Bata Shoe Company which is the main shoe manufacturing company in Zimbabwe actually established a retail outlet at its plant in order to sell what has come to be known as factory seconds (rejects).

Due to further progress in the pace of industrialisation there was a shift from inspection to quality control. The role of quality shifted from product to processes and systems in an organisation quality control was done at the end of the production process to detect defective products from reaching the consumer. This is also supported by Hendricks and Singhal (2001) who indicated that quality control ensured that defective products do not leave the factory gate. These authors therefore imply that products which did not meet the required standards represented a cost to the organisation. This period started around 1920 to 1940.

Greenwood and Gaunt (1994) point out that soon after World War II there was a shift to quality assurance. Liston (1999) noted that in quality assurance the responsibility of quality came back to the employees but in this case it was in a more systematic and accountable manner. Additionally Howard and Darren (2000) highlighted that the whole idea of quality assurance was to ensure that no defective products are produced in the first place. In support of this Kemp(2005) indicated that the similarity of this stage with previous stages rests in the fact that quality assurance include all the other stages and its main goal is to provide sufficient confidence that the products will satisfy the customer needs. To further bring an understanding of this stage in quality evolution Bhat (2010) noted that quality assurance represented a paradigm shift from detection activities to preventative measures. This suggested therefore that the task within an organisation was no longer to detect defects from quality products but to prevent them from happening in the first place.

The final stage in quality development is called the Total Quality Management (TQM). The ‘total’ dimension of this quality management philosophy comes from the fact that this stage gives the responsibility of quality to everyone within the organisation. The growth of this philosophy is credited to the works of various experts chief among them being Dr Edward

Deming, Dr Joseph Juran and Philip Crosby. Having explored how quality evolved it is fair at this juncture to explore the meaning of quality.

2:1:1The definition of quality

There are so many definitions of quality as are the authors who care to define it. Additionally Davis et al, (2003) noted that quality means different things to different people and organisations. One of the quite interesting definitions of quality was one proposed by Stewart (1997) that quality is anything that can be improved. Interesting as it may Stewart brought the aspect of improvement in the definition of quality, thus if a product or service has an allowance of being improved it is not a quality product. The other definition of quality is one provided by the British standard BS4778 which highlighted that quality is the totality of features and characteristics of a product or service that bear its ability to satisfy a given need. This definition seems to be in line with the marketing concept since from this definition any organisation that is able to identify customer needs and provide a product with features that satisfy that need is a quality oriented organisation.

Juran, one of the notable gurus of quality defined it as fitness for use, (Juran 1988). Though this definition has been widely criticised it brought more understanding to the concept of quality. From this definition a product is not a quality product unless it has been tested and proved that it is fit for use. The greatest weakness of Juran's definition is found in its failure to capture the voice of the customer in that a product can be fit for use but can be disapproved by the customer. To counter the weakness of Juran's definition another quality guru Crosby indicated that quality is actually conformance to specification (Crosby 1979). A more or less similar definition is one from Peters (1999) that quality is a magic bullet and lies in the eyes of the beholder. One theme which cuts across these definitions is that if an organisation sticks to the requirements of the customer in its manufacturing processes the end product will be a quality product. The challenge of this definition is however found on its use of 'requirements' as it is very difficult to know exactly in reality to measure the extent to which a product meets requirements, by the same argument Stewart (1997) added that customers again may be unable to define the product, specific terms what they really want.

A more comprehensive definition of quality was one provided by Macdonald and Piggott (1990) that quality is delighting the customer by continuously meeting and improving upon agreed requirements. This view is also supported by Harrington (1987) the term excellence is never ending and good is not good enough, this author suggested that good should be better and better best and so on. This definition has received wide appreciation among authors because apart from acknowledging the importance of customer requirements in defining quality it urges service providers to look beyond customer requirements and delight the customer.

The greatest shortfall found in all the above definition is their consideration of the customer as the only stakeholder deserving quality with less bias on other stakeholders. To counter Karapetrovic (2003) brought a new dimension to quality by indicating that quality represents the ability of an organisation to deliver excellence to all interested parties. As can be seen above the quality definitions are ongoing with new authors bringing new definitions, in line with this Garvin (1980 cited in Rao et al, 1996) searched for a common ground in all quality definitions and highlighted that quality definitions fall into 5 main categories namely the transcendent, product-based, user-based, manufacturing based and value based. In transcendent category of quality definitions here quality means reaching the highest standards available.

Harrington (1987) supported this and indicated that this kind of quality is very common in the field of fine art and literature work. Product definitions are those which define quality in terms of a product's ability to have certain measurable features. The user based definition places the customer as the person who determines whether a product is of quality of not. The manufacturing based approach was popularised by quality gurus such as Crosby, that is the product or service must meet certain requirements.

2:1:2 Quality in the manufacturing sector-quality control

Several authors among them Dale, Boaden and, Lascelles (1994) indicated that many researches on quality and even many definitions are only applicable in the manufacturing sector. These authors further noted that although the research on quality has for long been concentrating in the manufacturing sector many organisations are still pursuing the conventional approaches to quality. This view is also supported by the fact that in many manufacturing companies especially in African countries, many companies still use quality control in guaranteeing quality of their

products. This is true and in this study, it is also acknowledged that in Zimbabwe, Bata Shoe Company which is one of the largest shoe manufacturing companies also uses this conventional method of managing quality. This section thus seeks to review literature in regard to quality control systems.

In regard to quality control many authors acknowledge that it is an ancient way of managing quality. This is supported by Macdonald and Piggott (1990) who indicated that quality control is the oldest concept of managing quality which is however in contrast with authors such as Wadsworth, *et al (*2002) who noted that quality inspection is the oldest quality management concept. Apart from this disagreement these authors acknowledged that quality management has since evolved from quality control to other contemporary philosophies such as Total Quality Management.

By definition Juran (1988) noted that quality control is a regulatory process through which organisations measure quality performance, compare it with standards and act on the difference. Additionally Lascelles (1994) indicated that this process is more concerned with checking and reviewing what would have already been done. The similarity in the above definitions is that of the acknowledgement of the fact that quality control comes after goods have been produced. This fact is very clear in Sallis (1996) assertions that quality control is an after–the-event process. ISO 8402, 1994 highlights that quality control are operational techniques and activities that are used to fulfil quality requirements. The greatest challenge of this system however, is found in its shelving of the quality responsibility to inspectors yet quality should be a responsibility of everyone in the organisation. The other challenge is also found in its reliance on eliminating defects after they have already occurred. Dale, Boaden and, Lascelles (1994), noted that the act of solving of a problem after a non-conformance issue has been created is not an effective route towards eliminating the root cause of a quality problem.

2:1:3 Types of quality control

Having described the quality control systems it is important at this juncture to explore different types of quality control. There seems to be a consensus among authors notably Schermerhorn (2010) when it comes to the types of quality control. Quality control comes in three types

Lascelles (1994) indicated that quality control can either be feed-forward, concurrent and feedback. This study aims to bring more knowledge in regard to the application of these types of control in the shoe manufacturing sector of Zimbabwe.

Feed forward control.

According to Schermerhorn (2010) this approach is proactive as it takes place before production. This is in sharp contrast with views of so many authors in quality management who all acknowledged that quality control happens after production and is reactive. In support of this Bedward (1997) highlighted that feed forward control looks at issues such as employee training, procedures and purchasing to ensure that problems will not occur. All these authors seem to agree on the fact that feed forward control compels organisations to ensure that everything is in the right place to ensure no quality related problems. In this study of the control systems in the manufacturing sector, more knowledge shall be uncovered in regard to how feed forward controls are implemented as well as the challenges being encountered in pursuing this control mechanism.

Concurrent control

This type of control as the name suggests ensures that control activities are done while the production process is on-going. This view is supported by Bell, *et al* (1994) who noted that concurrent control is done during production process and is done whilst employees are doing their job. This control seems to be very common in industries where supervisors always walk around and are always on the look-out for conformance. However the greatest weakness of this strategy is that employees may end up working hard in the presence of supervisors and relax in their absence. The goal of this type of control as cited by Dean and Bowen (1994) is to solve the problem when it occurs and ensure that people do their job in conformance with the plan. From the authors cited above concurrent control requires the creation of a plan of how things will be done and when production will be taking place and there will be others with the task of ensuring that everyone is working as planned. This type of control thus places quality responsibility in the hands of few individuals as opposed to the TQM philosophy which champions that quality should be for everyone in the organisation. This study therefore explored how managers view

this control mechanism and whether it has an impact in improving quality in the shoe manufacturing sector.

Feed-back control

This method seeks to find out whether the goods produced meet the set standard. This type of control is the most widely understood as its definition seems to agree with what many authors imply to be the real meaning of quality control. In terms of its application, Bell, *et al* (1994) noted that in this type of control, managers encourage the collection of mistake records for future learning that will provide valuable input in the future process. Furthermore Dale and Cooper (1993) indicated that the practice of waiting for mistakes to happen instead of eradicating them before they occur is one of the greatest weaknesses of this method. While this type of control is acknowledged by a variety of authors, this study will explore how this control mechanism is being practised in the Shoe manufacturing sector in Zimbabwe and the challenges that manufacturers are facing.

2:1:4 Quality control tools for manufacturers

Having reviewed what different authors say about quality control as well as different types of quality control it is important to analyse different quality control tools available for a manufacturer to improve quality control. In support of this the father of quality circles, Ishikawa (1956) argued that 95% of quality problems that organisations face can be solved by use of quality control tools. Ishikawa thus apart from championing quality circles, is also credited with providing a quality control tool kit to cater for the simple mind. This aspect of simplicity makes these tools a favourite of many managers. Moreover, Cross and Leonard (1994) noted that these tools simplify the quality control task as they require less statistical calculations. The following section thus deals with views from different authors with regard to quality control tools that were developed to support quality control.

Control charts

One of the most effective tools of quality control is the control chart. According to Schermerhorn (2010) this tool was adapted from the Deming principles. The essence of this chart according to

Cross and Leonard (1994) is that it shows limits of quality acceptance or unacceptance levels upon which management should take action. In support of this, Dale and Lascelles (1997) noted that this chart has an upper control and a lower control level and the centre line represents average acceptable quality levels. The way this chart functions is that samples of different batches are drawn randomly and if sample characteristics are in between the upper limit and the lower limit quality will be acceptable. Management attention will only be drawn when sample characteristics falls below the lower limit. Chunawalla (2008) however, indicated that the success of this method rests on the management's ability to constantly ensure that samples are brought for monitoring. The greatest weakness however is that the method does not consider the customers' view of quality in that the upper or lower limits accepted by the company may be rejected by the customer. This study will explore the prevalence of these control tools and challenges faced by managers in using them to control quality.

The fishbone diagrams

These control tools were popularised by Ishikawa (1956) and are popularly known as the Ishikawa diagrams. The tool got its name from its resemblance of a fish skeleton. This control tool according to Chunawalla (2008) does not involve any statistical calculation, a view which is also supported by Giri (2010) who noted that these control tools are easy to construct as they simply show a relationship between quality problems and their potential causes. Giri also praised this diagram with regard to its ability to give managers a vivid picture of the root cause of the quality problems that will enable them to make amendments at the right places. While fishbone diagrams have been praised by many authors, this study shall bring knowledge in regard to their applicability in the shoe manufacturing sector in Zimbabwe as well as the weaknesses they have.

Check sheets.

This is another important quality control tool that can be used in the manufacturing sector. The importance of this document comes from one fact that was noted by Schneiderman (2006) that the collection of data for quality purposes can be so messy and so confusing. This challenge is the one solved by this tool for Giri (2010) who noted that this tool is just a document that enables the organisation to collect quality control related data clearly and in detail, more over Chunawalla (2008) highlighted that this control tool enables data to be grouped in clearly spelt

categories which enables it to be traced in future. All these authors seem to agree on the fact that check sheets are easy to present data. Moreover the tool is applied to manage the frequency and sources of problems occur. The tool in the shoe manufacturing sector shall be explored in this study

Process flow chart

As the name suggests this chart according to Sethi (2004), is a pictorial representation of a process. Schneiderman (2006) also in support of the above highlighted that process flow chart is a chart that records major decisions and activities which represent major highlights of a process at different stages. Apart from this tool being so effective in simplifying quality control Dale and Lascelles (1997) brought one important word of caution by indicating that the production of a process flow chart should not be a preserve a single manager. This is largely because a manager does not run the process alone but with a number of other supporting employees in this regard this author suggests that in the creation of a process flow chart there must be involvement and participation of everyone involved in the process.

Pareto analysis

This is the other very common quality control tool. In terms of presentation the tool is just like a histogram (Schneiderman (2006) with the only difference being in the incorporation of the 80/20 rule. In terms of its key emphasis Chunawalla (2008) noted that Pareto analysis brings to the attention of managers quality problems that occur often and encourages managers to focus with them first as they have the greatest impact on the operation of an organisation. While analysis has been praised by many authors, this study shall bring knowledge in regard to their applicability in the shoe manufacturing sector in Zimbabwe as well as the weaknesses they have.

Histograms

This is widely common tool not only in quality control but in other general analysis of data. Sethi (2004) indicated that a histogram is a chart used to present interrelated data. Moreover Dahlguard et al (1999***)*** also indicated that histograms are usually based on statistics such as mean, minimum and maximum values of variables data which is very important in enabling managers to make quality decisions. Though the contributions of the above authors seem to vary

they agree on the fact that histograms are used to compare data. In this study of the quality control system, the prevalence of the use of histograms as a quality control tool shall be analysed.

Scatter diagrams

Sethi (2004) highlighted that these control tools are commonly used by managers in need of finding relationships between independent and dependent variables. Dahlguard et al (1999) also noted that unlike in the fishbone diagrams which show whether one viable is a cause or not, this tool just shows the existence of relationship. More over Dale et, al (1994) indicated that in terms of its construction the tool consists of horizontal axis and the vertical axis representing the variables. Closely grouped dots represent a relationship while spaced dots signify no relationship. While the above authors agree on describing scatter diagrams, none among them chose to indicate the applicability of this quality control tool in quality control. Findings on this study shall also contribute knowledge pertaining to the applicability of this tool in the shoe manufacturing sector.

2:2 Employee participation

Grant et al., (1994) made a very interesting contribution in regard to participation of employees in quality initiatives by emphasising that any business has three building blocks namely hardware, software, and 'human-ware'. TQM starts with 'human-ware'. Only when the human aspects have been taken care of can the firm start to consider the hardware and software aspects. There are also other several authors who have emphasised the importance of employee participation in the success of all quality endeavours. Little et al.,(2002) indicated that enterprises cannot be changed without involving the workforce and if such a statement is analysed in conjunction with Stewart (1997) assertions that quality represent a paradigm shift from old ways to news ways of doing business, it goes without saying that worker participation is key in bringing success to quality programmes. This view is supported by Giri (2010) who highlighted that quality management can only be successful when there is participation of everyone within the organisation. Managers for long have been attributing poor quality products and other quality problems to their workforce as Grant et al., (1994) noted in their studies. Many such managers

noted that quality challenges normally occur largely because of failure by the workforce to perform duties according to the set standards. In line with this Godard (2004) made a very interesting observation and indicated that the responsibility of quality problems can only be levelled to the workforce when an organisation has done everything in its power to ensure that the employees know clearly what they are supposed to do and are aware of the desired quality levels. All this point to the criticality of worker participation to all quality programmes.

The idea of employee participation in quality programmes is according to Lozano (1980) built on the belief that the people closest to the work are more knowledgeable on how to improve it. From this author employee participation is a way through which an organisation in the leather manufacturing sector may tape on the knowledge of employees close to work situations. Literature is amass with benefits of employee participation in quality programmes in the manufacturing industries with Maheshwari (1987) highlighting that employee participation lead to a more acceptance of change by employees and become more knowledgeable about firms' new ideas. Other authors such as Mathew (1991) also indicated that employee participation results in employee satisfaction and is an aid to decision making as there is a common belief that group decisions are more effective than individual decisions because they represent multiple viewpoints. Although these authors gave different viewpoints one common theme has been their appreciation of the importance of employee participation in organisational programs a fact which makes this concept important in quality management as quality in itself is a paradigm shift from old ways to new ways of doing business and thus can be viewed as a change programme.

2:2:1 Quality circles as an aid to employee participation in the manufacturing sector

There is widespread acknowledgement among authors such as Lozano and Thompson (1980) that quality circles is the most widely used way of boosting employee participation in quality initiatives of many organisations. In terms of their origin Juran (1980) highlighted that they rose to prominence as a response the existence of a highly demanding and sophisticated workforce and a very competitive market environment. Thus faced by this sophisticated workforce and competitive pressures which by implications means an increase in production and production of high quality goods firms were forced to device structures solely dedicated to house participative activities in the organisation. This is however contrary to scientific management principles which emphasised bureaucracy and non-participative cultures.

By definition Prasad (1998) indicated that quality circle is a volunteer group composed of members who meet to talk about work place service improvements and make presentation to their management with ideas. Mathew (1991) sees a quality circle as a people driven group of employees who meet regularly to discuss work-related problems. Although the later definition did not indicate what employees will do with the product of their discussion both authors have brought about key features of quality circles such as it being a voluntary and people driven initiative as well as its main aim of coming up with solutions to work challenges. However the above definitions failed to indicate how often employees meet or the composition of employees in those quality circles. To cater for the shortfalls in the above definition a more comprehensive definition of quality circles was provided by Adupa (1986) which says quality circle is a small group of employees in the same area of work or doing a similar type of work who voluntarily meet regularly for about an hour every week to identify, analyse and resolve work-related problems, leading to improvement in their total performance and enrichment of their quality of life. The striking feature of this definition is found in its detailed articulation of the concept of quality circles, its composition and benefits to both organisation and employees.

Quality circles bring numerous benefits to organisations. Maheshwari (1987) highlighted that quality circles enable organisations to realise full potential of workforce and make employees understand their work better. Thus from this author quality circle will be of much help in the leather manufacturing sector it will result in employees knowing better the complicated manufacturing process. Rehder (1981) also highlighted that quality circles improves analytical skills of employees and their ability to learn new things. According to Juran (1980) quality circles are a form of a never-ending source of new ideas. From the above contributions it is fair to conclude that quality circles may go a long way in ensuring employee participation among players in the shoe manufacturing sector and these organisations will never regret in any way their adoption of these vital initiatives.

2:3 Reward systems and quality management in the manufacturing sector

As outlined in previous sections employee participation has proved to be a key contributor to all quality endeavours. This section tries to explore how employees participate and in their efforts to

find out how employees can participate Corredor and Goñi, (2011) argued that reward systems are important in employee participation. Kanji and Asher (1993) indicated that people are the quality makers and when they are well motivated they can overcome any difficulty they encounter in solving any problems. From this line of thinking, it goes without saying that organisations can motivate the creators of quality through good reward systems, thus rewards system has a great impact on quality. A study conducted by Godard (2004) concluded that workers view rewards systems as an indicator of organisational commitment to its workforce and moreover Costigan (1995), cited that if employees are happy with the reward system they will perform in a manner which is reciprocal and show more commitment to the organisational objectives. These authors seem to imply that one of the ways of ensuring employees commitment to organisational objectives is through reward systems. All this point to the importance of the reward systems in ensuring the success of organisational endeavours such as providing quality products.

By definition a reward systems according to Malhotra *et al*.,(2007) consists of all organisational components which are involved in the allocation of compensation and benefits to employees in exchange of their contributions in terms of their labour. The other definition is one by Mottaz, (1985) who highlighted that reward systems refer to all monetary, non-monetary, and psychological payments that organisations provide to their employees. The earlier definition provides that rewards are more of a token of appreciation on the part of the organisation to its employees, the later definition choose to dwell more on categories of rewards systems. Weatherly (2002) provides the other definition of rewards systems and noted that they represent legal obligations of monetary nature in the employment relationship it is important to indicate that rewards systems which are critical in attracting and retaining employees. Although this definition seems to limit the definition of rewards systems to monetary benefits it however highlighted one important fact that rewards systems are important in retaining employees. Employee retention is key in quality endeavours thus from this line of thinking it is fair to conclude that rewards systems are important in quality management.

2:3:1 Categories of rewards systems.

There are several ways of categorising rewards systems. The most widely used categories of reward system that are supported by several authors such as (Chen and Farris, 1999; Katz and

Van Maanen, (1977); Malhotra et al, (2007); Weatherly, 2002) are intrinsic and extrinsic rewards systems. Weatherly, (2002) highlighted that it represents the satisfaction that a person derive from doing a job. While Mottaz, (1985) indicated that intrinsic rewards systems represent the upper, self-efficacy end of need hierarchy and include issues such as job satisfaction, a feeling of completing a challenge effectively and social interactions that come from workplaces. Although Weatherly (2002) did not go into the specifics in the definition an area which was captured by Mottaz, all the authors seem to agree on the fact that reward systems are based on the job itself.

In regard to extrinsic rewards systems Malhotra *et al*., (2007) these rewards systems satisfy the lower level needs of Marlow's hierarchy of needs and they cover the need for income for survival as well as a feeling of stability and consistency at the job. Kallerberg (1977) on the other hand noted that extrinsic rewards come as a result of doing the job and they are of tangible nature. These authors seem to agree on the fact that these reward systems are not directly derived from the job itself but can come from non-job related factors. Selden & Brewer (2000) also made a distinction between monetary and non-monetary rewards systems. Weatherly, (2002) however was quick to note that both monetary and non-monetary rewards are both extrinsic rewards systems. In terms of monetary rewards Chen *et al.* (1999) indicated that they include tangible objects such as pay, bonuses, and promotions while non-monetary represent rewards such as non-tangible rewards such as praise and personal recognition.

Though there are variations among authors about the definitions of reward system there is a general consensus among them that reward systems can be grouped between individual and group based reward systems. In this study of the quality control in the leather sector one question which emerges is; what then are the best reward systems for improving quality in organisations. In regard to the issue of the best reward system that foster the TQM philosophy there seems to be differences that emerge with some agitating for group rewards Farndale et al. (2011) while others go for individual rewards Miao and Evans(2007). Those who go for individual rewards cite and look at the contributions of Deming (1986) who noted that organisations should reward individuals who perform in line with the TQM philosophy and should shun collective rewards as they create a sense of helplessness as an individual cannot influence the behaviour of others in the group thus the organisation will end up evaluating employees based on actions which they

have no influence on. From these authors therefore rewards systems should be individual based and not collective.

On the other end there are those such as Aiken and West (1991) who go for group rewards systems indicating that quality management result often depends on systems and processes rather than individual performance. And in such processes employees will be working in groups. These authors therefore seem to imply that group rewards support the quality management philosophy and additionally Costigan (1995), highlighted that such rewards systems foster teamwork and encourage employees to broaden and enhance their skills thereby improving the organisation quality results.

Moreover Aiken and West (1991), Brought a new dimension that underscores the criticality of group based rewards systems , accordingly these authors noted that group based rewards systems generate workforce commitment which is a prerequisite for all organisational quality initiatives. Moreover, these authors also noted that such rewards systems above all have synergistic effects on people results. Others also such as Costigan (1995), indicated that these rewards systems have an impact of reducing employees levels of absenteeism, employee turnover and improved worker relationship. In line with all the above contributions it is important to note that the success of quality initiatives hinges on the ability of an organisation to use rewards systems which are consistent with the TQM philosophy. This is in line with the contributions of Costigan (1995) who noted that an organisation which succeeds in building quality in its workforce is halfway done towards the goal of making quality products.

2:4 Chapter summary

This study reviewed literature on quality control systems in the shoe manufacturing sector. It started by evolution of quality management and then quickly jumped to defining the quality concept. Various authors' views concerning quality control, its different types as well as different quality tools were also reviewed. Literature on participation was also critically analysed together with the impact of reward systems on quality. The next chapter discuses research methodology for the study.

CHAPTER 3

Research Methodology

3.0 Introduction

This section covered all the various methods which the researcher used in collecting data. The researcher used both qualitative and quantitative research methods. Qualitative research provided in depth knowledge of the problem while quantitative research allowed data to be quantified.

3.1 Research designs

There were various research designs available to the researcher which included exploratory, descriptive and causal. These research designs offered or provided a different framework for the researcher to collect data. In this research both exploratory and descriptive designs were used. Research designs served as a roadmap for the researcher on how to carry out the project that was understudy.

3.1.1 Exploratory Research design

Exploratory research is meant to explore the research questions and does not intend to offer final and conclusive solutions to existing problems. It was used to assist the researcher to gain a broad understanding of the problem. Exploratory research is an initial research into a hypothetical or theoretical idea. It is qualitative. Bourma and Ling (2004), state that exploratory research design has the goal of formulating problems more precisely, clarifying concepts, gathering explanations, gaining insights, and eliminating impractical ideas. So the exploratory research was done to determine the nature of the problem. Exploratory research established the ground work for the descriptive research.

3.1.2 Descriptive Research designs

This research also relied on descriptive research design. Descriptive research design was preferred because it allowed the researcher to answer questions like; which, how, where, when and what. It was also able to state such questions as when the Zimbabwe Bata Shoe Company started to experience high incidents of quality problems in hides and which suppliers provided quality hides. Descriptive design also used statistical data that was used in the study. It enabled

the researcher to find more detail and be able avoid guesswork and competently explain the researcher's understanding of the research area.

3.2 Target Population

The target population refers to the elements or objects to which the researcher is targeting in terms of information and views. In this research the total population was made up of those who buy the raw materials, who facilitate decision making and payment, those responsible for quality control, the suppliers, producers, the sales force and the product users.

Managing Director	1
Financial Director	1
Procurement Officers	7
Tannery Technicians	5
Quality Controllers	9
Laboratory Technicians	5
Claim Department Officers	3
Bata Shoe Store/Depot	50
Wholesalers and Distributors	15
Suppliers Hides	15
Suppliers Chemical/Rubber	20
Suppliers of components	10
School Children in Zimbabwe	3 000 000
Total Population	3 000 141

3.2.1 Sampling Frame or Procedure

Research targeted primary and secondary school children who are the users of the product in question. The children's parents, who were responsible for making the purchase of the product understudy. Kumar at el (2004) say a sample frame is a list of population members used to obtain a sample in which the researcher made some reference to.

3.3 Sampling Methods and Techniques

According to Chisnall, (1973) there are two basic methods of sampling which are probability and non-probability. Probability is also known as stratified or random sampling and each unit of the population has a known chance of being included in the sample. In stratified sampling the population is broken down into particular groups sharing common factors and participants are selected randomly from these groups in the appropriate proportions. Since the population in each stratum is nearly homogeneous than in the entire population this contributes to the accuracy of the sampling process. It also simplifies data interpretation and analysis of results. Non probability sampling is sometimes referred to as 'judgement sampling' or purposive sampling. It occurs when selection of the sample is dependent on human judgement, and not on the rigorous application of probability theory. This is when a research is started with a definite aim or purpose. While it is ideal to test the whole population in all forms of research, it is sometimes practically impossible because the population would be too large. Convenience sampling is therefore preferred because it is inexpensive, fast, easy and convenient samples are readily available. For these reasons the researcher made use of both probability and non probability sampling.

3.3.1 Sample Size

The sample size is the number of participants in a sample. To achieve a lower margin of error a larger sample size is used. The researcher worked with a confidence interval of 5% and a confidence level of 95%. To get the right sample size the researcher used the sample size model developed by Krejcie and Morgan (1970).

Table 3.1 for Determining sample size for a given population

Population size	Confidence level = 95%				Confidence Level = 99%			
	5%	3.5%	2.5%	1.0%	5.0%	3.5%	2.5%	1.0%
10	10	10	10	10	10	10	10	10
20	19	20	20	20	19	20	20	20
30	28	28	29	30	29	29	30	30
50	44	44	29	50	47	48	49	50
75	63	69	42	74	67	71	73	75
100	80	89	94	99	87	93	96	99
150	108	126	137	148	122	135	142	149
200	132	160	177	196	154	174	186	198
250	152	190	215	244	182	211	229	246
300	169	217	251	291	207	246	270	295
400	196	265	318	384	250	309	348	391
500	217	306	314	475	285	365	421	485
600	234	340	432	565	315	416	490	579
700	248	370	481	653	341	462	554	672
800	260	396	526	739	363	503	615	763
1 000	278	440	606	906	399	575	727	943
1 200	291	474	674	1067	427	636	827	1119
1 500	306	515	759	1297	460	712	959	1376
2 000	322	563	869	1655	498	808	1141	1785
2 500	333	597	952	1984	524	879	1288	2173
3 500	346	641	1068	2565	558	977	1510	2890
5 000	357	678	1176	3288	586	1066	1734	3842
7 500	365	710	1275	4211	610	1147	1960	5165
10 000	370	727	1332	4899	612	1193	2098	6239
25 000	378	760	1448	6939	646	1285	2399	9972
50 000	381	772	1491	8056	658	1318	2520	12455
75 000	382	776	1506	8514	658	1330	2563	13583
100 000	383	778	1516	8762	659	1336	2585	14227
250 000	384	782	1527	9248	662	1347	2626	15555
500 000	384	783	1532	9423	663	1350	2640	16055
1 000 000	384	783	1534	9512	663	1352	2647	16317
2 500 000	384	784	1536	9567	663	1353	2651	16478
10 000 000	384	784	1536	9594	663	1354	2653	16560
100 000 000	384	784	1537	9603	663	1354	2654	16584
300 000 000	384	784	1537	9603	663	1354	2654	16586
	+ Copy. The research advisors (2006) all rights reserved							

Table 3.2 Showing Sample Size

Description	Population	Sample
Managing Director	1	1
Financial Director	1	1
Procurement Officers	7	7
Tannery Technicians	5	5
Quality Controllers	9	9
Laboratory Technician	5	5
Claims Department Officer	3	3
Bata Shoe Stores/ Depots	50	44
Wholesale Distributors	15	14
Hides suppliers	15	14
Rubber and Chemical Suppliers	20	19
PVC and shoe Components Suppliers	10	10
School Children	3,000,000	384
Sample size		516

3.4 Data Sources

There are two types of major sources of data. They are primary and secondary data and they are both vital for this research. The researcher complimented secondary data with primary data.

3.4.1 Secondary data

Secondary data is existing information that has been accumulated for other uses. It may be useful for the purposes of specific surveys. Secondary data may be available internally or externally. The researcher had access to the company's customer data base, production output reports, claims records, returns reports and daily and weekly salesmen reports. This information assisted the researcher in ascertaining the trend or level of defective school shoes at Bata Shoe Company Gweru.

3.4.2 Primary data

According to Kotler (1998) primary data is information collected for a specific purpose at hand. It is information which has to be collected for the first time by either one or a blend of: questionnaires, observations and interviews. This information collected may later be used as secondary data for future studies by other researchers.

3.5 Research Instruments

The researcher used questionnaires, carried out interviews and made observations in collecting primary data for the purposes of the study.

3.5.1. Questionnaires

A questionnaire is a series of questions to be asked to respondents to obtain statistically useful information about a given topic. Questions to be asked to respondents were either close-ended or open-ended. Close-ended or structured questions require a one word answer or a tick and are aimed at only gathering relevant data. These are time consuming questions usually asked at the early stages of the survey to get a full understanding of the research area. Open-ended questions are also known as 'free answer' or 'free response' and call for a response of more than a few words. The researcher used close-ended questions to school children mostly and open-ended questions to the rest of the population. This assisted the researcher to siphon valuable information from the respondents.

3.6.2 Interviews

This is another instrument that the researcher used. Kothari, (2004) defines an interview as involving presentation of oral – verbal stimuli and reply in terms of oral – verbal responses. Chisnall (1973) says an interview has also been defined as 'a conversation directed to a defined purpose other than satisfaction in the conversation itself'. It is concerned with a purposeful exchange of meanings, and it is this interaction between the interviewer and the respondent which contributes so much to the success of the interview. The give-and-take and free exchange of communication lie at the root of a successful interview. Interviews allow for immediate detailed feedback and the researcher asked pre-formulated questions as per the questions guide. The beauty about interviews is that numerous probing questions can be asked in a very short period of time.

3.6.3 Observations

As cited in Chisnall (1973) while questionnaires and interviews are probably the most flexible and generally useful devices we have for gathering information there is no standard strategy suitable for every research problem. This researcher has found observations useful in his specific study. Observational research is an array of research methods used in the intention of observing consumer interactions with products and services in their natural surroundings. The main advantage to conducting observational research in business is that the consumers are often unaware they are being monitored, allowing the researcher to make an objective analysis. www.businessdictionary.com The researcher immersed himself in the culture of the people under study. Immersion therefore allowed the researcher to attend meetings with informants, familiarizing with situations, reading documents on the subject, observing interactions in the setting and essentially becoming part of the culture. It also means listening to the people of the culture and really attempting to see the world from their point of view. In industrial marketing research observation can involve checking the types of equipment in use and how certain tools are handled. The validity of data supplied about certain characteristics of production can also be checked as one walks in the factories.

3.7 Data Collection Procedure

The researcher made use of questionnaires. These research questionnaires were pretested by workmates and colleagues in order to perfect them and avoid ambiguity in questioning. The researcher used the drop and pick method of questionnaires. Questionnaires were also mailed to companies accompanied by a letter of introduction when soliciting co-operation. The researcher did make use of interviews. Appointments for 15 minutes average time interviews were made.

3.7 Validity and reliability of research findings

Punch (1998) states that validity refers to the extent to which an instrument measures what it claims to measure. The questionnaires and interviews used in the research have to be able to measure and describe the data required in the research. Pilot study and triangulation wwere used to ensure validity and reliability.

3.7.1 Pilot Study

The researcher carried out a pilot study with workmates who also happen to be customers on the other side.

3.7.2 Methodological Triangulation

It entails the use of multiple qualitative and/or quantitative methods to the study program. Results from questionnaires, observations and interviews were compared to see if similar results are received. www.edis.ifas.ufl.edu/fy394

3.7.3 Large sample size;

The researcher used a large sample size to ensure reliability.

3.7.4 Plain language;

The researcher used simple plain language and short unambiguous questions so as not to confuse respondents and solicit valid data.

3.8 Data presentation and analysis

The data that was collected and converted to useful data was presented in a simpler way using tables, pie charts, bar graphs, and line graphs. Microsoft Excel and mathematical models were used in analyzing quantitative data. Qualitative data was analyzed using thematic and content analysis.

3.9 Summary

The main concerns of this chapter were to show procedures and methodologies employed in this study. A combination of exploratory and descriptive research designs were used for the study. The next chapter focuses on the data analysis and presentation.

CHAPTER 4

DATA ANALYSIS, PRESENTATION AND DISCUSSION OF FINDINGS

4:0 1ntroduction

Data was mainly gathered from questionnaires and interviews. Analysis was done using a combination of qualitative and quantitative approaches. Tables and graphs were used in data presentation

4:1 Response rate

A total of 516 questionnaires were distributed to both staff and school pupils. In particular 122 questionnaires were distributed to staff and 384 questionnaires were distributed to pupils. Table 4:1 below summarises the responds rates.

Table 4:1: Responds rate from research participants.

Category of respondents	Number of questionnaire distributed	Number of questionnaire returned	Response rate
Staff	122	120	98%
School pupils	384	380	99%

From the table above it is very much evident that the response rate was very high as it had an average of 99% across all research participants. High response rate could have been a result of high interest that was generated from the study participants.

4:1:1 Demographic profiling of respondents.

The table below represents the demographic profiles of respondents used in this study.

Table 4:2 Respondents profiles

Respondents characteristics		**Frequency**	**Percentage**
Level of education	Primary education	16	12
	Secondary education	66	51
	Certificate	21	16
	Diploma	17	13
	Degree	10	8
Years of experience	1-5	71	55
	6-10	31	24
	11-15	12	9
	16-20	9	7
	Over 20	7	5
Gender	Male	97	75
	Female	33	25

In terms of level of education the table above shows that from 130 employees together with management a considerable number (88%) of Bata has achieved secondary education. It was however interesting to note that 63% of respondents did not have any qualification apart from secondary education. This further support the one fact which emerged in this study that Bata conduct in-house training programmes utilising its old workforce. In terms of years of experience the table shows that the company is not very much experienced as indicated by the fact that 55% which is more than half of the respondents fell within the 1-5 years of experience category. Only 2% of the total workforce had experience of above 20 years. This implies that these workers had 6 years of experience before the economic crises of the year 2000 which means that the company has a challenge of staff to conduct in-house training. In terms of gender there are more males than females in the study.

4:2 Cause of poor quality product at Bata

The major objective of this study was to explore the causes of poor quality products in school shoes category and the table below summaries the findings.

Table 4:3 Causes of poor product quality

Cause	Frequency	Percentage
Shortage of skilled personnel	118	99
Poor remuneration	115	96
Poor raw materials	120	100
Old machinery	117	98
Power and water shortages	117	98

Untrained workforce

From the data gathered lack of skilled personnel emerged as one of the main causes of quality problems in the school shoes category. This factor from the table above was acknowledged by 99% of the respondents. These respondents were also acknowledging during interviews conducted where respondents noted that this challenge was further aggravated by the closure of Bata Training Centre which used to train employees to produce quality goods. Since this closure of the company training centre the company has been relying on in-house training programs. It emerged in this study that the company uses its old work force to train new staff and this strategy is again giving problems to Bata as some of the young and educated workforce have an attitude when it comes to listening from the skilled old but uneducated workforce. One respondent commenting on this attitude problem of university graduates was quoted as saying '*many of these university graduate know nothing but look down upon us when we advise them'*. It also emerged in this same study that the company relies greatly on already trained workforce from universities to hold managerial positions. Given the preoccupation of university graduates with textbook theories and lack of training facilities at the company it is not a surprise that the company has poor quality products. This young group of university graduates and their negative attitude to the highly skilled old workforce might be the contributing factor to lack of employee participation which also emerged in this study.

Poor raw materials

This study revealed that in the height of economic crises Bata changed its traditional supplies and this might be one of the contributing factor to quality problems. From the table above 100% of the respondents indicated that poor raw materials is a factor which is causing quality problems in the school shoe category. These findings are in line with the findings by Bou and Beltrán (2005) where it was noted that many manufactures opt for cheaper raw materials which normally cost them as it results in poor quality products. Managers were however on the defensive side during interviews and indicated that hides are now a scarce commodity as the national heard has declined and the company now relies on supplies from newly resettled farmers whose supply is not consistent. Poor quality hides also emerged through many customers who indicated that the school shoes from Bata are no longer as durable as they used to be. It also emerged in this study that the company also in search of cheaper supplies ends up acquiring raw material; such as PVC from numerous suppliers a fact which makes it very difficult for the company to trace a supplier with poor raw materials.

Old machinery

The study revealed that Bata Shoe Company uses old machinery and is heavily causing poor quality goods. From the table this factor was acknowledged by 98% of the respondents as a contributing factor to quality problems in the school shoe category. This was also supported by findings from interviews where management acknowledged that machinery and equipment in the Tannery department were now very old but currently the company does not have adequate funds to acquire new machinery. Further investigations by the researcher revealed that the company is in a dilemma. Many of these machines suffer constant breakdowns forcing employees to work overtime which exerts more pressure back to the organization in the form of increased wage bill and bonuses.

Poor remunerations

This factor was acknowledged by 96% of the respondents as a contributing factor towards quality problems in the school shoe category. Employees indicated apart from their salaries being below that of other employees with similar qualifications from other companies they experience delays in payment of their wages. Many employees complained about the company's use of

production plans to determine the bonuses of employees. One employee complained that when they fail to reach the targeted production targets even if it is not their fault they are not given bonuses. This could be a contributing factor to the production of poor quality goods as employees even if they discover poor quality raw materials end up using them in production so that they meet the production targets and then get their bonuses.

Power and water shortages

From the table above 98% of the respondents indicated that power and water shortages experienced in city contributes to quality problems. Respondents indicated that for quality tanning of leather there is crucial need of uninterrupted supply of water thus given the shortage of water in the city at times the tanning process is greatly compromised. Also National Social Security Authority (NSSA) requirements stipulate that when there is no water the production should seize as it becomes a health hazard in the factory. One respondent upon commenting on erratic power and water supply was quoted as saying 'when *electricity comes back we are left with no option but and at times use shortcuts to meet our targets'*. In support of these short cuts which compromise quality of products one respondent was quoted as saying '*in any case we have a retail outlet for these factory seconds and they sell even faster that good quality products'*. Respondents also indicated the challenge of power outages affect the quality in both tannery and footwear production department.

4:2:1 Availability of control mechanisms to solve quality problems

Given the challenges cited above it goes without saying that the company must have adequate control mechanisms to improve on their quality. Data was gathered to explore the existence of these control mechanisms and the table below summarizes the findings

Table 4:4: Prevalence of control mechanisms at Bata Shoe Company.

Nature of control	Response categories			
	Yes		No	
	frequency	percentage	Frequency	Percentage
Raw material control	120	100	-	-
In-process controls	120	100	-	-
Output controls	120	100	-	-

Raw materials control

From the table above 100% of the employees indicated that the company has control mechanisms to ensure that raw materials meet the required standards. These findings were supported by interviews conducted .The researcher further probed employees to find out the reason for poor quality goods in an environment where raw materials are checked for compliance with set standards. Respondents indicated that many of the poor quality products are a result of short-cuts by employees to meet production targets. It emerged also from this study that because of constant power cuts and erratic supply of water at times employees are left with no option but to make shortcuts to cover up for time lost during times of the absence of electricity or water.

In-process control mechanism

From the questionnaires distributed 100% of respondents indicated that Bata Shoe Company has adequate control mechanisms in its processes to ensure that quality goods are produced. From interviews conducted it emerged that when production processes are ongoing, employees will be guided by samples and specifications of each product which is provided to them prior to the production process. The company also makes use of quality inspectors who constantly monitor the quality of goods. However, due to unattainable production targets, employees end up not observing the specifications, thus allowing poor quality products to proceed so that they meet production targets. And given the availability of a shop dedicated for the sale of rejects, employees might not find the reason to be very cautious in production process.

Output-control

From the respondents it also emerged that the company has adequate output control mechanisms in place to ensure quality products. Respondents indicated that after production the company selects samples from batches to see if they meet the required standards. However, this method provides valuable feedback to future production process, it is not effective at all as it is reactionary and there is nothing that can be done to already spoiled shoes apart from selling them at very low prices.

4:3 Impact of worker participation in improving quality of school shoes

The other main objective of this study was to investigate the impact of employee participation on quality. In order to find answers to this the researcher saw it fit to first establish the prevalence of employee participation at Bata Shoe Company thus employees were asked to indicate whether they participate in matters that affecting them. Data was gathered through questionnaires and interviews and the following table summarises the findings.

Table 4:5 Prevalence of employee participation at Bata Shoe Company

Respondents	**Response category**			
	Yes		**No**	
	Frequency	**Percentage**	**Frequency**	**Percentage**
Staff	18	15	102	85

From the table above 15 % of the respondents indicated they are involved and took part in the formulation of policies that affect their work whilst 85% of the respondents indicated that they are not consulted at all. These findings seems to agree with the findings by Bayo and Merino (2001)which indicated that although there is widespread literature on employee participation in reality very few organization practice it. Top leadership is reluctant to consult employees. This lack of participation could be the cause of poor quality products in the school shoe category.

4:3:1 Nature of employee participation at Bata Shoe Company

An effective employee participation initiative is one which is formal and well planned. Of the 18 employees who indicated that they participate in quality decisions, further probing was done to

discover the nature of participation prevalent at Bata Shoe Company. Employees were asked whether their participation is well planned, consistent and given adequate time and the table below summaries the findings.

Table 4:6 Nature of employee participation at Bata Shoe Company

Respondents	**Response category**			
	Yes		**No**	
	Frequency	**Percentage**	**Frequency**	**Percentage**
Well planned	0	0	18	100
Given enough time	0	0	18	100
Conducted regularly	0	0	18	100

From the table above all employees who had earlier indicated that they participated indicated that the nature of participation at this company is not planned and seem very informal, is not given enough time and happens once in a while. This could be the reason why 85% above indicated that there is no employee participation at all as it is very difficult to say it is in existence when it happens very informally. One respondent said '*how can they involve us on matters of quality when they fail even to consult us on matters of our remuneration'.* Statements such as these mean that Bata Shoe Company has a long way to go when it comes to employee participation.

4:3:2 Willingness of management to implement employee ideas

An employee participation program which is effective is one where management apply the contributions of their employees. Although managers indicated that they value contributions of their work force. It was very shocking to learn from employees that management at Bata does not seem eager to incorporate ideas from employees. One employee highlighted that managers at this company seem to welcome ideas from their colleagues in management positions or from outsiders whilst taking employees contributions for granted. Managers at Bata are very reluctant to allow employees to participate in quality decisions. One staff interviewed recall an incident two years ago when he brought to the attention of managers that the current suppliers though they are cheap provide sub-standard raw materials and the company should consider changing

them and the manager agreed but surprisingly up to now the company still uses suppliers who continue providing the company with poor raw material.

4:4 Reward systems and its effect on quality of productivity at Bata Shoe Company

One of the objectives of this study was to find out whether reward system has an impact on poor quality. The researcher saw it fit to first explore the major reward systems available at Bata Shoe Company and the figure below represent the findings.

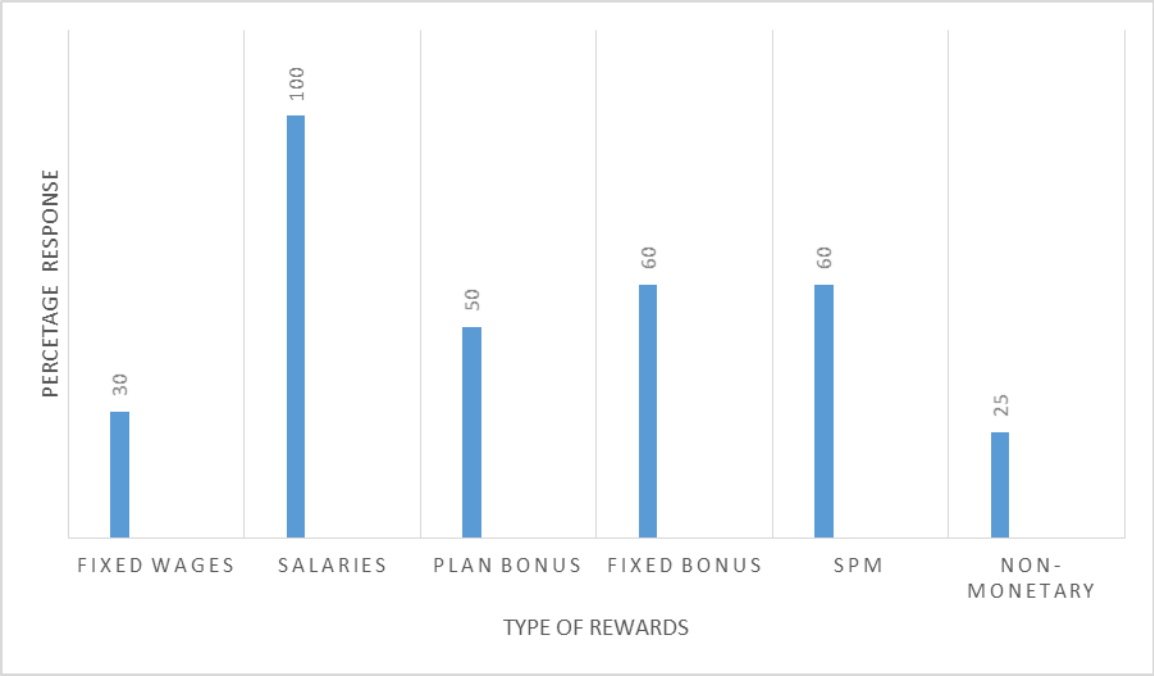

Figure 4:1 Rewards systems at Bata Shoe Company.

From the table above it is evident that the company has a wide range of rewards system in place. from the figure above Bata Shoe Company has a total of 6 categories of rewards systems of which all of them are common rewards given to employees except the Standard production per minute (SPM). One striking finding was that the company also has non-monetary incentives and one respondent commenting on these rewards systems was quoted as saying '*only managers are at times given holiday packages and they go there with their spouses and children*'. Given this prevalence of rewards systems at this company, it was quite surprising to note that the company

has poor quality of products. This could be a result of lack of participation which also emerged in this study thus employees are not involved in the setting of targets which results in them being unattainable.

4:4:1 Effect of Bata's financial reward system on quality of productivity.

After exploring the reward systems prevalent at Bata Shoe Company respondents were asked their views in regard to whether they felt that the reward systems have a bearing on quality of productivity and the table below shows the findings.

Table 4:7 Effect of reward system on quality of productivity.

Response category	Frequency	Percentage
Have impact a positive impact	112	93
Have no impact a negative impact	2	2
Have a negative impact	6	5

As shown in the table above 93%of respondents agree that rewards systems have a positive impact on quality of productivity while 2% did not see the relationship. Some respondents (5%) indicated that reward systems have a negative impact. In acknowledging that reward systems have an impact on quality of productivity employees indicated that when the company offers more incentives it gives them motivation to work hard and avoid short-cuts in the production process. These findings are in agreement with the findings of Udpa (1986) who witnessed a direct relationship between rewards and the productivity of quality goods. However those who indicated that there is a negative relationship were particularly not happy with target based / SPM bonuses and these respondents noted that at times they go for short cuts in order to get the promised bonuses.

4:4:2 Employee perceptions on rewards systems.

A good reward system is one which is fair to both employees and the employers .in this assessment of the impact of rewards systems to poor quality the researcher also sought to find

out how employees perceive their remunerations in regard to its fairness as well as its effect on quality of products and the table below summarises the findings.

Table 4:7 Employee perceptions on rewards system fairness at Bata Shoe Company.

	Minimum-score	**Maximum-score**	**Mean-score**
Our wages as employees are fair	1	2	2.4

NB: The minimum score and the maximum score represents the lowest and highest rating respectively which was noted from the employee responses; the two variables were not used to calculate the mean score. Mean score represents the overall employee's response divided by the total number of respondents.

The minimum score with regard to the employees' view concerning the fairness on their reward system was 1 (strongly disagree) and the maximum 2 (disagree). The mean score was 2.4 which is close to 2 (dis agree) the researcher concludes that the employees are not happy with the rewards system at Bata Shoe Company. These findings were further validated by responses from interviews conducted with management who acknowledged the existence of low levels of remuneration but were however quick to indicate that as soon as sales revenue improves they would consider improving the remuneration of their employees. These findings seem to suggest that poor quality in the school shoe category might be caused by employees who see their rewards system as very unfair.

4:5 Summary

Analysis was done using both qualitative and quantitative terms. Bar graphs and tables were mostly used to present data whilst qualitative data was analysed through statements and quotations as they were expressed by respondents. Analysis of data produced the following results.

- With regard to control mechanisms the company has adequate control mechanism in place for raw material, processes and the final product. This was acknowledged by 100% of the respondents.

- Major causes of quality problems at Bata Shoe Manufacturing Company are poor raw material, lack of skilled personnel, power outages and water shortages.

- Employee participation at Bata Shoe Company has less impact on improving quality of products as it emerged that managers are reluctant to implement views of employees and Employee participation is done informally, not planned and is not given adequate time.

- Rewards systems have a positive impact on quality of productivity and this was mentioned by 93% of the respondents.

The next chapter presents summary, conclusions and recommendations for the research.

CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5:0 Summary

This research was undertaken to evaluate the quality control system used by Bata Shoe Company. The study was motivated by challenges that the company is facing particularly in its school shoe category which include loss in market share, decline in sales volumes and increase in the amount of rejects. The main objectives of the study are to establish the factors causing the major quality problems in the school shoes category. Moreover the study also sought to investigate the impact of worker participation on improving the quality of school shoes. Finally it also sought to establish the effect of Bata's financial reward system on quality of productivity. Various literature in the area of quality control as well as employee participation and rewards systems were reviewed and most of it came from textbooks, journals and other online resources. The research design used for this study was a combination of exploratory and descriptive research. The major instruments used are questionnaires and interviews which yielded both qualitative and quantitative data. In terms of data analysis, both qualitative and quantitative approaches were used. The following findings were produced.

- Major causes of quality problems at Bata Shoe Manufacturing Company are poor raw material (100%), lack of skilled personnel (99%) and power outages and water shortages (98%) and old machinery (98).

- Majority of respondents interviewed indicated that the company has adequate control mechanism in place for ensuring raw materials, processes and the final product meet the accepted standards. This was acknowledged by 100% of the respondents.

- Employee participation at Bata Shoe Company has less impact on improving quality of products as it emerged that managers are reluctant to implement views of employees and employee participation is done informally, not planned and is not given adequate time.

- Rewards systems have a positive impact on quality of productivity and this was mentioned by 93% of the respondents.

5:1 Conclusions

From the research findings above, the researcher makes the following conclusion.

5.1.1 Factors causing the major quality problems in the school shoes category.

The study found out that 100% of the respondents indicated that poor raw material as one of the factors causing quality problems in the school shoes category. Lack of skilled personnel was indicated by (99%) while power outages and water shortages and well as old machinery were acknowledged by 98% on each. This study therefore conclude that poor raw materials, lack of skilled personnel, water and power shortages and old machinery are the major factors causing major quality problems at Bata Shoe Company in the school shoe category.

5.1.2 The impact of worker participation on improving the quality of school shoes.

Based on a majority of employees who indicated that managers are reluctant to incorporate views of employees and also the fact that majority of employees indicated that Employee participation is done informally, is not planned and not given adequate time the study therefore concludes that worker participation has an impact but in not being done properly and if it is done properly this programme has the potential of improving the deteriorating quality of goods currently being experienced by the company.

5.1.3 The effect of Bata's financial reward system on quality of productivity.

Based on the negative employee perceptions on the reward systems versus the current upsurge in factory seconds in the school shoes category, all being combined with 93% of respondents who

indicated that the reward system has a positive impact on quality of productivity, this study concludes that at Bata Shoe Company the reward system has an impact of productive quality.

5.2 Recommendations.

Based on the above conclusions the researcher makes the following conclusion.

- Bata Shoe Company should consider horizontal collaboration with other members of the value chain. In this regard the company can enter into agreements which are mutually beneficial with small scale and large scale farmers to guarantee adequate supply of hides. This recommendation is made in light of the fact that poor raw materials has emerged as one of the main challenges causing poor quality products.

- The study also recommends that the company should also consider having its own sources of water and electricity or a dedicated electricity supply line. This could be achieved by the acquisition of a high voltage generator or as well as drilling a borehole within the company premises. This will go a long way in alleviating water and electricity shortages as they emerged as the other contributions of poor quality products.

- The study also recommends that the company should also consider seeking investment partners preferably among friendly nations such as those in Asian countries. This will result in the company being able to refurbish its old machinery and equipment with also potential of re-opening its long closed Training Centre. These recommendations are made in light of the fact that other challenges for poor quality goods were that of old equipment and lack of trained personnel.

- Bata Shoe Company should also consider the establishment of quality circles to boost level of employee participation. This is largely because the study revealed that the company does not have employee participation programs and management does not consider contributions of employees.

- The study also recommends that the company should involve its employees in coming up with reward systems and reward systems should not be affected by factors beyond the control of employees. This recommendation is made because the employees complained of reward systems being unfair and unattainable.

5:3 Further research

The current research evaluated the quality control system used in the shoe manufacturing industry to improve the quality of product. Further research is therefore recommended on the potential of horizontal collaboration in solving challenges in the leather industry.

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Appendix A

Questionnaire for Customers

My name is Charles Gombe; I am in my final year at the Midlands State University where I am studying for a bachelor of marketing honours degree. I am conducting a study on the evaluation of the quality control systems used in the shoes, leather and allied products industry: a case study of the Zimbabwe Bata Shoe Company Gweru. This research is part of my degree program. Your co-operation in answering the below listed questions will be greatly appreciatiated. This questionnaire is for academic purposes and I can assure you that your responses shall remain confidential. I would like to thank you for leaving your busy schedules to answer this questionnaire.

Please mark where appropriate and answer questions in the places provided

1. Please kindly indicate your gender.

   Male ☐ Female ☐

2. For how long have you been buying shoes from the Zimbabwe Bata Shoe Company?

   1-5 years ☐ 6-10 years ☐ 11-15 years ☐ 16-20 years ☐ over 20 years ☐

3. Which of the following Bata school shoes have you bought before?

   Toughees ☐ Wienbrenner ☐ Both ☐

4. Why did you buy the brand(s) you indicated in your response to question 3?

   Wide fit ☐ genuine leather ☐ Affordability ☐ Durability ☐ All attributes ☐

5. Have you ever had any problems with Bata school shoes that you have bought?

   Yes ☐ No. ☐

6. If yes what was the nature of the problem?

……

7. Did you lodge a complaint regarding the defective shoes?

Yes ☐ No. ☐

8. If yes how was your complaint resolved?

---

9. Bata Shoe Company handles customer complaints without delay

Strongly disagree ☐

Agree ☐

Not sure ☐

Disagree ☐

Strongly disagree ☐

10. Would you say the quality of Bata school shoes has improved?

Yes ☐ No. ☐

11. Please support your answer for question 9 above.

---

12. What would you want Bata to do so that they improve the quality of school shoes?

Appendix B

Questionnaire for Employees

Please tick where appropriate and insert answer in spaces provided. Thank you for your contributions

1. Kindly indicate your gender

   Female ☐ Male ☐

2. How long have you been employed by Bata Shoe Company

   Less than a year ☐ 2-5 years ☐ 6-10 years ☐ 11-20 years ☐ 0ver 20 years ☐

3. Which department do you work in? ……..

4. Have you ever experienced quality problems in your department?

   Yes ☐ No. ☐

5. If your answer is "yes" what could it have been? (Describe the nature of your problem)

   ……....

6. From which of the following distribution channel do you receive most of the complaints?

   Distributors Wholesalers Own stores Specify----------

7. How was the problem solved?

   ……

8. How long does it take you to fix problems reported to you by customers?

   Hours ☐ days ☐ weeks ☐ months ☐

9. In your opinion what do you think are the possible causes of quality problems?

   ----

10. Do you participate in improving quality in your company?

Yes ☐ No. ☐

11. If 'yes' comment on how it is improving quality.

……

12. Does management accept suggestions from employees to improve quality?

Yes ☐ No. ☐ Sometimes ☐

13. Who is responsible for ensuring quality in your department?

Yourself ☐ your supervisor ☐ Quality Controllers ☐ everyone ☐

14. In your department which type of reward system is being used?

Standard Production per Minute ☐

Plan Bonus ☐

Fixed Bonus ☐

15. Please indicate your feeling on the following statements, and their contribution to quality.

Bata wages motivate workers? Yes ☐ No ☐

Bata wage structure is fair? Yes ☐ No ☐

Bata wages having an effect on quality of products produced? Yes ☐ No ☐

Customer complaints are a benefit to quality improvement. Yes ☐ No ☐

16. What else do you think your company should do to improve the quality of your school shoes?

APPENDIX C

Questionnaire for Bata Quality Managers

1. Please indicate your gender.

   Female ☐ Male ☐

2. How long have you worked for the Company?

   1 – 5 years ☐ 6-10 years ☐ 11-15 years ☐ 16-20 years ☐ over 20 ☐

3. Please indicate your qualifications

   In house ☐ Diploma ☐ Degree ☐ Post Grad ☐

4. Where do you buy your raw material from?

   From everywhere and everyone Yes ☐ No ☐

   Where they are available and affordable Yes ☐ No ☐

   From sister companies Yes ☐ No ☐

   Only from reputable suppliers Yes ☐ No ☐

5. How do you test the quality of raw materials that you buy?

   ---

6. How do you assure quality of finished products?

   ---

7. What is the acceptable percentage level of reject footwear?

   ---

8. Are there any measures that have been put in place to minimize the level of rejected footwear and what are they?

---

9. Would you say the reward system in your company contributes to poor quality footwear?

---

10. If so what measures have been taken by management to rectify the problem?

……

11. Are there any laboratory tests that are done on finished products?

Yes ☐ No ☐

12. If 'yes' please give a description of those tests.

---

13. Which of the following do you think has been / is causing the greatest quality problems in shoe production?

Human factor ☐

Machine factor ☐

Material Factor ☐

Warehousing factor ☐

Product handling system by trade customers ☐

14. Would you say the state of your machinery has a bearing on the quality of the finished products?

Yes ☐ No ☐

15. Please support your answer to question 14 above.

---

16. I understand the Bata Training Centre has not been functioning for close to a decade now. How do you think if resuscitated, that would help in improving quality of school shoes?
