

**UNIVERSITY OF KWAZULU NATAL**

**THE EFFECTIVENESS OF QUALITY MANAGEMENT SYSTEMS  
POST ISO 9000 CERTIFICATION. A CASE STUDY OF ACTOM-JOHN  
THOMPSON**

**By**

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## **ABSTRACT**

The purpose of the study was to review the effectiveness of ISO quality management system post ISO certification. The focus of the study was based on three objectives selected which are based on human capital, internal auditing and improvement model towards ISO quality management system. The study was carried out using a survey in the form of structured questionnaires therefore using quantitative approach. The research population used was the Durban based John Thompson employees. From a population of 80 employees, 39 respondents participated in the study therefore giving a 49% valid response rate. The respondents comprised of 71.8% males and 28.2% females. In this study the questionnaires were self-administered since the participants were based in a local area where the researcher was also based. This was advantageous since the completed responses could be collected within a short space of time. The other advantage was that any clarifications that were required by the respondents were attended to quicker. It was also easier to introduce and explain the research topic and the importance of giving honest answers. The capturing of data was done through the excel spreadsheet and was transferred to SPSS version 24.0 for the analysis. The study highlighted that the human talent have an understanding of the maintenance that needs to be carried out in order to improve ISO quality management system as per the first objective. The study also found that the respondents understand the effectiveness of internal audit system for improving ISO quality management system as per second objective. There is however some gaps found that could limit the effectiveness of the internal audits within the organisation. The third objective was met since the respondents responded positively to the improvement methods for the ISO quality management system. The three research objectives have therefore been achieved and the findings have been made which were confirmed by the data.

It was recommended that management involve employees more with decision making as they are the ones carrying out the daily production tasks that affect the output of the products. Internal audit findings need to be communicated and discussed with the whole team instead of one individual. A formal training needs to be carried out after a procedure has been amended. Management needs to communicate with employees and inform them of the general business results.

**Keywords:** ISO quality, continuous improvement, maintenance, internal; audits.

## DECLARATION

The Registrar, I **Phindile Miya**, student number **213569337** confirm that the dissertation titled ***“The Effectiveness of Quality Management System Post ISO Certification: A case study of ACTOM John Thompson”*** is my own work and has not been submitted to any institution in part or in whole.

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## Declaration by the supervisor

I **Ana Maria De Azevedo Martins** as the candidate supervisor for the dissertation titled ***“The Effectiveness of Quality Management System Post ISO Certification: A case study of ACTOM John Thompson”*** has given permission for the dissertation to be submitted for examination.

Name: Ana Maria De Azevedo Martins

Date: 23 January 2017

Signature:

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# **CHAPTER ONE**

## **INTRODUCTION AND OVERVIEW OF THE STUDY**

### **1.1 INTRODUCTION**

In order for organisations to effectively compete globally, they require better performance. The importance of adopting quality management standards like ISO 9000 cannot be overlooked (Gotzamani et al., 2007 and Magd, 2008). Studies on the extent ISO 9000 certification has assisted in the improvements of organisations' performance have been carried out by researchers. Failure to comprehend organisational performance could have undesirable impact on the credibility of the standard (Basir et al, 2011). In order to prevent this failure, a framework that guides the maintenance of ISO 9001 would be helpful and must therefore be developed. ISO 9000:2000 adaptations stressed on customer satisfaction and continuous improvement of QMS. Continuous improvement denotes a process of growing the effectiveness of the organisations in fulfilling the quality objectives and quality policy. Therefore ISO 9000 needs managers to manage the process essential for the QMS (ISO, 2008).

The maintenance phase is essential since it involves mechanisms necessary in facilitating continuous improvement of the QMS so that it is sustainable (Wahid and Corner, 2009). Low and Omar (1997) have called for proper maintenance which entails constant monitoring, assessing, controlling and improving through technical and non-technical approaches. The non-technical aspect is the behavioural approach. This has also been echoed by Wahid and Corner (2009) who said that the human or social-cultural and technical aspects are the most imperative factors for ISO 9001 maintenance. Dahlgard, Kristensen and Kanji (2002) stressed the need for employee satisfaction and suggested a way where satisfaction can be measured and how the measures may be utilised as a tool for continuous improvement. If employee surveys may be utilised effectively, they can be catalysts for improving attitudes of employees and also creating organisational change (Saari and Judge, 2004).

Studies carried out by Fuentes et al (2000) and Williams (2004) have argued that senior management and the workforce view that they are forced to implement a standard and hence are improbable to being fully committed to the process. The implementation would thus be difficult and this has also been stressed by Yeung et al (2003) that senior management's commitment significantly affects the development of a QMS and hence the organisations' performance. According to Zelnik et al (2012), "the practise has shown that obtaining the certificate does not serve its own purpose, it merely sets the foundation for further development of the QMS". Organisations that have emphasized more on the external reasons for obtaining ISO 9000 certificate have not been successful in gaining benefits because of their narrow focus on the short term advantages of the certificate.

On the contrary, organisations that focused on developing the standard for improving quality and increasing customer satisfaction improved considerably on their performance. ISO 9001 should therefore be strategically implemented and more emphasis must be placed on internal motives (Basir et al, 2011). All employees need to be involved and focus put on continuous improvement (Williams, 2004). Employees need to be mindful of QMS when carrying out their work, otherwise the QMS serves its own purpose whilst it is a problem to management and the employees (Zelnik et al, 2012).

Quality development encompasses systems, people, techniques and the people are the most critical to develop according to Kehoe (1996). According to Demirbag and Sahadev (2008), top management's commitment is one of the most significant and critical factors in quality management since it is directly accountable for directing a proper vision, quality policy and organisational culture. A lot of studies have stressed the impact of top management's commitment to the success of ISO 9000 (Sampaio et al., 2009; Yeung et al., 2003; Poksinska et al. 2002). They also say that apart from the top management's involvement, all employees need to be also involved in the organisation.

After the completion of the implementation process and a certificate has been issued, the risk of failure is high (Zelnik et al, 2012). This would be as a result of no proper involvement from all parties (Prado et al, 2004). It is therefore important to understand

the relationship between management and employees in order for quality to be managed effectively and it must be a mutual understanding. This requires that management know how to motivate employees in order for them to become aware of the significance of their respective roles to quality management.

ISO 9000 has been in existence since the 1980s where it was first introduced and is still popular and growing. According to ISO survey 2014, 1 138 155 organisations received certification globally and 3782 South African organizations have been certified. This shows that many more organisations believe in the quality management systems and its benefits. ISO 9000 is viewed as one of the instruments that can optimise the systems and turnaround time of an organization. Furthermore, with the growing interdependence of economies and the market globalisation, most of the third world countries have incorporated quality management models for improving their productivity and competitiveness in the global markets (Adam et al, 1996).

There have been numerous writings on the implementation of ISO 9000 but very little mentioned on its maintenance or what happens after the certification phase of the QMS. The maintenance stage is important as it deals with continuous improvement and preventive action (Wahid and Corner, 2009). In order for the organization to make strides on its QMS systems, internal quality audits must be carried out. Internal quality audits are not carried out just for compliance purposes but rather to increase level of certainty and ensure continuous improvement (Wahid and Corner, 2009). This dissertation reviews the effectiveness of ISO 9000 at ACTOM John Thompson through describing the manner that the quality system is managed and results with reference to changes and improvements gained by the organization. By studying the ISO 9000 experience of this organization with findings from the previous studies in the literature, it will provide valuable understanding into the unique way quality systems are managed and the important aspects to successful and effective maintenance of ISO 9000 QMS.

## **1.2 BACKGROUND TO THE STUDY**

A study done in the New Zealand service organisations has shown that “top management, other employees, the reward system, teamwork, continuous

improvement, understanding of ISO itself, measurement of performance and communication are all critical success factors for ISO 9000 maintenance” (Wahid and Corner, 2009). A case study done on two companies showed there are similarities and differences in how they maintain their ISO 9000 with regards to how they understand and manage the aspects that are closely related with ISO 9000 maintenance (Wahid et al, 2011). The findings proved that the company that is supported by the top management has better motivated workforce (Wahid et al, 2011). Few studies have been carried out in Africa on ISO 9000 maintenance thus far for literature review and for making comparison. Therefore the main influence of the study is that it is one of the first few to explore ISO 9000 maintenance within South African service and organization sector. The findings for this study will be better meaningful in developing knowledge of ISO 9000 maintenance in the context of local industries.

The purpose of this study is to review the effectiveness of ISO 9000 post certification of ACTOM John Thompson.

The application for ISO 9000 certification is done to meet the customers’ quality requirements in order to ensure business sustainability. The reason for applying for certification was to gain long term success for the organization due to the many advantages of having an ISO certificate. The advantages include a well-documented QMS thus ensuring the two important necessities are met:

- Customer’s requirements which instils confidence to the customer that the organisation will consistently deliver the desired service or product to meet their expectations and needs.
- Organisation’s requirements both internally and externally using available resources efficiently at an optimum cost.

These requirements can truly be achieved by providing objective evidence through a form of information and data supporting the system activities from the supplier to the customer. A QMS thus allows an organization to accomplish its goals and objectives set out in its policy and strategy.

John Thompson is an Original Equipment Manufacturer (OEM) that specializes in the design, manufacture, supply, installation and commissioning of pressure parts for the

boilers and integral pipework. The boilers are used by the manufacturing industries like sugar, petroleum industries and paper to name a few.

John Thompson's vision is "being the best boiler and environmental solutions service provider, serving the power generation and industrial markets, both locally and internationally, with innovation and enthusiastic response" [www.johnthompson.co.za](http://www.johnthompson.co.za). The company adopted a quality policy in order to ensure their vision is realised. The Executive Committee of the organisation has committed itself into the ISO 9001 Quality Management System.

ISO certification was first issued to the organisation in 25 June 1992. Despite being ISO accredited, there have been some deviations during execution of most projects during implementation. The deviations results in re-work, contract duration extension and if not resolved, threatens the sustainability of the business as clients are always looking for reliable and predictable service providers.

In order to remain an engineering partner of choice for manufacturing industry, it is imperative that all elements of QMS are fulfilled to completion. The standard elements of ISO 9000 required for the organisation's QMS are:

### **1. Management responsibility**

Top Management is required to:

- develop a Quality Policy reflecting the organization's attitude to quality and ensure it is communicated throughout the organization.
- allocate appropriate resources and trained personnel to perform the work.
- appoint a management representative to monitor the Quality System.
- conduct regular management reviews to ensure the health of the quality system.

### **2. Quality system**

The quality system must:

- be fully documented within the framework of ISO 9000.
- satisfy customer's requirements and specifications.

- be adapted to your organization.
- define how quality requirements will be met.
- demonstrate thorough planning to meet customer requirements.

### **3. Design control**

All phases of product or service design (engineering) must be controlled and conducted by qualified personnel.

### **4. Document and data control;**

- All documents and data used must be controlled and authorized.
- Obsolete documents must be removed from circulation; latest issues must be located at appropriate areas throughout the facility and available at the workplace.
- Changes must be recorded and released in a controlled manner.

### **5. Control of customer supplied products**

If and when customers supply the materials for their products, you must ensure that:

- you report to the customers any discrepancy or damage to their products.
- their products can be identified easily.
- their products are handled and stored accordingly.

### **6. Purchasing**

Purchasing information must be complete and accurate. Suppliers must be qualified and selected based on demonstrated quality and must be monitored continuously.

### **7. Product identification and traceability**

Products must be identified at all times and through all phases of production.

### **8. Inspection and testing control of inspection, measuring and test equipment**

Documented verifications at all critical stages of the process must be recorded and filed i.e. receiving of raw material, work in process and final inspection. All inspection and measuring equipment e.g. gauges, thermometers, scales, test software etc. must be controlled and maintained in calibration. It is also required that unique identification

and list of all inspection and measuring equipment are provided. The required accuracy must be determined and to ensure continuing accuracy, the equipment must be protected and maintained. Each instrument must be calibrated on a pre-determined cycle according to established procedures.

#### **9. Inspection and test status**

The test status of all products must be identified through all phases of production and the test status must indicate whether the product has passed or failed inspection.

#### **10. Process control**

A complete process, with appropriate written procedures is required to perform and monitor all production activities, which affect quality.

#### **11. Control of nonconforming products**

Any nonconforming product must be properly identified and segregated (if practical) with a documented disposition.

#### **12. Corrective and preventative action**

A formal process is required to correct and prevent problems from occurring. The process will insure that the root cause is investigated, corrective and/or preventive action is taken and that the effectiveness of corrective and/or preventive is verified.

#### **13. Handling, storage, packaging and delivery**

Documented procedures are required for handling, storage, packaging, preservation and delivery.

#### **14. Internal quality audits**

Formal internal audits must be conducted to examine all activities affecting quality, and evaluate their compliance to documented procedures and ISO 9000 requirements.

#### **15. Control of quality records**

Records which demonstrate compliance to procedures and ISO-9000 must be identified, legible, accurate, filed and indexed properly, easily retrievable and retained for a specified period of time

## **16. Training**

It is required that training needs be identified, appropriate training provided, training activities be documented and it must be ensured that only trained people carry activities affecting product quality.

## **17. Servicing**

If an organization provides servicing as part of the contract, it is required to control the following:

- the design and use of the service equipment.
- use trained and qualified personnel.
- ensure product and parts availability.
- document working procedures and methods.

## **18. Statistical techniques**

Any data analysis, sampling methods, and SPC used must be based on established procedures and sound statistical techniques.

### **1.3 FOCUS OF THE STUDY**

Some studies have proved that the apparent benefits of ISO 9001 QMS decrease over time (Casadesus and Karapetrovic, 2005). This shows the importance of correct maintenance of a quality management system post the certification period. The aim of this study is to address the effectiveness of QMS ISO 9000 post certification.

### **1.4 PURPOSE OF THE STUDY**

The study addresses the effectiveness of the QMS ISO 9000 post certification of ACTOM John Thompson. An exploratory methods design will be used, and it will involve collecting quantitative data in more depth. In this quantitative study, questionnaires will be collected from the John Thompson employees at Bayhead-Durban to answer the questions based on this research objective.

The purpose of this descriptive study is to evaluate the Quality Management Systems (QMS) of ACTOM John Thompson Post Certification of ISO 9001. The study will involve collection of descriptive data through the use of the questionnaire.

### **1.5 OBJECTIVES OF THE STUDY**

The objectives of the study are to:

- Establish the role of human talent in the maintenance of QMS in the organisation;
- Determine the effectiveness of internal audit systems in identifying QMS shortfalls for continuous improvement; and
- Propose an improvement model to John Thompson on the maintenance of QMS.

### **1.6 RESEARCH QUESTIONS**

A following set of research questions will be addressed in this study:

- What is the role of human talent in the execution of QMS in the organisation?
- What are the problems associated with maintaining ISO 9000 certification in the organisation?
- What improvement models are required for John Thompson on the maintenance of QMS?

### **1.7 SIGNIFICANCE OF THE STUDY**

The study will assist in identifying blockers/inhibitors of full QMS implementation/objectives. Other additional benefits are:

- Growth of John Thompson's bottom line as a company would remain the most reliable supplier of choice through its sound QMS systems.
- Assist in the growth of other manufacturing companies (clients) by ensuring that capital projects are completed on schedule, budget and within acceptable quality to prevent rework (wasteful expenditure).

- Government and the South African Revenue Services (SARS) since a profitable John Thompson and profitable manufacturing companies will deliver more corporate tax returns to the treasury.
- Create direct employment due to growth in business and their partners and indirect employment throughout the value chain network of contractors.
- Country will gain skills development in line with governmental developmental state agenda and improve the overall competitive index.
- Elimination of downtime and safety incidents due to malfunctioning equipment.

## **1.8 ASSUMPTIONS**

According to Leedy and Ormrod (2001, 62-63), “Assumptions are what the researcher takes for granted. But taking things for granted may cause much misunderstanding. What we may tacitly assume, others may have never considered. If we act on our assumptions, and if in the final result such actions make a big difference in the outcome, we may face a situation we are totally unprepared to accept. In research we try to leave nothing to chance in the hope of preventing any misunderstanding. All assumptions that have a material bearing on the problem should be openly and unreservedly set forth. If others know the assumptions a researcher makes, they are better prepared to evaluate the conclusions that result from such assumptions. To discover your own assumptions, ask yourself, what am I taking for granted with respect to the problem? The answer will bring your assumptions into clear view”.

The assumption made for this study is that a well maintained implemented QMS is vital for driving and improving ACTOM John Thompson business performance.

## **1.9 DISSERTATION OUTLINE**

The structure of the dissertation will be organised into five chapters briefly outlining the following content:

### **Chapter1 – Introduction and Overview of the Study**

Chapter 1 describes the problem statement, which outlines the background for the research component of the study. The introduction states the aim and objectives,

research questions, the significance of the research and a brief summary of the research methodology adopted.

## **Chapter 2 – Literature Review**

This chapter reviews the current state of the subject matter and the relevant literature regarding ISO 9000 quality management systems. The chapter will attempt to identify the research gaps which justify the need for this study.

## **Chapter 3 – Research Methodology**

Chapter 3 will describe the design of the research essential for answering the research questions. The research plan, questionnaire, sample design and data collection methods will be outlined in this chapter.

## **Chapter 4 – Presentation and Discussion of Results**

This chapter will outline the questionnaire surveys and the data analysis. The results arising from the analysis of data received from the focus group would be evaluated and validated from the initial framework. The research findings will then be presented in a finalised framework.

## **Chapter 5 – Conclusion and Recommendations**

The main conclusions of the study will be presented and outlines the contribution of the study output to the general body of knowledge and any future policies. Limitations of the current study will also be acknowledged and recommendations given for the future research.

### **1.10 DELINEATION OF THE RESEARCH**

The study will be carried out at the John Thompson Durban branch only as the researcher is also based in this division.

### **1.11 SUMMARY**

Chapter 1 presented the introduction and background of the study as well as the purpose and significance of the study which was clearly outlined. The objectives of the study were also presented which are necessary for answering the questions of the

research. The following chapter will present the literature review in accordance with the research objectives.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 INTRODUCTION**

The new ideas presented in this study are based on the assessment on the current and previous literature of the topic. The purpose of the literature review is to present an overview of the ideas, theories and the relevant literature to the readers currently

published. The researcher's task in writing a literature review is therefore not to just summarize the previous research but to also critically review the research connected to the topic and then present your viewpoint as a way of establishing your credibility. Literature was reviewed through the use of publications inclusive of journals, books, conference proceedings and through the internet. A lot of effort has been made to use the latest publications wherever possible, however due to the limited number of studies carried out for this study, there may be older publications used.

Whilst the number of ISO 9000 certified companies is increasing, there is no correlation of a clear understanding and significance of an efficient QMS (Low and Omar, 1997). Wahid (2012) contended that the total QMS maintenance of the organization is an essential activity because it prevents lack of progress of quality management process including its conversion into sound actions on all organization stages. Continuous maintenance is required for satisfying the surveillance visits by registrars and the monitoring and improving the system (Chin et al, 2000 and Wahid 2012). The consultations led by Chin et al (2000) with the electronics manufacturing companies' quality auditors and quality assurance managers, they attested that contributing factors responsible for the accomplishment of ISO 9000 maintenance are teamwork, management commitment and companywide ISO recognition. These findings have also been proved by Wahid (2012) and developed a framework for ISO 9000 maintenance in service based on her findings.

## **2.2 HUMAN CONSTRUCT**

### **2.2.1 Definition of Human capital**

Human capital is defined by Matthewman and Matignon (2004) as the knowledge, competencies, skills and other qualities personified in individuals or groups acquired throughout their life and used to produce services, goods or ideas in market circumstances. Subramaniam and Youndt (2005) explain it as knowledge, abilities and skills residing with and used by people. People generate, use and retain the knowledge and skills and create intellectual capital (Matthewman and Matignon, 2004). Human capital describes the connection between human resources practices and business performance regarding terms of assets instead of business processes (Armstrong, 2010).

There are three elements which make up human capital according to Armstrong (2010):

- *Intellectual capital* which is the available stocks and flows of knowledge to the organisation;
- *Organisational capital* which is institutionalised knowledge that the organisation possesses and is kept in databases, manuals and other forms; and
- *Social capital* which is knowledge resulting from networks of relationships inside and outside the organisation.

A study carried out by Scarbrough and Elias (2002) where they explored the human capital management and reporting practices amongst twelve organizations drew four deductions (Matthewman and Matignon, 2004):

- Human capital needs to be seen as a linking concept connecting business strategy and human resources practices;
- Human construct is an unwarranted asset as the possible movement of employees can weaken the ability of an organization to deliver;
- It is an inconsistent asset as the individual's qualities they bring; flexibility, personal commitment and mobility which are the aspects that build competitive value are also the most challenging to measure; and
- The measurement of human capital is context dependent.

Human capital management has been defined by the Department of Trade and Industry's Accounting for People (DTI's AfP) as a tactical method to people management which concentrates on the critical matters to the victory of the organization (Matthewman and Matignon, 2004). Mercer Human Resource Consulting defines human capital strategy as some sort of asset management i.e. a plan for securing, motivating and managing the labour force proficient in realizing the goals of the business. The distinction on this is that human capital goes further than the human resources role and incorporates the entire people strategy of the organization as well as management practices required in optimizing performance and drives the value creation. Therefore human capital belongs to the entire leaders of the business and exists in every individual of the organization. A study carried out by CFO Research

Services (2003) projected that the human capital value represented above 36% of the total revenue in a company.

### **2.2.2 Frameworks of human capital measurement and models**

According to the AfP's task force, the reporting of the human capital management needs to exhibit a connection between people management and business performance. Several models and approaches exist for developing an HR strategy and connecting it to the requirements of the organization (Matthewman and Matignon, 2004). The task force however did not set any detailed direction of which methodology to apply or framework to adopt.

Matthewman and Matigon (2004) presented the most popular models and frameworks used for measuring human capital. Some organisations apply each one of them to configure their philosophy on HR strategy even though in several cases the models are reformed and designed for each organisation's specific needs. The main criteria is developing or adjusting a method which fits best the management style and thinking of the organisation so as to generate an outline that links how the people are managed with the business strategy's delivery. They therefore profiled the following models:

- The balanced scorecard;
- The human resource benchmarking model;
- The human capital Index;
- The human capital Monitor;
- The organisational performance model; and
- The engagement model.

#### **(a) The balanced scorecard**

Balanced scorecard is one of the most commonly known methods. It connects the people's dimension evaluation to the company's strategic objectives. This method was developed by Kaplan and Norton (1996) to counter the companies' short term financial focus tendencies. The scorecard initially had four fundamentals which were customer, financial, internal business process and learning and growing (Matthewman and Matignon, 2004). More than 32 percent of large companies in the UK were reported by Deloitte & Touche and Personnel Today (2002) to be applying the balanced

scorecard method. The model shows each element within a system representing several objectives as a foundation for setting targets.

Amongst the leading advantages of the balanced scorecard is its offering of a simple communication instrument for both the inner and outside stakeholders which can be relayed from company to subdivision as well as individual levels. Some organizations have over-designed the number of metrics and therefore employees feel inundated by the measures and targets and are destined to not make it (Matthewman and Matignon, 2004). Balanced scorecard by description is background driven and beneficial for internal reporting however it carries minor importance for external reporting.

### **(b) The human resource benchmarking model**

A comprehensive database of employee performance indicators is maintained by EP-first and Saratoga and emphasizes that it is vital to transform the benchmarking data into information that enhances value. They recommend the following method in transforming benchmarking data into effect:

- Decide on where the improvement is vital;
- Establish the parameters you are looking for;
- Establish the benchmarking team;
- Specify the data;
- Collect the data;
- Find suitable benchmarking partners;
- Analyse the results; and
- Implement.

### **(c) The Human Capital Index**

An investigation into companies that connected their key management practices with their market value was constructed by Watson Wyatt Worldwide (2002). This survey was initially based in the US research but was also extended to Europe; it connected the shareholder value creation with vital HR practices evidence. The results were shown in the Human Capital Index since it was a lead indicator of the human capital shareholder value (Watson Wyatt Worldwide 2002), it was decided that four main

classes of the HR practices could be connected to 30 percent growth in the shareholder value as outlined in Table 2.1 below.

**Table 2.1: The Human Capital Index**

<b>Practice</b>	<b>Impact on market value</b>
Total rewards and accountability	16.5%
Collegial, flexible workplace	9%
Recruiting and retention excellence	7.9%
Communication integrity	7.1%

*Adapted from: Watson Wyatt Worldwide (2002)*

The important practices are:

- Total rewards and accountability which distinguishes between top and bottom performers;
- Friendly and flexible workplace which is an environment that encourages cooperation and teamwork;
- Recruiting and retention excellence by developing recruitment practices that will support the organisation's strategic aims; and
- Communication integrity strategy where organisation's goals are clearly communicated and there's a high level of business processes transparency.

The human capital index method puts more focus on the best practice notion of HR policies that enhance value rather than the best fit method which is used in models presented thereafter (Watson Wyatt Worldwide, 2002). Based on wide correlations and aggregated data from the survey, it does not offer a definite company position to evaluate a given organisation's human capital. It is also uncertain whether the best executing organisations implement these best practices or if these practices lead to high performance.

#### **(d) The Human Capital Monitor**

Andrew Mayo (2001) carried out an investigation into the human value of the enterprise or the worth of a human asset. He stressed that people must be taken as assets instead of a cost. The key encounters are:

- How to develop a framework of people related metrics which encompasses the organisation's overall performance;
- How should an organisation recognize the intrinsic diversity in its people's worth and value it; and
- A method to quantify the financial and non-financial value of stakeholders.

Mayo emphasises the importance of obtaining applicable and dependable data of these assets inside the organization prior to publishing it externally. The Human Capital Monitor offers a method for measuring the worth of human asset of individual employees. The worth of a human asset is defined as being equivalent to 'employment cost x individual asset multiplier/1000' (Watson Wyatt Worldwide, 2002). The answer is a weighted average assessment of competence, growth potential, personal contribution/performance and alignment of organizational values context of the workforce environment.

This approach, as with the other most defined in this section, is tailored where an absolute figure is not essential. The measurement process directs a person to contemplate if human capital is satisfactory, increasing or decreasing and also highlights issues that need to be addressed. He warns of not applying too many methods but to stick to less pertinent measures of the enterprise which are essential in forming shareholder value and present and future organisational goals.

#### **(e) The organisational performance model**

The organisational performance model has been adopted and tested by a number of organisations since 1994. An organisation's human capital strategy comprises of six interrelated factors i.e. work processes, people, managerial structure, decision making, information and knowledge, and rewards.

#### **People**

This relates to the employees, their talents and aptitudes on recruiting, the skills and competencies they gain from experience and training, their levels of qualification and the degree they use company definite or generalized workforce.

#### **Work procedures**

This relates to the way work is carried out, the level of collaboration and interdependence between the organisation's units and the technology's role.

### **Managerial structure**

This relates to the level of employee will, the direction and control of management, performance management, spans of control and work procedures.

### **Information and knowledge**

This concerns how data is distributed and shared between the personnel and customers and suppliers via official and casual channels.

### **Decision making**

This relates to how essential resolutions are made and who also makes this decisions, the level of decentralization, involvement and timelines of decisions.

### **Rewards**

This means how the incentives are used (monetary or non-monetary), how much pay is at risk, current as opposed to long term career rewards and individual versus group rewards.

### **(f) The engagement model**

This model was from the research done by Sears Roebuck (2013) which focused on the employee-customer turnover sequence. It states that if the personnel are kept satisfied, they help by ensuring that the customers also continue to be satisfied and will therefore in turn ensure and also improve the organisation's profit. The results of these connections by Sears have been adopted in the UK by a number of organisations. Measuring and improving employee satisfaction has thus become essential for many organisations particularly the retail and service sectors.

In summary, organisations need to set up a human capital management within the context of their organisation and choose and develop an applicable framework for measurement. The next step will be to define a human capital management of the organisation.

### **2.2.3 The Link between ISO 9000 maintenance and Human Capital**

From previous literature reviews, it is not yet clear on how ISO 9000 implementation relates to the performance paybacks. More precisely, it is still vague how ISO 9000 practices are converted into an organisation's capital and how the accrued capital turns into greater performance hence further research is required. This research will

look at the role of the workforce in achieving improved process and increased performance of the operations.

There is an undeniable influence of ISO 9000 standards towards the knowledge structure of the organisation. According to Ataseven et al. (2014) tacit knowledge is connected to the action, pledge and participation in line with a particular context and is stored in the human mind. While it is not formalised but tacit knowledge forms the perceptions and perspectives of human subjects. The opposite of this which is codified knowledge is transmitted through formal and systematic languages. Knowledge management reflects two types of conversion in which tacit knowledge interacts with each other in network relationships (Ataseven et al, 2014).

Human capital building blocks are bright, skilled, creative personnel with know-how in their functions and roles and they create the main foundation of new concepts and knowledge in the organisation (Ataseven et al, 2014). Therefore human capital needs recruitment, training and retention of workforce. Even though human capital is entrenched in specific expertise, it is possible that it may not be retained within organisations because of the mobility of the employees. It is therefore important to keep manuals, patents, databases and licences in order to preserve and codify knowledge as well as to establish processes, structures, and procedures which will encourage frequent use of this knowledge (Hansen et al, 1999). In this way, the knowledge is retained within the organisation and does not easily change since organisational capital is connected to the codification and safeguarding of knowledge via the organised and recurring activities.

The link between ISO 9000 and human capital has not been discussed a lot previously but the involvement of employees is very critical in an organisation. This is also true during an implementation of different organisation-wide programs and procedures (Ataseven et al, 2014). The realisation of these programs depends on the employee's perceptions, acceptance and communication of the new practices within the work place. Many quality management lessons have stressed the input of personnel for outstanding performance hence managers must completely influence personnel about the qualities of ISO 9000 quality system. According to Karapetrovic and Willborn (2001), managers must ensure that personnel possess the necessary skills to

implement modern quality systems. The necessary training efforts need to be undertaken if the essential skills are not freely obtainable.

Organisational knowledge is transferred through people and through the means of technology. Knowledge transfer is then carried out through networks that can manifest in terms of associations amongst affiliates of the organisation e.g. social networks by ways of organisational routines and technological networks (Ataseven et al, 2014). According to Barney (1991), the firm's resources are classified mainly into human, physical and organisational assets. The intangible resources with ISO 9000 of skilled people and entrenched knowledge are converted into incomparable assets. After this has been achieved, ISO 9000 is now beyond certification and turns as a basis of competitive advantage due to the increased skills and competencies of the organisational personnel, improved use of knowledge and information as well as higher levels of motivation (Ataseven et al, 2014).

According to Kehoe (1996), quality development includes systems, people and systems and the people are the most important to grow. This is also resonated by Low and Alfelor (2000) who suggested two approaches in ISO 9000 i.e. technical and non-technical approaches. Employees whose jobs involve product quality should be skilled to deliver their duties. In order to deliver they need to have proper education, skills, training and experience. Findings done by Fuentes et al (2000) and ISO Survey (2004) showed that the top management and the shop floor employees also require training to add to their knowledge. Studies carried out by Wahid and Corner (2009) as well as a case study done by ISO 9001 on certified Malaysian service organisations showed that employee training was carried out on a continuous basis to increase their understanding of ISO 9001.

The work environment required to achieve conformity to product necessities must be determined and managed well (ISO, 2008). This necessity is part of a need for good leadership and this has been highly emphasized in the quality management principles. A leader needs to create and develop a spirit of trust and innovation amongst the organisation (Van Der Water, 2000). ISO (2008) stressed the importance of employee involvement and contribution to be recognised. This has also been resonated by

Wahid and Corner (2009) that the reward system is part of the critical success factors in the ISO 9001 maintenance.

#### **2.2.4 The Link between ISO 9000 maintenance and Social Capital**

Enhanced employee capabilities and enriched knowledge distribution practices in the organisation can help form shared systems, understandings and interpretations amid organisational bodies which in turn form better organisational cultures (Ataseven et al, 2014). The connections among tacit and explicit knowledge have been stressed in the extent of operations management literature by Bendoly et al (2007). There are important elements that are constituted by group interactions in disseminating knowledge within organisations. Additionally teamwork and collaboration increases the usage of institutionalized knowledge by updating it and also reinforcing it.

The network concept is vital particularly in the distribution process of knowledge since employees engage with each other and the tasks and pools of knowledge of the organisation to reach consensus of the objectives. The competences therefore of the personnel together with information distribution methods prepares for information networking/exchange. According to Ataseven et al (2014), “collective understanding of the shared knowledge and congruence of goals directed by the ISO 9000 standards is achieved via employees that are social actors and their information exchange”. Both dimensions of information exchange and social capital are at work in this case. Shared experiences and knowledge amongst networks improve common perspectives and also form a shared basis for understanding.

In summary, ISO implementation involves individual and group knowledge conversions which occur among parties involved in business relationships (Ataseven et al, 2014). The common understanding between the main organisation and its partners is required by the quality management standard. Since the perception of the customer is what determines the quality, it is vital to understand the customer. Furthermore, in order to deliver the expected quality according to the customer's perception, suppliers need to also understand the necessities and specifications of the organisation. There is vast information sharing and knowledge accumulation within the process to ensure this relationship is a success.

Employee participation including training and education has a vital part in the process improvement quest as it fosters smooth carrying out of ISO 9000 standards. Previous literature studies have emphasized an important role of the abilities of people in realising continuous improvement (Low and Omar, 1997 and Wahid, 2012). In this way, the people's ability to apply their knowledge in performing their duties is a form of strategic asset for organisations (Ataseven, 2014). Combining personal knowledge and organisational systems permits employees to come up with solutions independently and this plays a critical role in increasing the performance of the organisation (Davenport et al, 2000).

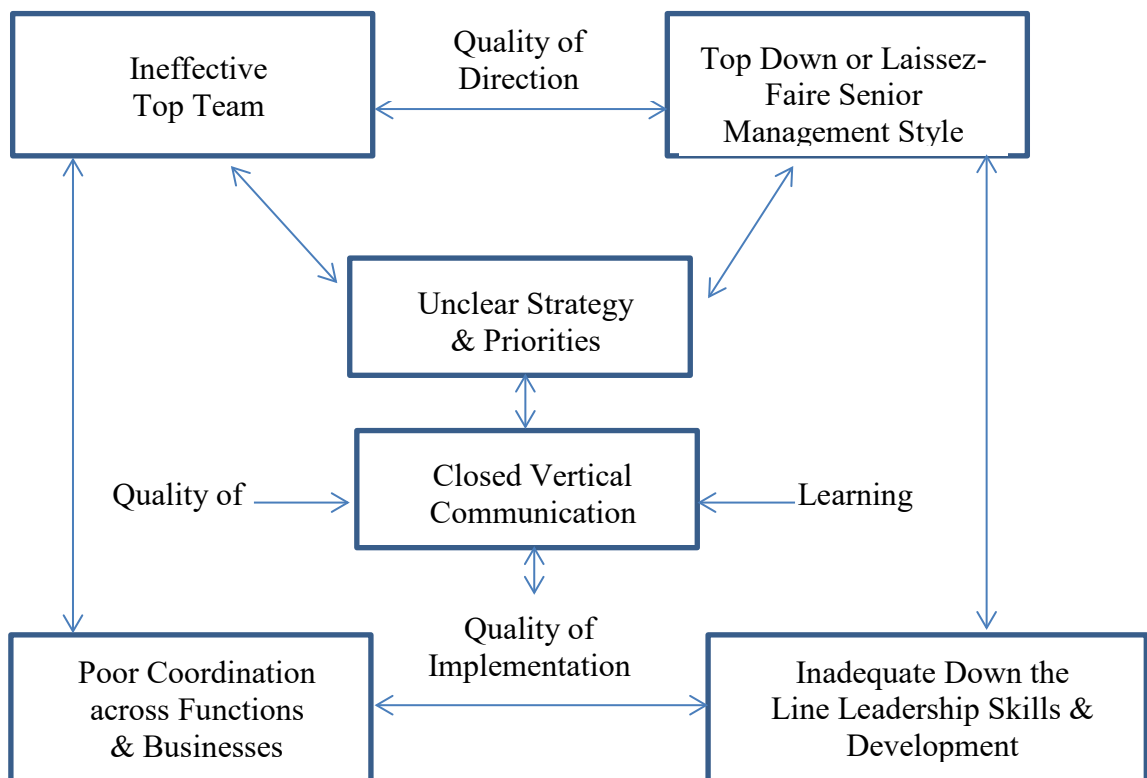
The main point is to build a link between the quality management system of the organisation's work processes and also to use the employee's knowledge for producing quick solutions to the customer's requirements. The work processes can thus be improved due to the employee's confidence because of the gained expertise, abilities and personal knowledge and all these bring optimistic changes to the efficiency and effectiveness of the organisations' processes (Davenport et al, 2000). The majority of the positive changes are due to the fact that process improvements always involve innovative elements from the skilled employees within the organisation (Subramaniam, 2005). The talent for improving processes is centred on the capability of personnel in analysing the processes as "process owners" and suggesting the fitting solutions (Ataseven, 2014). Whilst employees frequently use their knowledge and quality information in solving teething troubles, they generate new knowledge which will prompt improvement opportunities thereby being proactive rather than reactive. In the end, well trained and competent personnel allows the company to follow suitable execution of processes and add to the present processes by establishing unique and better means of structuring these processes (Subramaniam, 2005).

### **2.3 WEAKNESS OF MANAGEMENT'S ATTITUDE TOWARDS QUALITY MANAGEMENT SYSTEM**

According to Beer (2003), the outline and execution of QMS is constantly conditioned by the management's readiness as they normally provide the initiative. He then provided a suggestion for which management can adopt when implementing a QMS:

- They must form a proficient discussion applying a vertical hierarchy (top-down) and horizontally among business processes;
- They need to inspire their personnel to become conscious of quality with their own initiative, adjustments and improvements;
- They need to make a business climate where personnel are free to talk about difficulties of improving quality freely; and
- They need to participate actively in the employment of a team based organisation.

Beer (2003) moreover offered hindrances that can result to a division of goals between management and the real path of actions within the organisation's QMS. The answers are represented in a schematic diagram pertaining to these issues and can be revealed within the dynamics of management's attitude towards quality as shown in Figure 2.1 below.



## **Figure 2.1: The dynamics of bad relations in QMS regarding management**

**Source: Beer (2003)**

### **2.4 EMPLOYEE SATISFACTION AND MANAGING QUALITY**

Quality involves the observation of the employees and knowing their attitude to work, knowledge and the organisation of company operations (Zelnik et al, 2012). This needs to be formed within the organisation as this is what a complete QMS is built on.

It is easier to motivate and involve personnel more in the organisation when they possess better knowledge of the standard (Park et al, 2007). Obedience to QMS can be stimulated by promoting reflection of their own work informally and promoting an environment where personnel are at ease to voice out challenges and near miss accidents (Turusbekoza et al, 2007). Various communication channels can be provided by an organization in order to promote employee communication and sharing of knowledge. Managers need to express their priorities and expectations to the employees in order to improve commitment to quality with well-designed communication (Demirbag & Sahadev, 2008).

The notion that human capital is the real foundation of an organisation's competitive advantage shows the importance of intangible assets for an organisation. Carmeli and Tischler (2004) showed that intangible elements of an organisation such as human capital, managerial capabilities, labour relations, internal auditing, organisational culture and apparent organisational reputation can individually affect the organisational financial performance positively. The same sentiment has been shared by Fulmer et al. (2003) that constructive personnel relations were strong indicators of financial performance. A company can therefore only be successful through highly motivated workforce (Zelnik et al., 2012).

## **2.5 THE QUALITY REPRESENTATIVE: LINK BETWEEN MANAGEMENT AND EMPLOYEES**

Top management need to utilise the management review (ISO 9001:2000, item 5.6) as a tool in establishing and maintaining an efficient QMS. The management review's task is to help correct probable non compliances and device corrective methods as well as communication with employees. The quality representative is the connection between information and processes of administrators managing their own sections, top management reports on the results and the applicable improvements and employees receiving information in a top-down manner (Zelnik et al, 2012). A quality representative is therefore a vertical communication link who deals with raising consciousness between management and personnel in terms of quality in general.

It is therefore vital that the representative is mindful of the importance of top management to participate in the monitoring of the QMS and to express the culture of managing QMS. Since the quality representative is connected with the top management's authority, the representative needs to draw the attention of top management and utilise their commitment of continuously refining the business process and encouraging employees. The quality representative would then just need to raise awareness of quality once he has managed to attract the attention of top management. One of the ways to ensure cooperation of employees is to take account satisfaction of employees in the communication agenda with management. The next sensible step of the quality representative is to develop a method of measuring employee satisfaction which will in turn establish a two-way communication.

## **2.6 QMS ALIGNMENT TO BUSINESS STRATEGY**

There have been numerous studies carried out on the implementation of ISO 9001 in different sizes of organisations both in manufacturing and service sectors e.g. (Lipovatz et al, 1999; Bhuiyan and Alam, 2005; Poksinska et al, 2006; Karim et al, 2005). Many organisations are certified for ISO 9000, and the real challenge is making sure that this compliance is continuously significant to the organisation and assists it in attaining the goals of the business (West, 2002).

Quality is a strategic issue which is why top management must be the driving force behind QMS (Van Eeden, 2004). The implementation of QMS is expensive and occasionally produces short term results. The long term payoff however depends greatly on the management's success in inspiring a culture within the QMS philosophies and practices flourish to accomplish the targets and performance measures that the company strategy needs. If the strategy and the performance target measures are in line and if all the members of the organisation buy into the continuous improvement process, then the work environment will be favourable to the execution of proficient strategy and good business performance.

It is the portfolio of talent that makes or breaks an organisation from the top of the chain to the bottom. The type of people a company hires and how it nurtures them determines whether it will prosper today and in future. A survey done by IBM in 2012 revealed that 71% of CEO's replied that they view human capital as a crucial source of sustained economic value, (Global CEO Study, 2012). True talent management requires careful and thoughtful planning, (PMI, 2013). Organisations must not only ensure their employees have technical talent but also leadership and management skills are necessary for ensuring the job gets done (PMI, 2013).

A talent portfolio built in line with the organisation's strategic objectives ensures right people are placed on the right projects, PMI (2013). According to PMI's Pulse of the Profession In-Depth Report (2013), organisations whose organisational strategy is aligned with the talent management have 72% average project success rate compared to 58% of organisations with poor alignment. Organisations need to equip themselves with people with adequate skills to excel inside a shifting paradigm.

A new shift of focus now requires having human talent with skills and capabilities to deliver excellence currently and in the future. A survey done by PWC in 2013 showed that 77% of global CEO's said they anticipate making changes to their talent management strategies and 23% of the CEO's were planning major shifts.

Competition is tough within organisations and not having the right talent can temper with the company's competitive edge. In order to stay on the competitive edge, organisations need to align their talent management programs to their business

strategy (PMI, 2013). The Pulse Talent Report (2013) revealed that organisations report that not having qualified talent has led to:

- 31% decline in quality;
- 29% inability to effectively innovate; and
- 27% withdrawal or deferral of strategic initiatives.

The above statistics are concerning and highlight the need for organisations to bring into line their talent management programmes to their complete business strategy.

A good example of such an organisation is Fluor which is a global construction and engineering firm based in Irving, Texas in the United States of America. Fluor synchronises its medium to long term strategic business goals with its talent management initiatives thus ensuring its global portfolio of project professionals satisfies its future needs. An executive Council Member of the global PMI attested that they track the company's current employees training record, certifications and experience in order to take future roles and fill skills gaps with new employees (PMI, 2013). This type of strategic planning is very important for an organisation that is in need of good project and program managers especially if these skills are hard to find. Therefore if a company wants to grow within the global and emerging markets, it would have to create a human capital pipeline today.

A case study done at the University of Texas MD Cancer Centre clearly defined the skills, competencies and experiences it required for its project professionals. It then aligned its defined skills and competencies with the company's IT project management career hierarchy. This was followed by creating a tiered structure of project management superiority with its specific competencies, experiences, tasks and training requirements (PMI, 2013).

By creating a career path for the company showed the employees that they are a valued part of the organization (Layne P. and the centre's directors). Employees are also given tools to draw their career paths thus mapping their future plans with their managers to block the competency gaps. A study done by Corporate Executive Board (2012) showed that employees most devoted to the organisation gave 57% more effort

and were 87% less expected to resign than employees who saw themselves disconnected from the organisation.

A conclusion by Maull et al. (2001) was that organisational culture is a catalyst in maintaining quality management effectively. Studies carried out by Boon et al. (2003), Torre et al. (2001), Wahid and Corner (2009) and Sharif (2005) listed a number of barriers in ISO 9000 maintenance that can be categorised as organisational culture elements. The barriers are lack of top management commitment, lack of teamwork, negative response from managers, lack of quality awareness, employees' ignorance on the quality management system itself, lack of training, lack of participation from personnel, lack of understanding and misinterpretation of the standard, lack of quality awareness, lack of training, lack of motivation programmes, lack of reward, lack of communication and lack of coordination between departments.

Since the top management have a critical role to play in ISO 9000 adoption, they must therefore embrace the elements of organisational culture that align with it. If management regularly contribute in the project activities like briefings, meeting and training, it would make a huge difference to ensuring organisational quality policy is communicated, implemented, understood and maintained (Wahid, 2012).

A participative work culture is stimulated when quality is everyone's responsibility. The success of quality improvement also depends on every employee's understanding of their customer's needs whether internal or external. Each and every employee in the value chain is a customer of the preceding employees in the value chain and each had customers, who are the people who receive the results of his or her work (Van Eeden, 2004).

Highest quality and customer satisfaction are the driving forces of QMS and the major role players to the accomplishment of the process is the company including the top management, all employees, customers and the suppliers. QMS is a companywide drive towards continuous improvement of the quality in all facets of the company's processes, services and products to the customer. In order for it to be successful, a company quality culture is required and should be a philosophy driven from the top management to the lowest level staff. QMS should be a form of involvement,

empowerment, participation and ongoing commitment of all employees in all levels of a company.

ISO 9001 gives a simple quality management system based on realising customer needs therefore organisations are able to form better vigorous systems to improve business results. In order to move beyond just the mere standards compliance to a better quantifiable, profit making achievement needs an understanding of how a business interrelates with management philosophy. Another method of doing this is by aligning QMS with the organisations business objectives (strategy).

A requirement of ISO 9001 is that an organisation's quality policy gives a structure for the assessment of the company's quality objectives (West, 2002). The policy must provide guidance for the company with its objectives flowing into that route. There are however external forces like market environments and customer requirements that may change the business conditions. When this occurs, it can skew the alignment between quality policy and objectives. This therefore needs management to regularly review amendments to the policy and objectives (West, 2002). A company's finding statements must be realistic and measurable and its QMS procedures must be designed such that the objectives are met.

Another advantage of aligning the QMS processes, quality objectives and quality policy is that it furthers top management's intent regarding quality. The only drawback is that ISO 9001:2000 does not report alignment of the quality policy and objectives with other business goals (West, 2002). The problem with misalignment of quality policy and business objectives is that it may cause confusion regarding accountability and the quality objectives may become little more than responsibilities allocated to the quality department (West, 2002). There would also be problems with resource allocation when middle managers try to achieve goals which are not in line with quality objectives. A company's overall business objectives, quality policy and quality objectives should be interrelated and should work together in achieving business improvements.

An additional benefit of combining a holistic remedial method with other problem solving tasks streamlines training and directs daily activities on important matters like

optimising resources. Every remedial action task must be seen as an assignment for improvement and the resources dedicated to each project must be equivalent to the importance of the problem (West, 2002). There needs to be a different way of handling preventive action. According to West (2002) the true preventative measure recognizes failure threats, ranks them according to priority and acts to avoid that they occur. This concept is called loss prevention in ISO 9004:2000. It is mostly proficient when new processes and products are developed as well as when new equipment is purchased. The key to integrating and realizing continual improvement when new developments are undertaken is through the application of tools like failure mode, asking “what if” questions and effect analysis.

## **2.7 INTERNAL AUDIT SYSTEMS**

Quality audits have been largely used by organisations after the introduction of ISO 9000 in the 1980s (Karapetrovic and Willborn, 2001). The fundamental purposes of audits have been traditionally to confirm the ISO standards compliance and also to remove nonconformities (Karapetrovic and Willborn, 2001; Alic and Rusjan, 2010). It has been emphasized in numerous studies about the importance and benefits if ISO 9000 certification. According to ISO survey 2014, 1 138 155 organisations received certification globally and 3782 South African organisations have been certified. This shows that many more organisations believe in the quality management systems and its benefits.

Hernandez (2010) defines internal auditing as “an appraisal of the company processes to determine if they are operating within their documented procedures and whether they are effective for their stated intent”. Auditing is not some kind of criticism to employees but rather an assessment of the processes and is there to assist them by ensuring that process problems are fixed in a more effective manner. The other advantage of internal auditing is that it goes beyond just offering statistical failure data but it also sets the stages for continuous improvement culture (Hernandez, 2010).

According to ISO (2008), the purpose of internal audits is to confirm compliance as per ISO 9000 requirements. According to Wealleans (2000), the purpose of internal audits is to ascertain whether QMS is applicable to the objectives of the organisation.

Additionally he encourages that internal auditors embrace a professional approach and familiarise themselves with how the organisation operates and its internal culture. The organisation should also play their part by recognising the internal auditors' recommendations for improvements.

### **2.7.1 Requirements of internal audits**

After the objectives of internal audits have been clearly defined, the criteria of audits can then be chosen (Wahlman, 2004). The regulation of the use of company's internal audits is documented in requirement 8.2.2 of the ISO 9001:2008 standard. The standard states that an organisation shall conduct internal audits at planned intervals (SIS, 2008). This should be done for determining if QMS (SIS, 2008) conforms to the other necessities of the ISO 9001 standard and of the QMS itself; complies with the planned arrangements and if it is implemented and maintained effectively. Objectivity and impartiality must be applied when carrying out the audits. The methodology, scope, measures and frequency of audits must be defined. A planned audit programme must be done with documented procedures and the proceedings of the audits must be well maintained (SIS, 2008).

The quality manual must entail a detailed process of performing internal audits and must be followed at prescript dates as per the annual audit programme. The internal audit is there to assure the management that the established procedures are being adhered to. The audit therefore contains a list of steps in the procedure that are critical in determining the overall product quality (Hernandez, 2010). It must be designed such that it answers the three basic questions of the organisation being audited:

- Does the organisation have a quality system?
- If there is a quality system, is it being followed?
- Is the system effective? (Hernandez, 2010)

There are two main roles involved when internal quality audit is being conducted i.e. auditor and auditee. The auditor plays the role of conducting and leading the audit whilst the auditee is the person who answers the audit questions from the audited area. Collection of information about the audited area is the first step to be done when conducting a quality audit. Different activities will thereafter be examined within the

audited area through interviewing and observing key personnel linked to the process and also observing the process. Whatever findings, nonconformities or improvement suggestions are recorded in the audit report and must be communicated to the personnel and managers. A quality audit therefore is a tool used to verify if a process mirrors how the actual work is done compared to the procedure of the company (Wealleans, 2000).

In order for internal audits to be a viable tool, the following requirements must be met (Hirth, 2008):

- Audits must be objective and independent;
- Audits must serve as a consulting tool which will enhance value to the organisation; and
- Audits must further develop the operations and allow the organisation to attain its objective through disciplined and systematic efficiency.

More value can be realised by the company if internal audit process is focused on improving the processes and just on maintaining compliance. One of the main elements of ISO 9001 QMS is process improvement, this must be amongst the company's key motivators for wanting to implement and maintain a QMS. Process improvement helps by increasing the efficiency; saves time as well money of the company. In order to fully realise the benefits of quality audits i.e. the entire ISO 9001 standards, the management's support and interest is critical (SIS, 2014b; Rippin et al. 1994, referred in Devadasan & Rajendran 2005, 374).

The internal audit results must be communicated to the area audited in order for the management to take corrective action on logged non-conformances (Wahid, 2012). The decision for corrective and preventative action must be taken after all facts have been gathered and investigated. Corrective action in actual fact shows the necessary improvement agenda for ISO 9000 (Wahid, 2012). The organisation needs to develop a process for removing/reducing causes of non-conformities and preventing return of the same findings. In order to prevent recurrence, Wealleans (2000) suggests that companies avoid the blame exercise in dealing with non-compliance issues. He recommends a positive culture to be encouraged at all levels. A case study conducted by Alhatmi (2010) in Oman found that ISO 9001 certified hospitals implemented a

concept of transparency and continuously promoting a no blame culture thereby reducing the chances of spreading a destructive and apprehensive approach to auditing and inspires process ownership.

Studies carried out by Dzus and Sykes (1993) and McCullough and Laurie (1995) found another key failure was due to the absence of active internal corrective procedures after the system had identified non-conformances and insufficiencies, this was because the failed companies did not recognise the significance of ISO 9000 maintenance and lacked efficient methods for maintaining their quality systems after ISO 9000 certification. The authors also mentioned that lack of ISO 9000 standards understanding and challenges in carrying out corrective and preventative action, information control, documents and internal audits are also obstructions to ISO maintenance. Lee et al. (1999) and Chin et al. (2000) found that other difficulties connected with after registration of ISO 9000 are the resistance to change in quality culture among personnel and inadequate resources for training and education of personnel.

The importance of audits being moved from just focusing on nonconformities to also focusing on continuous improvement and effectiveness is emphasised by O'Hanlon (2002). This can be realised when auditors not only focusing on examining how the process works but also focus on their key purpose for existence. It is also critical to evaluate how well the processes are incorporated with the organisation's other processes (O'Hanlon, 2002). In order for continuous improvement to be initiated, three conditions must be met (Forsha, 1992 and Karapetrovic & Willborn, 2001):

- Identify the problem;
- There must be a motivation for fixing the problem;
- Necessary action must be taken.

It is also important to measure the improved process otherwise it will be difficult to recognise any improvement (Karapetrovic & Willborn, 2001).

The motivation behind an organisation's introduction of QMS will determine the result of carrying out internal audits. If the motivation for the organisation was based on the customer's demand for obtaining a certificate, there will be little effects of the

implementation (Alic & Rusjan, 2010). No concrete evidence has been shown that obtaining an ISO 9001 certificate will result in the company performing better (Singels et al. 2001 and Alic & Rusjan, 2010).

When the management is fully committed to internal audits, they will change their focus of looking at non-conformances to focusing on continuous improvement (Alic & Rusjan, 2010). Nichols (2012) recommends that the scheduling of audits must be done via a “pull system” which is given by the need of managers instead of a “push system” where the audits are arranged based on a time interval. Scheduling through a push system poses a risk of missing vital processes (Nichols, 2012).

The attitude of continuous improvement boosts the overall quality of the processes and keeps the customers satisfied (Ketola & Roberts, 2001). Continuous improvement stage is essential for an organisation that wants to continuously progress and gain long term benefits of having QMS. Corner (2009) also agrees that the maintenance phase is essential because it involves devices essential for facilitating continuous improvement of the QMS for sustainability. Maintenance of QMS is defined by Van De Water (2000) as “the application of management concepts to aspects of the process of quality management with the objective of keeping this process in a perfectly well defined state, to keep the introduced philosophy highly evolving for the organisation’s members, and to bring it into a state seen fit to control all aspects of quality”. The continuous improvement discussed in the ISO 9001:2008 document included profitability, cost reduction and job creation (Hooper, 2002).

ISO 9001:2000 entails that an organisation uses its quality objectives, policy, audit results, data analysis, corrective and preventative actions and management reviews to improve its QMS’s effectiveness continually (West, 2002). For effective business measurable results, this requires going beyond the minimum i.e. integrating the organisation’s improvement actions and concentrating on attaining quality and overall business objectives. Acceptance of continual improvement fully means incorporating all tasks for attaining improvement and these comprises of:

- Incorporating information on product, process effectiveness and efficiency in order for the main methods to be revised at once;

- Using internal audit results;
- Applying basic and analytical methods for determining main concerns;
- Setting targets on the performance of critical internal processes compared to the best in class organisations; and
- Redirecting improvement actions on tasks that will offer the most value to the company and its stakeholders (West, 2002).

Real improvement isn't by luck but it needs real determination and normally occurs on a project by project basis. It is also important to explain the difference between preventive and corrective actions which are two important standard tools used in the process of continuous improvement. Preventive action addresses the likely source of a potential detrimental situation whilst corrective action deals with an unwanted situation so that it avoids the same situation from happening (West, 2002).

## **2.8 CONCLUSION**

The literature review from the previous section and the industry practices highlights the need for integrated quality management system for a sustainable organisation. In order for the organisation to succeed, all the factors above, human talent, alignment of the organisation strategy with QMS and internal auditing for continual improvement are critical and must be integrated in an all-inclusive approach for the successful QMS. The next chapter discusses the research methodology adopted for this study.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 INTRODUCTION**

The previous chapter conducted a literature review exploring the effectiveness of ISO 9000 post certification. The aim of this chapter is to discuss the research methodology and techniques used for collecting data for this study. The chapter will also discuss research design and research instruments to be used as well as the validity and reliability of the study. An explanation of the research objectives is the first part of this chapter followed by the description of the experimental procedure including details of measuring instruments applied. The chapter is concluded by a discussion of methods adopted in the statistical analysis of data.

A research design needs to define visibly what the main direction the research questions will be responded to and also must deliver justification of the methodology used for the research design (Saunders, Lewis and Thornhill, 2009). This study adopted quantitative research method for the research objectives to be met. Most of the questions were quantitative in order to measure the numerical itemized rating scale but there were some questions related to the attitudes of the employees and were therefore qualitative in nature.

#### **Aim and Objectives of the Study**

Some studies have proved that the apparent benefits of ISO 9001 QMS decrease over time (Casadesus and Karapetrovic, 2005). This shows the importance of correct maintenance of a quality management system post the certification period. The aim of this study is to address the effectiveness of QMS ISO 9000 post certification.

The study addresses the effectiveness of the QMS ISO 9000 post certification of ACTOM John Thompson. The objectives of the study are to:

- Establish the role of human talent in the maintenance of QMS in the organisation;
- Determine the effectiveness of internal audit systems in identifying QMS shortfalls for continuous improvement; and
- Propose an improvement model to John Thompson on the maintenance of QMS.

### **3.2 DESIGN OF THE RESEARCH**

There are two ways that a research can be conducted i.e. quantitative and/or qualitative research method Loseke and Cahil (2007). These methods are normally presented in a way that they are in conflict with one another but in actual fact can be used to complement each other. Quantitative research concerns numerical measurements Denzin and Lincoln (2005). Quantitative research is the preferred method when doing hypothetical, empirical, experimental psychology and deductive research Gowda (2011).

O'Leary (2004, p. 85) defined methodological design as a "strategic way of carrying out a research that consists of quantitative and qualitative tools". He described quantitative research as creating data representable in numbers and studied through the use of statistics. Anderson (2004) and Kumar (2005) purported that quantitative research is further supported by a distinguishing philosophy of what must pass as warrantable information which needs approaches like experiments and reviews for describing and explaining phenomena. Quantitative research approaches also include methods like pilot studies, observations, questionnaires and quantitative analysis (Brynard and Hanekom, 2005, p.29).

Quantitative data are data in the form of words generated from the broad answers to questions in interviews, or from responses to open ended questions in a questionnaire or through observation or from already available information gathered from various sources such as internet. This research method studies a large number of individuals and uses statistical techniques in recognising the overall patterns in the relations of processes. The result from the group is comparable thus allowing the conclusion of certain features to influence specific outcomes.

Quantitative approach will be used for this questionnaire because it:

- Allows gathering of information from a large number of respondents;
- Enables generalisation of findings to the population; and
- Offers numerical rating of information through the use of Likert scale.

It's possible to apply statistical techniques for determining relation between variables.

### **3.3 TARGET POPULATION AND LOCATION OF THE STUDY**

Population is defined as a total group of people or things of interest that the researcher desires to investigate (Sekaran and Roger, 2013). For this study, the target population will be a total of John Thompson senior and middle managers and all employees (N = 80). A sample is a subset or subgroup of the population comprising of some members selected from it. By studying the sample, it will be possible to draw generalizable conclusions to the population of the study.

Stratified random sampling was adopted for this study which is the division of the population into different subgroups and picking a random sample from each of the subgroups (O'Leary, 2004). This helps by ensuring that important subgroups from the population are represented. The different subgroups for the population were top management (two in total), senior management (seven in total), middle management (sixteen in total) and the general employees (55 in total). The respondents were recruited through the assistance of top management. A meeting was held at John Thompson and the researcher was given the opportunity to explain the reason for the research and employees were requested to take part in the study. The top management also encouraged the employees to participate in the study as the results

would be presented to the organisation and recommendations also considered where applicable for the organisation's improvement.

### **3.4 DATA COLLECTION STRATEGIES**

Sampling is described by O'Leary (2004, p.103) as a strategic process which is at times mathematical and comprises the most practicable procedures available to collect a sample which best characterizes a bigger population. Purposive sampling is influenced by Kumar (2005, p.179) as most beneficial when a past reality is constructed, relating an occurrence or developing something with very little information known.

The advantages of sampling are that it:

- Streamlines the research because it is simpler studying a portion of the population than the total population.
- Time saving since a portion is being studying than the whole population.
- Cost saving since it would be expensive to collect data from the entire population especially if it is geographically spread.

Questionnaires are prepared written questions that need to be answered by respondents (Sekaran, 2013). Questionnaires are well-organized data gathering instrument if the researcher understands precisely the requirements and how the variables will be measured. They can either be personally administered, electronically circulated or can be sent by mail to the respondents.

#### **3.4.1 Motivation for using a questionnaire**

Questionnaires are the mostly used data-gathering tools in research and are used for measuring important management issues and for developing human resources like behaviour and attitudes etc. (Anderson, 2004 p.208). It is therefore important to design and administer an applicable questionnaire for the measurement of the study being researched. A Likert type of questionnaire has the ability of proving that each of the questionnaire items contain the same psychological weight in the mind of the respondent and also each questionnaire entry makes a declaration of the same

structure Trochim (2006). The structure of the Likert scale to be adopted for this study is from the responses of “strongly disagree” corresponding to 1, “disagree” = 2, “agree” = 3, “strongly agree” = 4, and “neutral” = 5. Uebersax (2006) mentioned that there is a challenge in getting this right however if it is right then the researcher is able to calculate the results of each items to produce distinguishing scores from the different opinions of the same questions given that is being measured. Before selecting a questionnaire above other relevant data collection approaches, a consideration of the pros and cons for using a questionnaire was carried out for this study.

**Table 3.1: Advantages and disadvantages of using a questionnaire**

<b>Advantages</b>	<b>Disadvantages</b>
Practical	It is contended that it can be inadequate to understand some other types of information like behaviour, emotions etc.
Lots of information can be collected in short space of time from a lot of people.	Some people view quantitative research as an artificial formation of research because it is enquiring limited information without explanation.
Can be conducted by a researcher or any individuals without affecting its reliability and validity.	There’s a scarcity of validity.
The questionnaire results are often easily and rapidly computed by the researcher or by using a software package.	You cannot determine the truthfulness of the respondents with their answers.
Is better analysed objectively and scientifically than the other tools of research.	You cannot determine the thought effort applied by the respondent.
After data has been quantified, it can then be utilised for comparing and contrasting from other research work and also for measuring change.	The respondent may not be considerate of the full questionnaire context whilst answering the questions
	Respondents may interpret the questions differently and thus respond based on how they have read the question.

**Source: (Adapted from Robson, 2002:233-234; Debois, 2016; Denscombe, 2003:161; Brynard & Hanekom, 2005:38-39; Kumar, 2005:130-131)**

In this study the questionnaires were self-administered since they will be confined in a local area where the researcher is also based. The organisation was prepared to bring together groups of respondents to answer the questionnaires during the working hours. This was advantageous since the completed responses were collected within a short space of time. The other advantage was that any clarifications required by the respondents were attended to during the same time. It was also easier to introduce and explain the research topic and the importance of giving honest answers.

There are cases where some organisations are not willing to allow for the questionnaires to be answered during the working hours and this would need other methods of receiving the completed answers back.

### **3.4.2 Design of Questionnaire**

Designing each of the questions needs to be based on the data required. There are three options to be considered when designing each question (Boutique and Clark, 1994) i.e. develop original questions, adopt or adapt questions previously used in other questionnaires. The last two options can be used if the researcher decides to copy or relate their findings with another research thereby permitting reliability to be examined (Saunders et al, 2009).

Sekaran (2013) cautions researchers to reduce biases and errors in measurement by following the principles of questionnaire design, namely:

- Wording of the questionnaires;
- Measurement of the questions;
- Organisation of the complete questionnaire.

The initial step to worry about when designing questions is the wording and type of each question instead of order of appearance. Clear and familiar terms should be used to ensure that respondents understand what is being asked and therefore validity of the questionnaire will be improved (Saunders et al, 2009).

The questionnaire design in this study comprises of 23 questions, the first six questions are demographic such as age, gender, service and department within the organization and designation. Demographic questions assist in characterizing the sample and also for ease of progression for respondents. The second part of the questionnaire with the balance of the questions is related to the objectives of the study. The questions focus on the principles of ISO 9001 QMS i.e. responsibility of management, internal audit analysis, management of resources and continuous improvement.

The main items to be included in a questionnaire referred by Hamlet (2005, pp.145-147) were as follows:

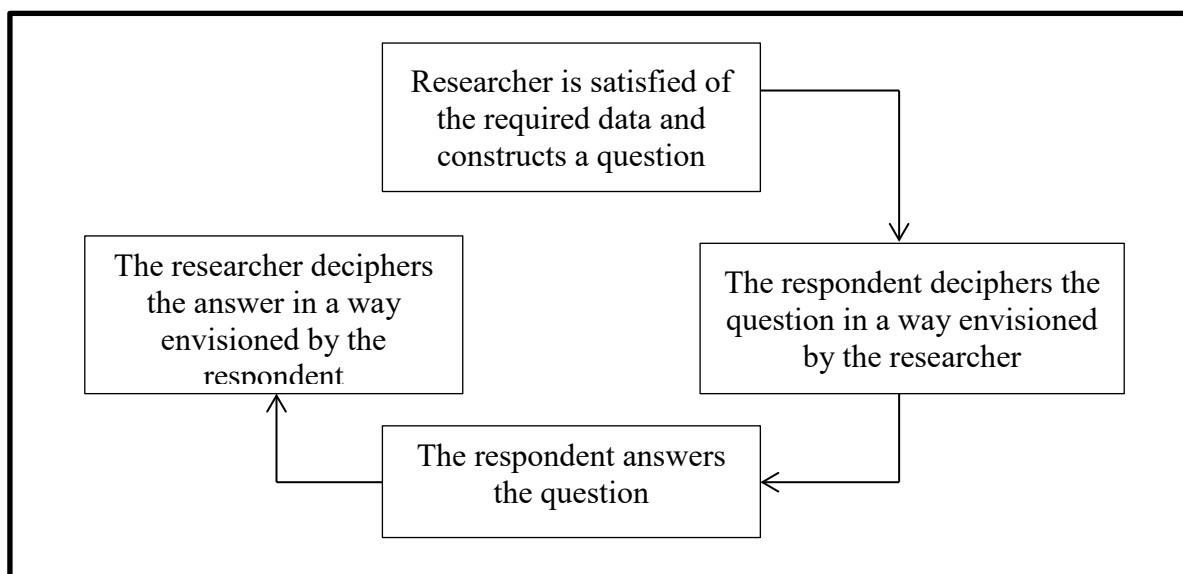
- Topic
- Cover letter
- Guidelines for carrying out the questionnaire
- Include data for respondent e.g. age, designation, tenure of respondents etc.
- Principal data regarding respondents' views and opinions about the fundamentals of the study.
- Include an open ended question to cover the views that may not have been included in the questionnaire.
- Finishing statement thanking participants for taking part in the questionnaire also guiding them on how to return the researcher's completed questionnaire.

Informed consent forms were given to respondents to complete which contained information explaining the objective of the study before the completion of the questionnaire. Attached to the questionnaire was the gatekeepers letter signed by the General Manager of John Thompson thus giving assurance to the respondents that the study was endorsed by the company and that they were free to give their honest opinions when completing the questionnaire.

### **3.5 PRETESTING AND VALIDATION**

The validity and reliability of the data that the researcher collects and the response rate accomplished rests on the design of the questions, rigour of the pilot testing and the manner the questionnaire is structured (Saunders et al, 2009). A valid

questionnaire allows for accurate data collection and a reliable questionnaire means consistently collected data. Questions thus need to be interpreted and understood the same way they were envisioned by the researcher and the respondents answer must be interpreted and understood the way envisioned by the respondent. Saunders et al (2009) recommended a four stage process that need to be followed to ensure that the questions are valid and reliable and this is depicted in Figure 3.1 below.



**Figure 3.1: Stages for ensuring the questionnaire is valid and reliable** (Adapted from Saunders et al, 2009, p. 366)

### 3.5.1 Validity Assessment

Internal validity question denotes the questionnaires' ability to measure what the researcher anticipated to measure. Researchers achieve this by searching for other applicable evidence relaying similar answers received using the questionnaire, its relevance would be been obtained by the research question's nature and their own discretion (Saunders et al, 2009). Three forms of validity of questionnaires are used

by researchers i.e. content, criterion related and construct validity (Cooper and Schindler, 2006. p.318-320 and Blumberg et al, 2005).

**a) Content Validity**

This is about the level to which the questionnaire gives sufficient attention to the investigative questions (Saunders et al, 2013). The determination of what is sufficient coverage can be determined in several different methods. It can be determined by carefully defining the research by the use of literature review or through earlier discussions with people. Another method could be using a focus group in assessing if each question necessary, suitable but necessary or not needed in the questionnaire.

**b) Criterion Related Validity**

Also known as predictive validity, criterion related validity has to do with the questions for making precise estimates. When applying the criterion related validity, it is when a researcher compares the questionnaires' data with the one stated in the measure normally done through statistical analysis.

**c) Construct Validity**

This is concerned with the level that the measurement questions calculate the existence of the constructs that were intended to be measured (Saunders et al, 2013). The word construct validity is referenced to concepts like attitude measures.

**3.5.2 Reliability Testing**

In order for a questionnaire to be valid, it must also be reliable however that is not adequate on its own since the respondents may decode a question in a different way than a researcher had intended (Saunders et al, 2009). The research question may therefore not be answered since it does not have internal reliability. Reliability relates to the sturdiness of the questionnaire, more especially if it will give consistent results at different intervals and different circumstances with different evaluators.

There are three common approaches used to assess reliability apart from matching data collected with data from different other sources i.e. test re-test, internal consistency and alternative form.

### **Test re-test**

Test re-test reliability estimates are achieved by redoing the measurements with the use of the same instrument under similar conditions as possible (Mitchell, 1996). The two scores from the administrations are then correlated and the results are decoded with regards to the stability of the measure after some time. This process may be a challenge for the researcher since it would be difficult to convince the same respondents to answer the same questions again. If the time intervals between the two questionnaires are longer, the chances that the respondents' answers are the same are slim. This approach is therefore recommended to be used as a supplement to other approaches (Saunders et al, 2009).

### **Internal Consistency**

Internal consistency reliability entails correlating scores to the respective question from the questionnaire with other questions in the questionnaire (Saunders et al, 2009). Consistency of answers across all questions is therefore what's being measured from the questionnaire.

### **Alternative form**

Alternate form reliability is achieved by comparing two alternative methods of measurement tools on the same questions (Mitchell, 1996). The outcomes are then evaluated individually by correlation. If the outcomes from the two methods have low correlations, it depicts low reliability. There is a risk of using many alternative questions where the respondents may recognize the same question and just copy their previous responses and therefore confuses the entire process.

## **3.6 QUESTIONNAIRE PILOT-TESTING**

There were two phases involved for the pilot testing of the questionnaire i.e. completing the questionnaire and performing a feedback follow up with the respondents involved with the pilot testing to gather their opinions of the survey. During the interview session, they were questioned if they were clear with the instructions from the questionnaire in order to complete it. They were also asked if the wording was clear and if the blocks for marking responses were clear. The time that it took to respond to the entire questionnaire was also discussed because it influences the response rate i.e. if it takes a long time to complete, then less people start or even

complete the survey which impacts the study negatively. Respondents may be irritated and not even follow the instructions for completing the survey.

A small scale of questionnaires was distributed to five people within the organization in order to test the understanding of the questions. This exercise was carried out in the middle of September. One member from the quality assurance department was selected, one of the middle managers, one senior manager, one skilled and one unskilled employee in order to get a different perspective. Changes were made on the questions that were not clear from the five people and some were removed in order to ensure effectiveness of the answers. Deliberation was given in ensuring that they were relevant to the study objectives.

For an effective pilot testing, the trial respondents must be the same from the ones who will actually be from the sample population (Willar D, 2012). The result from the feedback interview of the pilot questionnaire is as follows:

### **Completion Time**

On average, it took about 20minutes for the respondents to complete the questionnaire. The respondents felt that the time spent completing the survey was appropriate.

### **Layout, instructions and questionnaire Wording**

The majority of the instructions were understood however there were some respondents who were not so clear about some of the questions. Some respondents also suggested how the wording could be better improved. The layout of the questionnaire was also amended after the comments to make it more attractive.

## **3.7 DATA ANALYSIS**

According to Rowley (2014), there are two stages that have to be carried out prior to doing the data analysis:

- ***Inspect for completion of the questionnaires***

It is important to check each of the questionnaires, remove any of them which are not completed sufficiently or the ones where it shows that the respondent did not take completion seriously. It is possible that there will be unanswered questionnaires referred to as missing data which must also be removed.

- ***Inputting data into the selected software package for analysis***

Data from the questionnaires need to be exported into the selected data analysis software. Any open question responses must be put aside for qualitative analysis to be attended to later. Questionnaires must be coded and the questions by utilizing some kind of reminder to assist with the data. The questions must be numbered and one copy of the questionnaires needs to be marked up with question codes. A worksheet must be drawn up with rows showing question labels and the columns with data for questions. All responses from one questionnaire referred to a case can then be entered into a row. A software package called Statistical Package for Social Sciences (SPSS) version 24 was adopted for the statistical analysis.

- ***Inspecting and cleaning the data set***

The familiarisation process begins during the entering of data and is followed by the cleaning the data set. Cleaning the data entails examining the data searching for omissions or errors which may occur due during the entering of the data or during the completion of the questionnaire.

- ***Understanding the nature of the data***

The majority of the questionnaires contain more than one form of data with a different way of analysing the data. Data may be gathered into three classifications as per their applicable type i.e. interval/continuous; ordinal or nominal/categorical.

Interval or continuous is when the distances are the same across the range between the categories like income, age, turnover etc.

Ordinal data has categories which can be ordered in ranks however the distances between the categories are not similar through the range. Ordinal variables are the same as Likert scale but for analysis they are treated mostly as internal variables.

Nominal or categorical data has categories which cannot be ordered in ranks.

Prior to the processing and analysis of data, it is still in a raw form and thus has little understanding to many people. In order for the data to have meaning, it has to be

processed and turned into meaningful information. This can be done by applying quantitative data analysis methods like charts, graphs and statistics which enables exploring, presenting, describing and examining the relationships and trends of the data obtained (Saunders et al, 2009). Analysis of quantitative data entails studying general trends within the data as well as connecting statistical models into the data (Willar, 2012). A software package called Statistical Package for Social Sciences (SPSS) version 19 was adopted for the statistical analysis.

This program detects and corrects inconsistent, illogical or illegal data and omissions returned by the respondents of the study. The statistical software then generates statistical measurements, measurements of dispersion and central tendencies and correlations between variables. A Pearson correlation matrix was employed to indicate the direction, significance and strength of variable relationships among all variables that will be measured.

Descriptive statistics was adopted in this study for analysing and interpreting raw data. Descriptive statistics is preferred by practitioners since it profiles the respondents' answers each variable at a time and helps them comprehend practical things. In order to interpret the data, the following output was created:

- Respondent's profile analysis one variable per time interval;
- For gauging attitudes and manager's beliefs on quality management systems, the Kraskus-Wallis test was used;
- For determining the relationship between two variables, Chi-square test was used;
- For testing internal consistency of data, the Cronbach alpha coefficient was used; and
- For establishing a correlation between the two variables, cross tabulation frequency was used.

### **3.12 SUMMARY**

The use of research methodology was covered in this chapter. The plan for the overall research is summarised as well as the theoretical framework development for research questions. The initial studies carried out were also discussed entailing the

pilot testing questionnaire followed by the data collection method adopted. The motivation for using the questionnaire was also presented.

## **CHAPTER 4**

### **PRESENTATION OF FINDINGS AND DISCUSSION OF RESULTS**

#### **4.1 INTRODUCTION**

In this chapter descriptive statistics are presented in tabular or graph form with a brief explanation of each table or graph presented. The questionnaire was the basic tool used for collecting data that was distributed to employees at John Thompson. The collected data was then analysed using SPSS version 24.0. Chi-square tests and correlations were also used for further interpretation of the data presented in the form of p-values.

#### **4.2 ANALYSIS OF FINDINGS**

The research instrument consisted of 22 items, with a level of measurement at a nominal or an ordinal level. A total of 80 questionnaires were distributed to potential participants and 39 participants responded giving a 49% valid response rate. The questionnaire was divided into 2 sections; the first section measured biographical data such as age, gender, education, tenure and job level within the organisation. The second section of the questionnaire measured a set of structured questions based on the study objectives. A 5 point Likert scale was used to answer the questions.

The results are presented based on the study objectives, which are to:

- Establish the role of human talent in the maintenance of QMS in the organisation.
- Determine the effectiveness of internal audit systems in identifying QMS shortfalls for continuous improvement.
- To propose an improvement model to John Thompson on the maintenance of QMS.

#### 4.2.1 Reliability Statistics

**Reliability** and **validity** are the two most important characteristics of precision. Reliability is calculated by applying numerous measurements on the same subjects. A reliability coefficient of 0.700 or higher is considered as “acceptable”.

Table 4.1 below reveals the Cronbach’s alpha score from the questionnaire.

**Table 4.1: Case Processing Summary**

Cases		N	%
	Valid	39	100
	Excluded <sup>a</sup>	0	0.0
	Total	39	100.0

a. Listwise deletion based on all variables in the procedure

**Table 4.2: Reliability Statistics**

Cronbach’s Alpha	N of Items
0.779	16

The reliability scores for all sections (Table 4.2) surpass the recommended Cronbach’s alpha value. This means that the scoring has been consistent for all sections of the research and therefore indicating a degree of acceptable.

### 4.2.2 Factor Analysis

Factor analysis is a statistical method and its key objective is data reduction Dorasamy N. & Balkaran B. (2013). Factor analysis is used in a research survey for representing a series of questions with a small number of hypothetical factors. It can also be used for establishing if three measures can be able to measure the same thing. If it is possible, the three measures can then be joined to create a new variable which is a factor score containing each respondent's score on the factor. Factor techniques can be applied in a range of situations.

The matrix tables shown in **Table 4.4** is preceded by a summarised table showing the outcomes of KMO and Bartlett's Test. Kaiser-Meyer-Olkin of the Sampling Adequacy must be more than 0.50 and the Bartlett's test of Sphericity should be lower than 0.05. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was 0.802 and Bartlett's Test of Sphericity was 0.000 in all occurrences, it means that all conditions are met and therefore allows for the factor analysis procedure.

**Table 4.3: KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.802
Bartlett's Test of Sphericity	Approx. Chi-Square	224.211
	Df	78
	Sig.	0.000

Factor analysis is done only for the Likert scale items. Some components were subdivided into finer components.

Certain components divided into finer components. This is explained below in Table 4.4 in the rotated component matrix. The following can be deduced from Table 4.4:

- Varimax and Kaiser Normalisation were used for the rotation method and the extraction method for the principle component analysis.
- There were inter-correlations between the variables depicted by the factor analysis.
- There were some items from the questionnaire that loaded in the same way and this specifies measurement along a comparable factor.

**Table 4.4: Rotated Component Matrix**

Rotated Component Matrix <sup>a</sup>				
	Component			
	1	2	3	4
ISO quality management system improves the employee recruitment process	0.467	0.187	0.64	0.124
I believe the ISO quality management system improves the company resource program	0.621	-0.044	0.598	0.325
ISO quality management system helps to improve people management i.e. "right people in the right place"	0.431	0.127	0.527	-0.037
Communication within the organization is good	-0.024	-0.096	-0.009	0.893
ISO quality management system improves the product quality	0.475	0.347	0.189	0.318
Being informed of general business results motivates me	-0.054	0.217	0.875	-0.127
Internal audit procedures can improve the ISO quality management system	0.37	0.838	0.126	-0.091
Teamwork can improve the ISO quality management system	-0.084	0.774	0.08	-0.068
Corrective and preventative action can improve the ISO quality management system's organisation	0.268	0.815	0.198	-0.019
Customer feedback methods improve the ISO quality management system	0.821	0.163	0.151	0.016
Do you believe that quality controls and quality assurance underpin the quality management systems?	0.803	0.151	-0.036	-0.161
The continual improvement of a quality management system will enhance the employee / employer relationship	0.682	0.061	0.404	0.078
The ISO quality managements system improves customer satisfaction	0.585	0.223	0.38	-0.433
Extraction Method: Principal Component Analysis.				
Rotation Method: Varimax with Kaiser Normalization.				

a. Rotation converged in 7 iterations.

### 4.3 DEMOGRAPHIC DETAILS

This section summarises the biographical characteristics of the respondents.

#### 4.3.1 Gender distribution by age

Table 4.5 below depicts the overall gender distribution by age.

**Table 4.5: Gender distribution by age**

			Gender		Total
			Male	Female	
Age (years)	< 35	Count	9	3	12
		% within Age	75.00%	25.00%	100.00%
		% within Gender	32.10%	27.30%	30.80%
		% of Total	23.10%	7.70%	30.80%
	35 - 50	Count	10	7	17
		% within Age	58.80%	41.20%	100%
		% within Gender	35.70%	63.60%	43.60%
		% of Total	25.60%	17.90%	43.60%
	51 - 65	Count	9	1	10
		% within Age	90.00%	10.00%	100.00%
		% within Gender	32.10%	9.10%	25.60%
		% of Total	23.10%	2.60%	25.60%
Total	Count	28	11	39	
	% within Age	71.80%	28.20%	100.00%	

	% within Gender	100.00%	100.00%	100.00%
	% of Total	71.80%	28.20%	100.00%

The overall ratio of males to females is approximately 7:3 (71.8%: 28.2%). Amongst the age category of 35 to 50 years, 58.8% were males. Amongst the category of males (only), 35.7% were between the ages of 35 to 50 years. This category of males between the ages of 35 to 50 years formed 25.6% of the total sample.

The majority of the female participants, 41.2% were also from the age category of 35 to 50 years. This category of females between the ages of 35 to 50 years formed 17.9% of the total sample. Within the category of females (only), 63.6% were between the ages of 35 to 50 years.

#### 4.3.2 Job level distribution by age

**Table 4.6: Job level distribution by age**

Age	Job Level				Total (N)
	Top	Senior	Middle	Employees	
≤ 35	0	2 (16.7%)	4 (33.3%)	6 (50%)	<b>12</b>
36-50	0	3 (17.6%)	6 (35.3%)	8 (47.1%)	<b>17</b>
51-65	2 (20%)	2 (20%)	4 (40%)	2 (20%)	<b>10</b>
<b>Total</b>	<b>2</b>	<b>7</b>	<b>14</b>	<b>16</b>	<b>39</b>

As per Table 4.6 above, of the 39 study participants; 2 comprised of the top management (5%), 7 from the senior management (18%), 14 from the middle management (36%) and 16 from the general employees (41%). The majority of the participants were from the age group of 36-50 which is 43.6%. The next group was comprised of the below 35 years group with 30.8% and the last group of 51-65 age group comprised of 25.6%.

Table 4.6 revealed that there is no top management under the age group of below 35 or 36-50 from the respondents. Top management had two respondents from the age group of 51-65. The majority of the middle management (6) was between the ages of 36-50.

Table 4.6 displays the mix of generations currently employed at John Thompson; it is a good indication that 33.3% of middle managers are younger than 35 years of age. It means the organisation has good candidates for talent pipeline and retention that will benefit the organisation's future growth.

### 4.3.3 Respondents' positions

Figure 4.1 below shows the respondents' positions they hold at John Thompson.

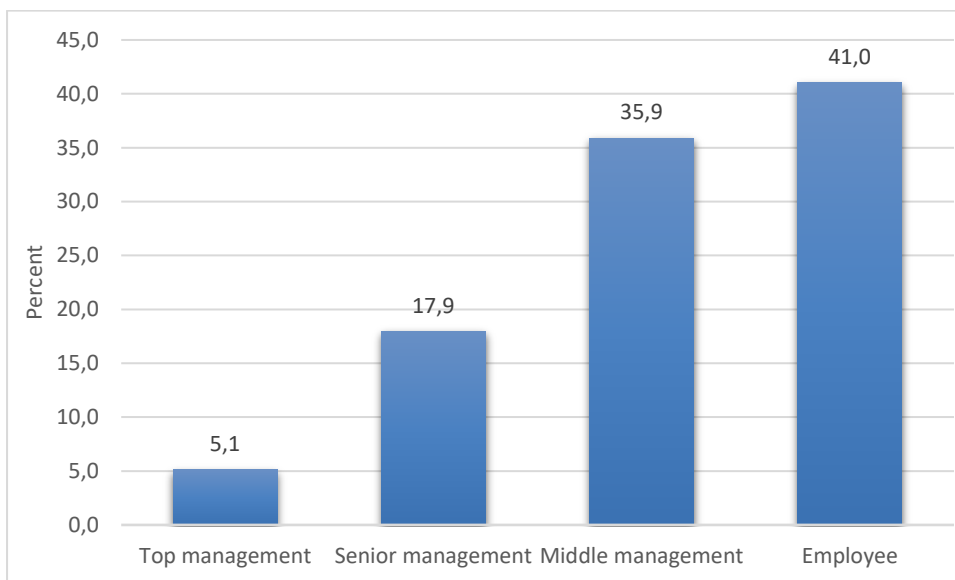
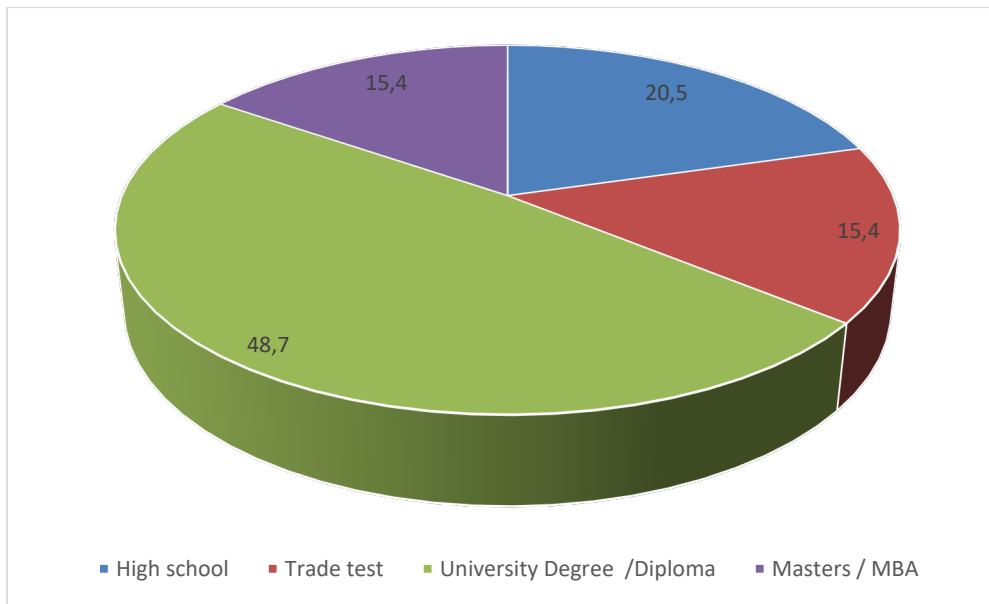


Figure 4.1: Positions held by respondents

According to Figure 4.1, there were nearly twice as many Middle Managers (35.9%) as there were Senior Managers (17.9%); this is in the ratio of the company profile. Senior management level is occupied by 17.9% of the participants; 5.1% is from the top management of the company and the majority of the respondents (41%); are from the employee lower than middle manager levels.

### 4.3.4 Education level of respondents

Figure 4.2 below indicates the education levels of the respondents.



**Figure 4.2: Respondents' education levels**

The majority of respondents (48.7%) had a university degree or diploma. These are beneficial statistical results because they show that a reasonable percentage of the respondents hold a higher qualification. The responses gathered therefore are from a reasonably informed source. 20.5% of the respondents had a high school education level, 15.4% of the respondents had a trade test level and the other 15.4% had a masters education level. This is also a good mix of the employees' education levels within the organisation.

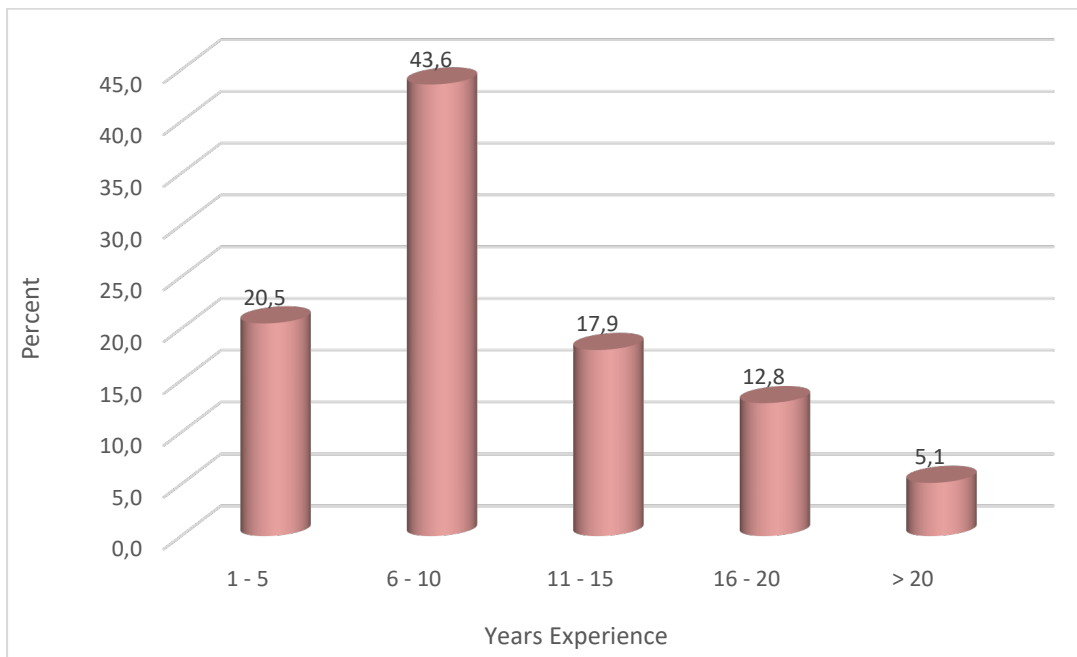
#### 4.3.5 Length of service of respondents

**Table 4.7: Respondents' length of service**

Highest Education Level	Job Level				Total (N)
	Top	Senior	Middle	Employees	
High School	0	0	0	8 (100%)	<b>8</b>
Trade Test	0	1 (16.7%)	1 (16.7%)	4 (66.6%)	<b>6</b>
University Degree/Diploma	2 (11.1%)	3 (16.7%)	10 (50%)	4 (22.2%)	<b>19</b>
Masters/MBA	0	3	3	0	<b>6</b>
<b>Total</b>	<b>2</b>	<b>7</b>	<b>14</b>	<b>16</b>	<b>39</b>

Table 4.7 above depicts the respondents' job positions against their education levels. The table reflects that middle managers, senior managers and top managers have higher education levels than a high school since none of them only have only possessed just a high school certificate. Eight general employees have a high school certificate. One middle manager and one senior manager have a trade test certificate and four general employees have a trade test certificate. The respondents who hold a university degree or diploma are two top managers, three senior managers, ten middle managers and four employees. Three senior manager respondents have a masters degree and three respondents were middle managers and the other level groups did not possess a masters degree.

Figure 4.3 indicates the length of service of the respondents.



**Figure 4.3: Length of service of respondents**

In Figure 4.3 Respondents were requested to indicate their length of service in years working at John Thompson. A total of 39 responses were received, of this number 20.5% had between 1-5 years' experience, 43.6% of the respondents had 6-10 years' experience, 17.9% had 11-15 years' experience, 12.8% had 16-20 years' experience and 5.1% of respondents had more than 20 years' experience at John Thompson. Approximately 80% of the respondents have been working for the organization for more than 5 years. This is also a good indicator due to the respondents' length of

service meaning they are well qualified to answer the questionnaire. They have adequate experience to share their informed views which is also important for this study to gather their views and perceptions.

#### 4.3.6 Organisational functions

The identified organisational functions are listed below in Table 4.8.

**Table 4.8: Organisational functions**

	Frequency	Percent
Administration	3	8
Accountancy	1	3
SHEQ	4	10
Human Resources	2	5
Projects	6	15
Proposals	3	8
Construction	11	28
Production	2	5
Engineering	7	18
Total	39	100

In Table 4.8, participants were asked to specify their functional areas in the workplace. Three respondents (8%) were from the administration department, one (3%) from the accounting department, four (10%) from the SHERQ department, two (5%) from human resources, six (15%) from the projects department, three (8%) from proposals, eleven (28%) from the construction, two (5%) production and seven (18%) from engineering department. The majority of the respondents (28%) were found to be from the construction department. The construction department performs the execution of the projects as they are the ones building the boilers and repairing existing boilers for the different clients and this indicated that these respondents were accustomed to the ISO 9001:2008 quality management system.

## 4.4 ANALYSIS OF RESEARCH OBJECTIVES

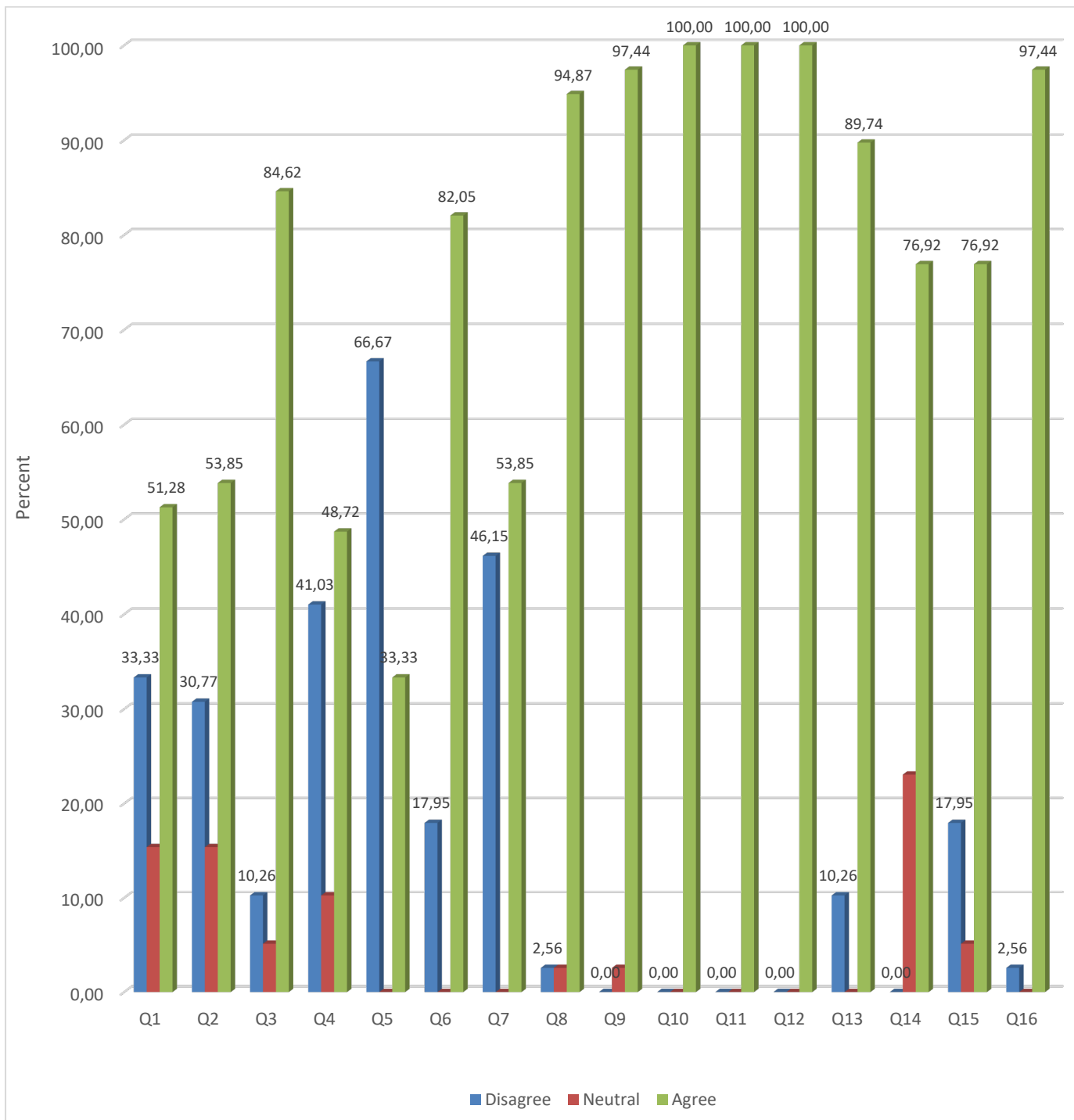
### 4.4.1 Scoring Patterns

The following section analyses the respondents' scoring patterns per question from each section. Some of the negative statements were collapsed to display a single group of "Disagree" where relevant. The same was done for the positive statements where applicable. Summarised percentages of the variables constituting each section are the results that are initially shown, the results are then additionally analysed in terms of the importance of statements. Table 4.9 below summarises the scoring patterns.

**Table 4.9: Scoring patterns**

		Disagree		Neutral		Agree	
		Count	Row N %	Count	Row N %	Count	Row N %
ISO quality management system improves the employee recruitment process	Q1	13	33.30%	6	15.40%	20	51.30%
I believe the ISO quality management system improves the company resource program	Q2	12	30.80%	6	15.40%	21	53.80%
Top management retains too much control over the work of employees	Q3	4	10.30%	2	5.10%	33	84.60%
ISO quality management system helps to improve people management i.e. "right people in the right place"	Q4	16	41.00%	4	10.30%	19	48.70%
Communication within the organization is good	Q5	26	66.70%	0	0.00%	13	33.30%

ISO quality management system improves the product quality	Q6	7	17.90%	0	0.00%	32	82.10%
I am aware of the management's goals	Q7	18	46.20%	0	0.00%	21	53.80%
Being informed of general business results motivates me	Q8	1	2.60%	1	2.60%	37	94.90%
Customer's approval of my work motivates me	Q9	0	0.00%	1	2.60%	38	97.40%
Internal audit procedures can improve the ISO quality management system	Q10	0	0.00%	0	0.00%	39	100.00%
Teamwork can improve the ISO quality management system	Q11	0	0.00%	0	0.00%	39	100.00%
Corrective and preventative action can improve the ISO quality management system's organisation	Q12	0	0.00%	0	0.00%	39	100.00%
Customer feedback methods improve the ISO quality management system	Q13	4	10.30%	0	0.00%	35	89.70%
Do you believe that quality controls and quality assurance underpin the quality management systems?	Q14	0	0.00%	9	23.10%	30	76.90%
The continual improvement of a quality management system will enhance the employee / employer relationship	Q15	7	17.90%	2	5.10%	30	76.90%
The ISO quality managements system improves customer satisfaction	Q16	1	2.60%	0	0.00%	38	97.40%



**Figure 4.4: Scoring patterns**

The following patterns are observed from Figure 4.4:

- There are significantly higher levels of agreement shown from some statements whereas some are showing lower levels of agreement although they are still greater than the disagreement levels.

- One statement (Q5) shows a higher disagreement level.

The factor analysis shows that the following 3 statements from Figure 4.4 form a sub-theme:

Q10, Q11 and Q12

There are high levels of agreement in relation to this sub-theme named “Methods to improve QMS”. The respondents were all in complete agreement and the factor for this sub-theme scored 100%. This means that they do understand what these methods are or mean and they also know what needs to be done in order to achieve them.

Q8 and Q9 which dealt with the respondents motivating factors also had high levels of agreement. The majority of the respondents agree that receiving feedback communication on their work motivates them. It must be noted however that the statement on Q5 about communication being good in the organisation received mostly disagreements. This means that respondents would like feedback but are not satisfied with what they are getting from the organisation. According to the AfP’s task force, the reporting of the human capital management needs to exhibit a connection between people management and business performance. Managers need to express their priorities and expectations to the employees in order to improve commitment to quality with well-designed communication (Dermibag and Sahadev, 2008). Wahid (2012), also agreed that if management regularly contribute in the project activities like briefings, meeting and training, it would make a huge difference to ensuring organisational quality policy is communicated, implemented, understood and maintained. There are several methods and approaches that exist that the organisation can use which will also benefit the organisation by giving feedback to the employees which will in turn increase the performance of the organisation.

#### **4.4.2 Chi-square Testing**

A chi-square was done in order to determine if the scoring patterns from each question were considerably different per option. Table 4.10 depicts the results from the chi-square testing.

**Table 4.10: Chi square test results**

	Chi-Square	df	Asym p. Sig.
Age	2	2	0.368
Highest education level	11.974	3	0.007
Gender	7.41	1	0.006
Present job level	12.795	3	0.005
Years experience with organisation	16.256	4	0.003
Organisational function	18.462	8	0.018
ISO quality management system improves the employee recruitment process	7.538	2	0.023
I believe the ISO quality management system improves the company resource program	8.769	2	0.012
Top management retains too much control over the work of employees	46.308	2	0.000
ISO quality management system helps to improve people management ie "right people in the right place"	9.692	2	0.008
Communication within the organization is good	4.333	1	0.037
ISO quality management system improves the product quality	16.026	1	0.000
I am aware of the management's goals	0.231	1	0.631
Being informed of general business results motivates me	66.462	2	0.000
Customer's approval of my work motivates me	35.103	1	0.000
Customer feedback methods improve the ISO quality management system	24.641	1	0.000
Do you believe that quality controls and quality assurance underpin the quality management systems?	11.308	1	0.001
The continual improvement of a quality management system will enhance the employee / employer relationship	34.308	2	0.000
The ISO quality managements system improves customer satisfaction	35.103	1	0.000

A statistical significance statement is required for reporting a result by generating a p-value from a test statistic. A significant result is represented by a p-value lower than 0.05. The distributions were not similar for the highlighted significant p-values which are less than 0.05. This means that the respondents' different scoring was significant.

For determining if there was a significant relationship between the questions in terms of rows and columns, a chi-square test was again done. All values with a Fisher's p-value greater than 0.05 mean that they do not have a significant relationship.

**Table 4.11: ISO quality management system improves the employee recruitment process \* Highest education level**

ISO quality management system improves the employee recruitment process * Highest education level						
		Highest education level				Total
		High school	Trade test	University Degree	Masters / MBA	
Disagree	Count	6	4	3	0	13
	% within Highest education level	75.0%	66.7%	15.8%	0.0%	33.3%
Neutral	Count	1	0	5	0	6
	% within Highest education level	12.5%	0.0%	26.3%	0.0%	15.4%
Agree	Count	1	2	11	6	20
	% within Highest education level	12.5%	33.3%	57.9%	100.0%	51.3%
Total	Count	8	6	19	6	39
	% within Highest education level	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests				
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	18.948 <sup>a</sup>	6	0.004	0.003
Likelihood Ratio	21.882	6	0.001	0.002
Fisher's Exact Test	16.346			0.003
Linear-by-Linear Association	13.930 <sup>b</sup>	1	0.000	0.000
N of Valid Cases	39			

a. 10 cells (83.3%) have expected count less than 5. The minimum expected count is .92.

b. The standardized statistic is 3.732.

The p-value between “ISO quality management system improves the employee recruitment process” and “Highest education level” is 0.003 as shown in Table 4.11. This means that there is a significant relationship between these variables i.e. the education level of the respondents had a significant role with regards to how respondents viewed ISO QMS improving the recruitment process. The majority of the respondents (six out of ten) with high school education level disagree that ISO quality management system improves the employee recruitment process. Three out of the nineteen respondents with a university degree/diploma, disagreed with the above statement, five were neutral and eleven agreed with the statement.

**Table 4.12: Top management retains too much control over the work of employees \* Present job level**

Top management retains too much control over the work of employees * Present job level						
		Present job level				Total
		Top management	Senior management	Middle management	Employee	
Disagree	Count	1	3	0	0	4
	% within Present job level	50.0%	42.9%	0.0%	0.0%	10.3%
Neutral	Count	0	0	1	1	2
	% within Present job level	0.0%	0.0%	7.1%	6.3%	5.1%
Agree	Count	1	4	13	15	33
	% within Present job level	50.0%	57.1%	92.9%	93.8%	84.6%
Total	Count	2	7	14	16	39
	% within Present job level	100.0%	100.0%	100.0%	100.0%	100.0%
Chi-Square Tests						
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)		
Pearson Chi-Square	15.200 <sup>a</sup>	6	0.019	0.026		
Likelihood Ratio	14.106	6	0.028	0.018		
Fisher's Exact Test	12.535			0.011		
Linear-by-Linear Association	8.573 <sup>b</sup>	1	0.003	0.004		
N of Valid Cases	39					
a. 9 cells (75.0%) have expected count less than 5. The minimum expected count is .10.						
b. The standardized statistic is 2.928.						

The p-value between “Top management retains too much control over the work of employees” and “Present job level” (Table 4.12) is 0.011. This means that there is a significant relationship between these variables. The present job level of respondents has an influence in how they responded that top management retains too much control over the employees work. Fifteen from sixteen respondents from employees group agreed with the statement, thirteen out of fourteen respondents from middle management agreed, four out of seven respondents from senior management agreed and one from two senior management agreed with the statement that top management retains too much control over the work of employees. This means that employees do not feel free to voice their opinions on how work can be carried out.

**Table 4.13: Communication within the organization is good \* Age**

Communication within the organization is good * Age					
		Age			Total
		< 35	35 - 50	51 – 65	
Disagree	Count	11	11	4	26
	% within Age	91.7%	64.7%	40.0%	66.7%
Agree	Count	1	6	6	13
	% within Age	8.3%	35.3%	60.0%	33.3%
Total	Count	12	17	10	39
	% within Age	100.0%	100.0%	100.0%	100.0%
Chi-Square Tests					
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	
Pearson Chi-Square	6.604 <sup>a</sup>	2	0.037	0.037	
Likelihood Ratio	7.229	2	0.027	0.037	
Fisher's Exact Test	6.500			0.037	
Linear-by-Linear Association	6.430 <sup>b</sup>	1	0.011	0.013	
N of Valid Cases	39				
a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 3.33.					
b. The standardized statistic is 2.536.					

**Table 4.14: Communication within the organization is good \* Years experience with organisation**

Communication within the organization is good * Years experience with organisation							
		Years experience with organization					Total
		1 - 5	6 - 10	11 - 15	16 - 20	> 20	
Disagree	Count	8	12	3	1	2	26
	% within Years experience with organisation	100.0%	70.6%	42.9%	20.0%	100.0%	66.7%
Agree	Count	0	5	4	4	0	13
	% within Years experience with organisation	0.0%	29.4%	57.1%	80.0%	0.0%	33.3%
Total	Count	8	17	7	5	2	39
	% within Years experience with organisation	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Chi-Square Tests							
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)			
Pearson Chi-Square	11.803 <sup>a</sup>	4	0.019	0.013			
Likelihood Ratio	14.486	4	0.006	0.009			
Fisher's Exact Test	11.013			0.011			
Linear-by-Linear Association	4.549 <sup>b</sup>	1	0.033	0.045			

N of Valid Cases	39		
a. 7 cells (70.0%) have expected count less than 5. The minimum expected count is .67.			
b. The standardized statistic is 2.133.			

The p-value between “Communication within the organisation is good” and “Age” is 0.037, therefore have a significant relationship. Four out of ten respondents between ages 51-60 disagreed, eleven out of seventeen respondents between ages 35-50 disagreed and eleven out of twelve respondents below age of 35 disagreed that communication is good within the organisation.

It is interesting to compare Table 4.13 with Table 4.14 where the p-value between “Communication within the organisation is good” and “Years experience with organisation” is 0.011; these also have a significant relationship. Both respondents with experience more than 20 years disagree with the statement, one out of five respondents with experience between 16 to 20 years disagree, three from seven respondents with experience between 11 to 15 years disagree, twelve out of seventeen respondents with experience between 6 to 10 years disagree and all eight respondents with experience 1 to 5 years disagree with the statement. The older respondents with long service with the organisation seem to be satisfied with the communication in the organisation, it could be because they are used to how the organisation operates. The younger participants with less years’ experience however are not satisfied with communications.

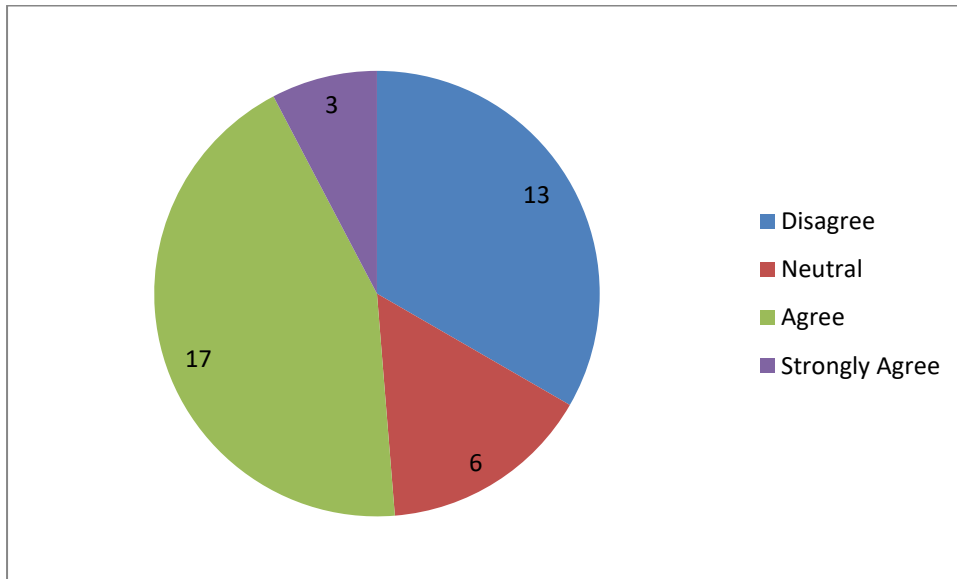
#### **4.4.3 Study Objectives Analysis**

##### **4.4.3.1 Objective 1**

###### **Establish the role of human talent in the maintenance of QMS in the organisation**

The first objective will be analysed in line with the recruitment process, company resource program, top management control and goals, people management, communication and employee motivation.

### Q1. ISO quality management system improves the employee recruitment process



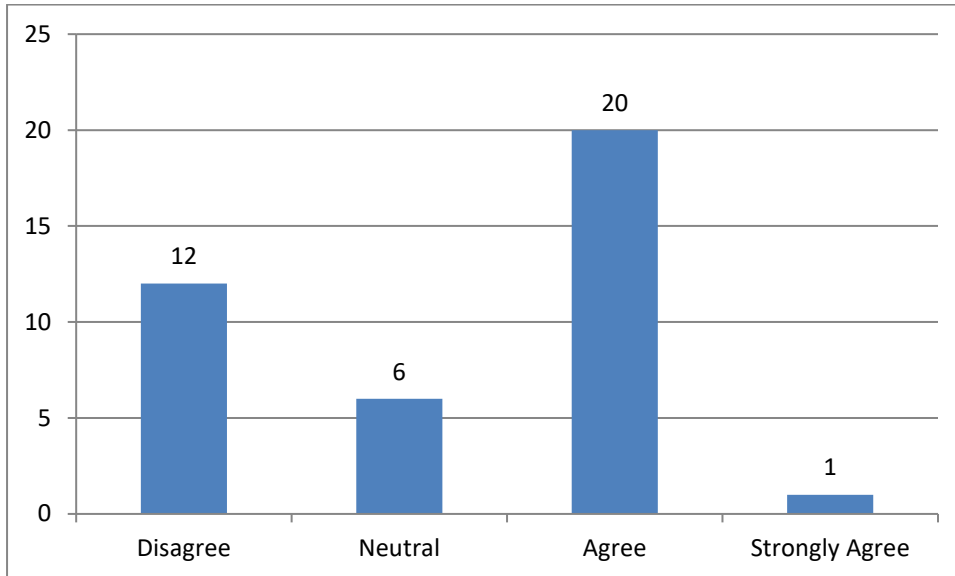
**Figure 4.5: Recruitment process**

Figure 4.5 showed that three respondents (8%) strongly agreed; six respondents (15%) neutral; thirteen respondents (33%) disagreed and seventeen respondents (44%) agreed that ISO quality management improves the recruitment process. The total respondents with a positive response i.e. agreeing to the statement are 20 (51%) which is the majority of the respondents who believe that ISO quality management improves the recruitment process. Human resource is responsible for ensuring selection of the right people for the applicable task is carried out at all times.

Recruitment and selection process is the first component of human resource management system used by managers in attracting and hiring employees with the best abilities, experience and skills which will assist the organisation to achieve its objective of providing good quality product (George and Jones, 2007).

It was contended by Teraak and King (2006) that problems which are related to people are normally intricate and unique. ISO 9001:2008 clause 6.2 outlines the importance of employee recruitment process as a function of the organisation. ISO quality management system assists the organisation with the employee recruitment and training programmes. Clause 6.2.2 of ISO 9001:2008 also accentuates that awareness and competence training is essential factors.

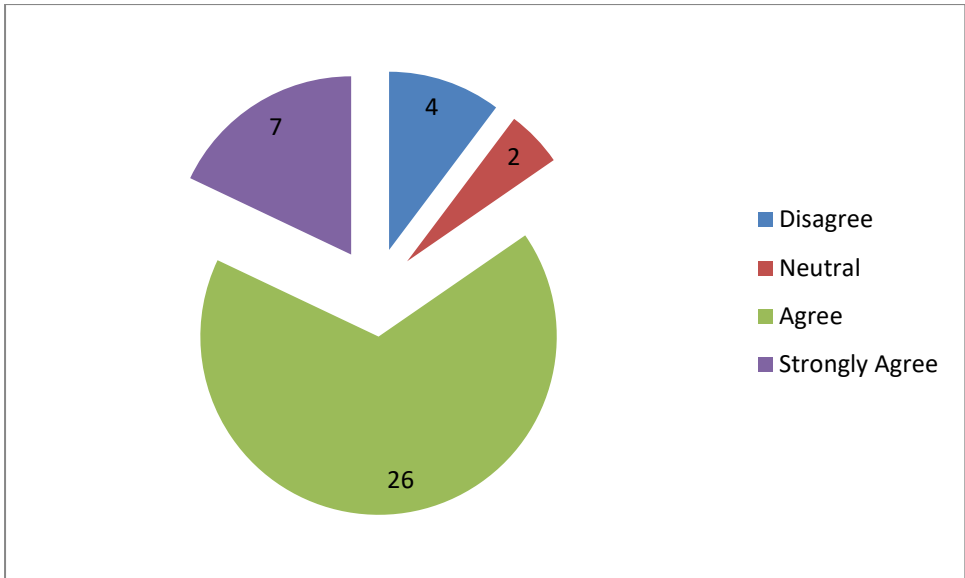
**Q2. I believe the ISO quality management system improves the company resource program.**



**Figure 4.6: Company resource program**

Figure 4.6 indicated that only one respondent strongly agreed; six respondents were neutral, twelve respondents disagreed and twenty respondents agreed that ISO quality management improved the company resource program. Dearing (2009) argued that ISO quality management system inspires organisations to utilise training programmes in identifying strengths and opportunities for the key processes. According to Leonard (2007), organisations that employed ISO quality management system were able to improve on their communication both internally and externally and also improved the resources as well as decisions that increased the organisation's profit.

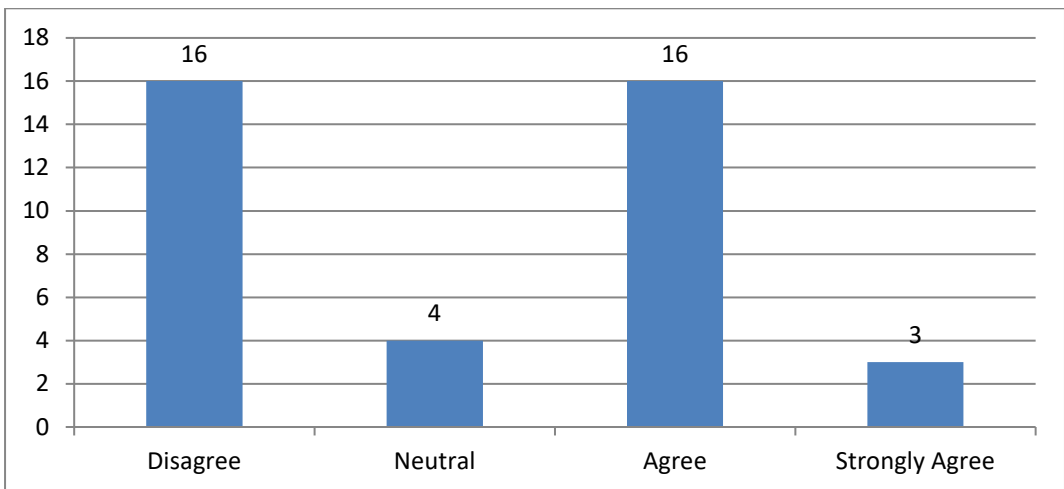
**Q3. Top management retains too much control over the work of employees**



**Figure 4.7 Top management control over employees' work**

Figure 4.7 indicated that two respondents were neutral; four respondents disagreed; seven respondents strongly agreed and twenty six respondents agreed that top management retains too much control over the work of employees. In order to get the best out of the employees, their views and opinions on how well best work should be carried out must be heard. When they feel that their opinions matter, they are motivated to perform at their best abilities. If there is too much control over their work, they feel discouraged and therefore do not perform best.

**Q4. ISO quality management system helps to improve people management i.e. “right people in the right place”.**

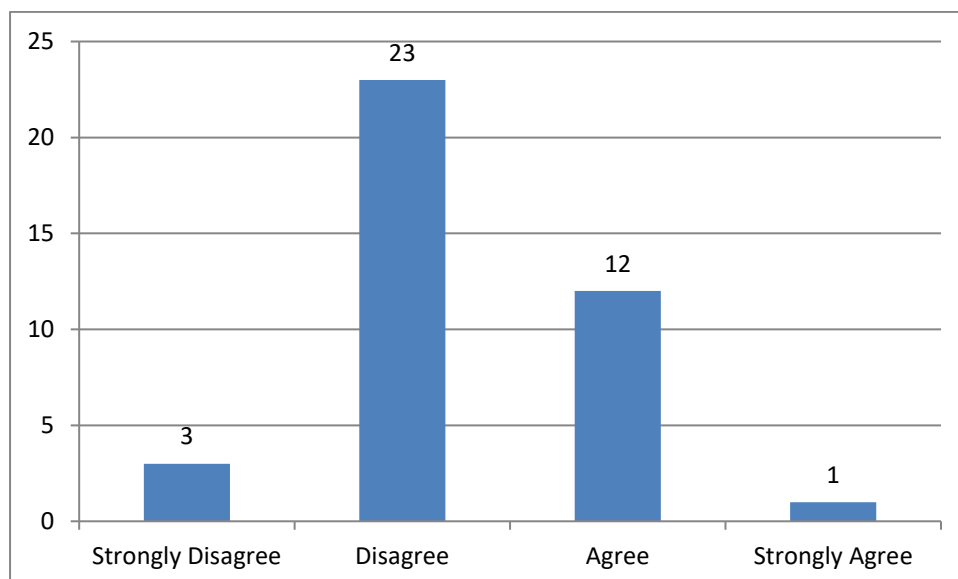


**Figure 4.8: ISO QMS helps improve people management**

Figure 4.8 indicated the responses based on the statement that ISO quality management system helps to improve people management; three respondents strongly agreed; four respondents were neutral; sixteen respondents disagreed whilst the other sixteen respondents agreed to the statement.

Good manufacturing practices are as a result of people Rajan and Tamimi (2007). Surrounding employees with a good support system, motivating them, correct selection and moulding them are essential for the organisation's good customer relations, to innovate and for reacting quickly to market changes. The strategic values of ISO quality management systems are no longer constructed around the product; they are now constructed around people.

#### **Q5.Communication within the organisation is good.**



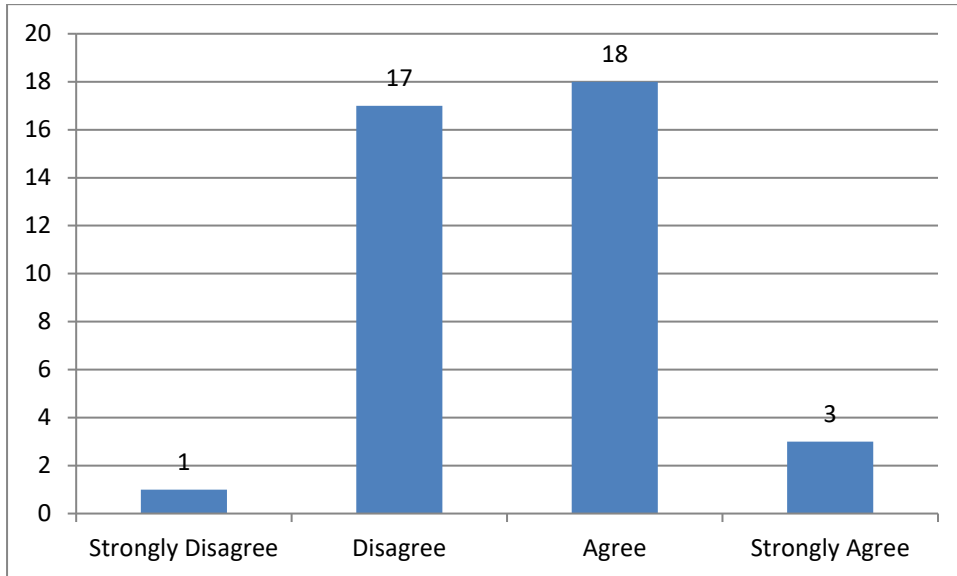
**Figure 4.9: Communication within the organisation**

Figure 4.9 above indicated that only one participant strongly agreed that communication within the organisation was good; three participants strongly disagreed; twelve agreed and twenty three participants disagreed. Most of the respondents were not satisfied with the communication levels within the organisation which is not good for the maintenance of ISO quality management system and hence performance.

A case study done on two companies showed there are similarities and differences in how they maintain their ISO 9000 with regards to how they understand and manage

the aspects that are closely related with ISO 9000 maintenance (Wahid et al, 2011). The findings proved that the company with higher top management commitment and better internal communication has better motivated employees (Wahid et al, 2011).

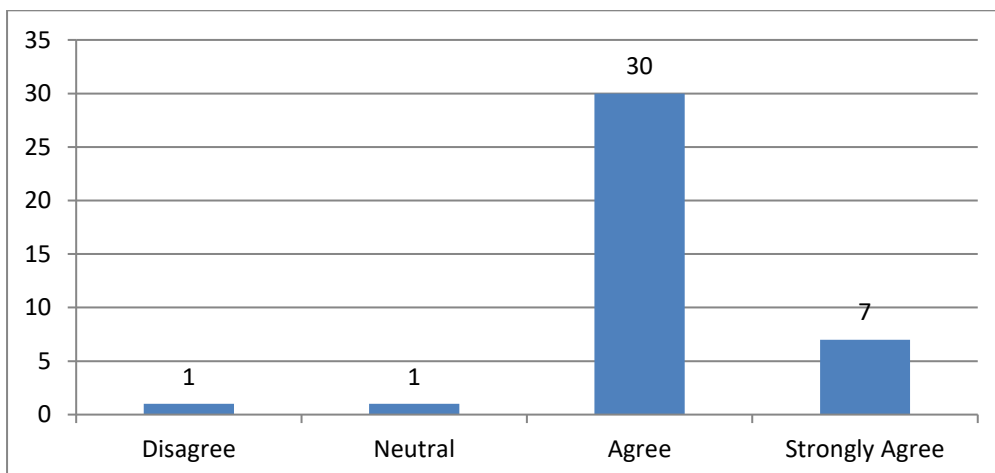
**Q7. I am aware of the management's goal.**



**Figure 4.11: Management's goal**

Figure 4.11 depicts responses of participants where they were asked if they were aware of the management's goals. Only one participant strongly disagreed; three respondents strongly agreed; seventeen respondents disagreed and eighteen respondents agreed.

**Q8. Being informed of general results motivates me.**

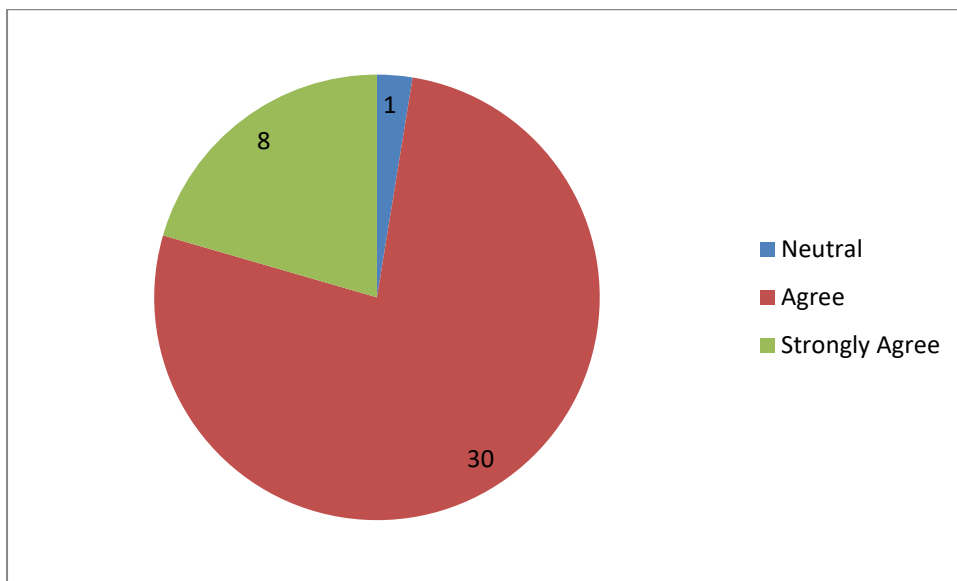


**Figure 4.12: Information of business results**

In Figure 4.12 shows responses from participants asked if being informed of general results motivates them; one respondent disagreed, another respondent was neutral; seven respondents strongly agreed whilst thirty of the respondents agreed.

Informing people of how the business is performing helps employees know how the organisation is performing and if they need to pull more weight in order to steer the company in the right direction. Employees will not be able to put more weight if they are kept in the dark about the company's performance.

#### **Q9. Customer's approval of my work motivates me.**



**Figure 4.13: Customer's approval of work**

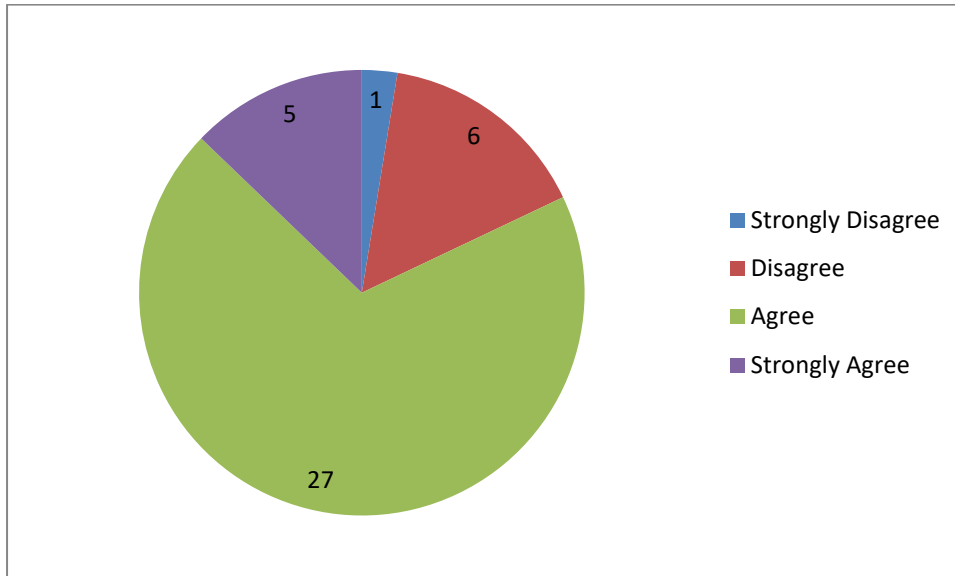
In Figure 4.13 indicated that one respondent was neutral; eight respondents strongly agreed and thirty respondents agreed that customers' approval of their work motivated them. Communication with customers keeps a healthy relationship with the organisation and also helps to know when they are happy and when they are not. Receiving good feedback from customers is a good indicator that the organisation is doing well and therefore retains good relations.

#### 4.4.3.2 Objective 2

**Determine the effectiveness of internal audit systems in identifying QMS shortfalls for continuous improvement.**

The internal audit objective will be analysed in line product quality, internal audit procedures, corrective and preventative action, quality control and quality assurance.

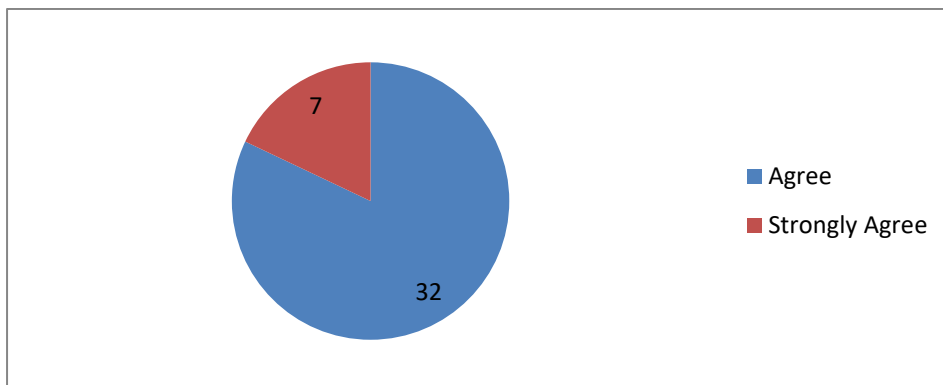
#### **Q6.ISO quality management system improves the product quality.**



**Figure 4.10: Product quality**

Participants were asked to respond from the statement that ISO quality management system improves the product quality; from Figure 4.10 one respondent strongly disagreed; five respondents strongly agreed; six respondents disagreed and twenty seven agreed.

#### **Q10. Internal audit procedures can improve the ISO quality management system.**



#### Figure 4.14: Internal audit procedures

Figure 4.14 from the 39 respondents showed that seven strongly agreed and thirty two respondents agreed that internal audit procedures can improve the ISO quality management system. All respondents are in agreement that there could be substantial improvements of the ISO quality management system provided that internal audits are carried out.

Clause 8.2.2 of ISO 9001:2008 states that internal audits will be conducted by the organisation as scheduled intervals to establish the conformance of the quality management system as per the planned product outcome, according to resource management and as per the international standard's requirement and John Thompsons' requirements.

#### Q12. Corrective and preventative action can improve the ISO quality management system's organisation.

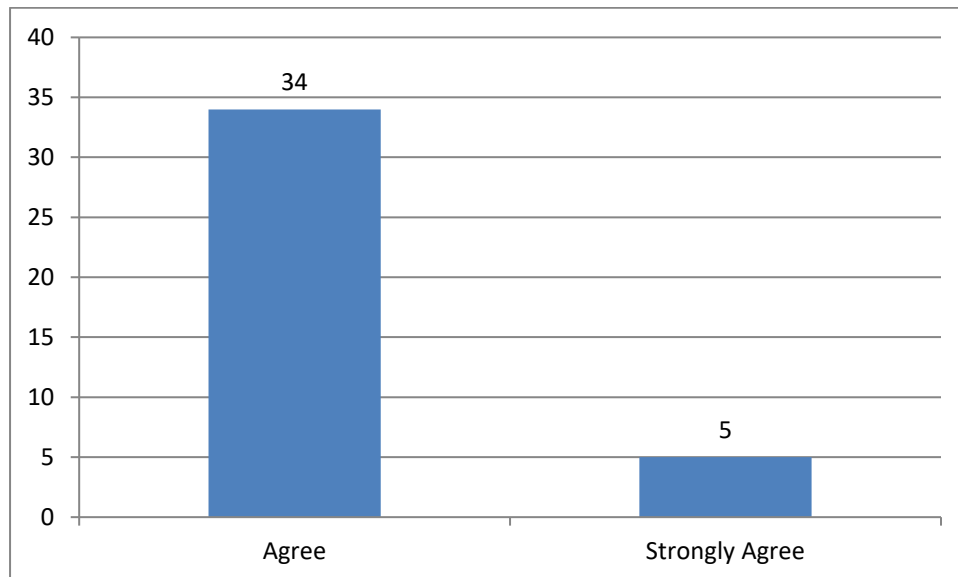
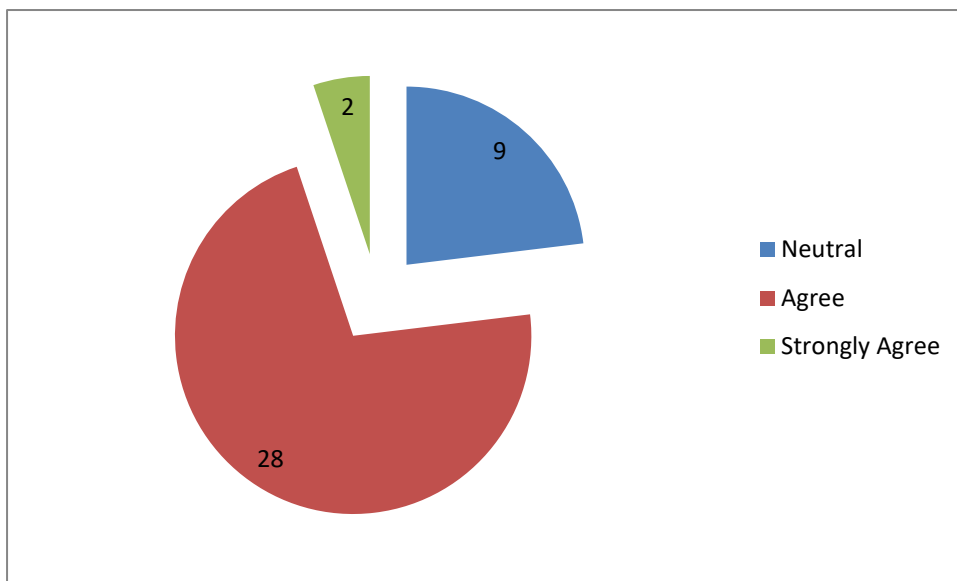


Figure 4.15: Corrective and preventative action

Figure 4.15 depicts results from respondents where five of them strongly agreed and thirty four respondents agreed that corrective and preventative action can improve the ISO quality management system's organisation. Basically all respondents were in agreement of the statement which is ISO 9001:2008 clause 8 that non-conforming

products are reduced in the production areas, the complaints from customers are also reduces and the ISO quality management system is improved in the organisation. This therefore benefits the employer and the employees. Corrective action in actual fact shows the necessary improvement agenda for ISO 9000 quality management system (Wahid, 2012).

**Q14. Do you believe that quality controls and quality assurance underpin the quality management systems?**



**Figure 4.18: Quality controls and quality assurance**

Two respondents from Figure 4.18 strongly agreed; nine respondents were neutral and twenty eight respondents agreed that they believe that quality controls and quality assurance underpin the quality management systems. When clause 8.2 and sub-clause 8.2.2 of ISO 9001:2008 are put into effect, they will result in better product realisation, measurement analysis and resource management of the quality management system in the organisation.

The main focus of quality assurance and quality control is on customer satisfaction but also aims at meeting the objectives of the organisation. ISO quality management systems is aimed at ensuring that inspections and tests of products are done which will then show whether a product conforms or does not conform. The status of the inspection and test to be maintained are identified by the quality control and quality

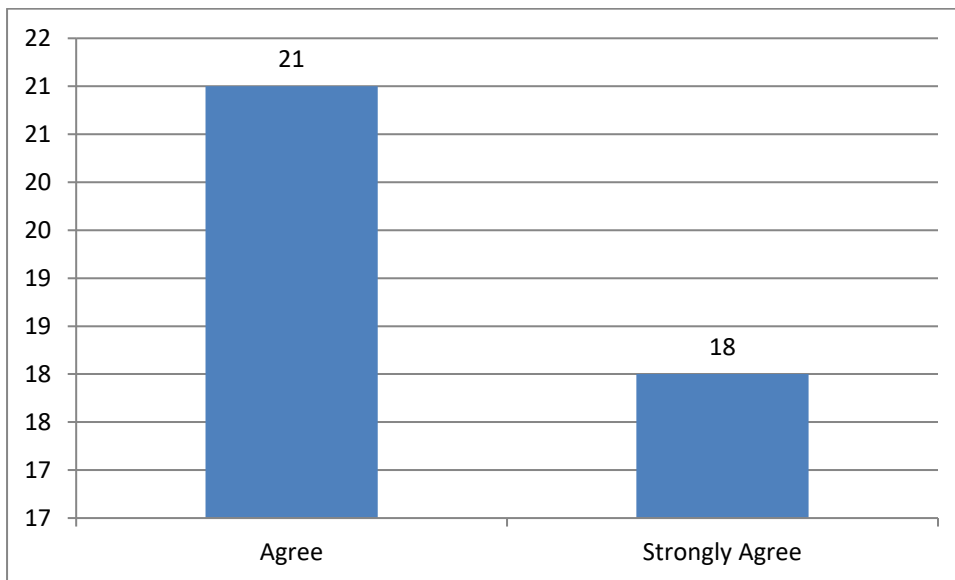
assurance as per the appropriate procedures. This is to ensure that only passed products from the inspections and tests are released for dispatch, installed or utilised. There are work instructions that have been established by ISO 9001:2008 quality management system to ensure that only inspected and verified products according to work instructions are realised.

#### 4.4.3.3 Objective 3

#### Propose an improvement model to John Thompson on the maintenance of QMS.

The third objective was analysed in line with the teamwork, customer feedback, continual improvement and customer feedback.

#### Q11. Teamwork can improve the ISO quality management system.

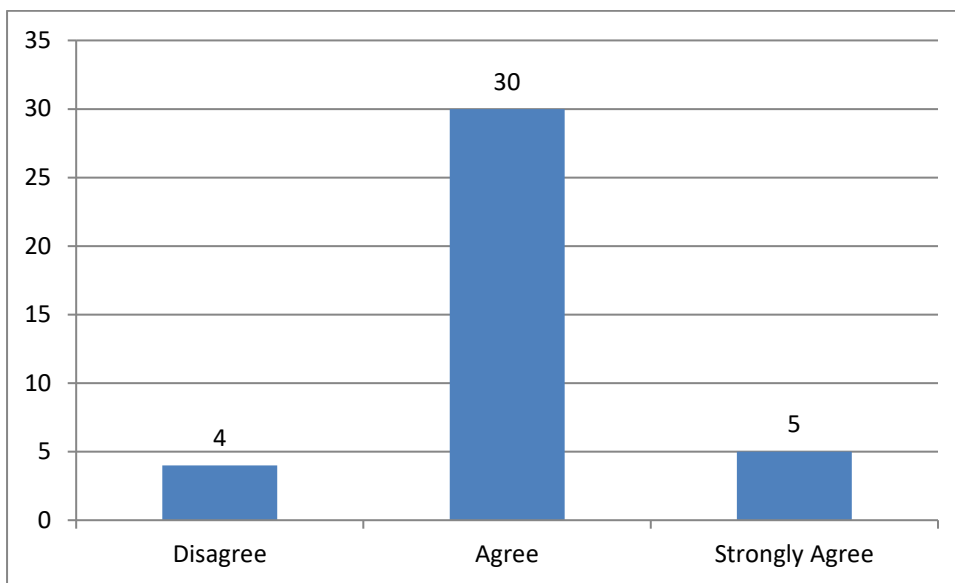


**Figure 4.16: Teamwork improvement**

The results from Figure 4.16 showed that eighteen respondents strongly agreed and twenty one respondents agreed that teamwork can improve the ISO quality management system. Teamwork promotes communication, information sharing which results in better management quality management system. According to Ataseven et al (2014), “collective understanding of the shared knowledge and congruence of goals directed by the ISO 9000 standards is achieved via employees that are social actors and their information exchange”. Both dimensions of information exchange and social capital are at work in this case. Shared experiences and knowledge amongst networks improve common perspectives and also form a shared basis for understanding.

A study done in the New Zealand service organisations has shown that “top management, other employees, the reward system, teamwork, continuous improvement, understanding of ISO itself, measurement of performance and communication are all critical success factors for ISO 9000 maintenance” (Wahid and Corner, 2009).

**Q13. Customer feedback methods improve the ISO quality management system.**



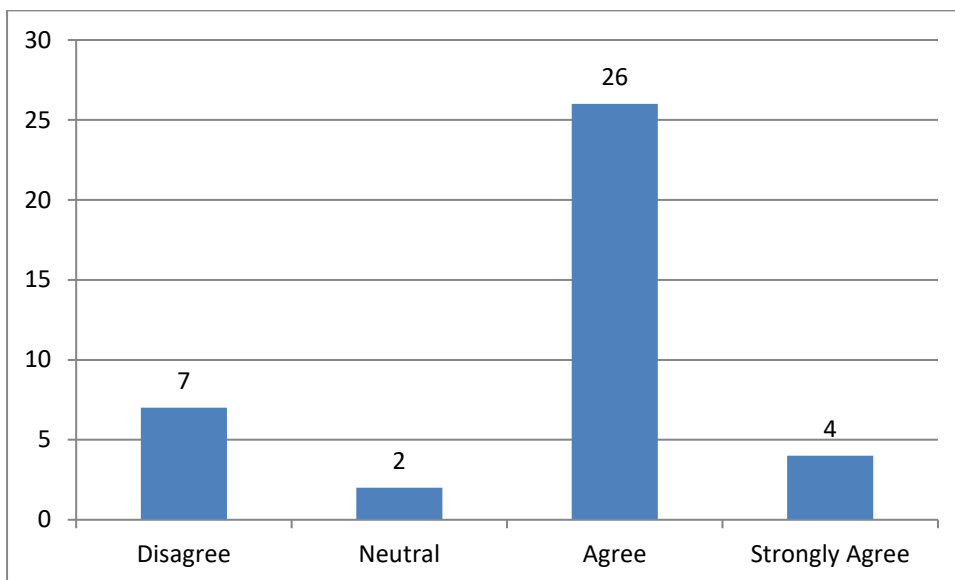
**Figure 4.17: Customer feedback methods**

In Figure 4.17 four respondents disagreed; five strongly agreed and thirty respondents agreed that customer feedback methods improve the ISO quality management system. The majority of the respondents are in agreement with ISO 9001:2008 clause 5.2 that customer feedback will improve the quality management system. The majority of respondents showed that clause 5.2 (customer focus) of ISO 9001:2008 and customer feedback does improve the quality management system.

Customer feedback is critical in ensuring success of every organisation. Top management must be committed and give full support to quality programmes. According to Demirbag and Sahadev (2008), top management’s commitment is one of the most important and critical factors in quality management since it is directly accountable for directing a proper vision, quality policy and organisational culture. A lot of studies have stressed the impact of top management’s commitment to the

success of ISO 9000 (Sampaio et al., 2009; Yeung et al., 2003; Poksinska et al. 2002). They also say that apart from the top management's involvement, all employees need to be also involved in the organisation.

**Q15. The continual improvement of a quality management system will enhance the employee/employer relationship.**



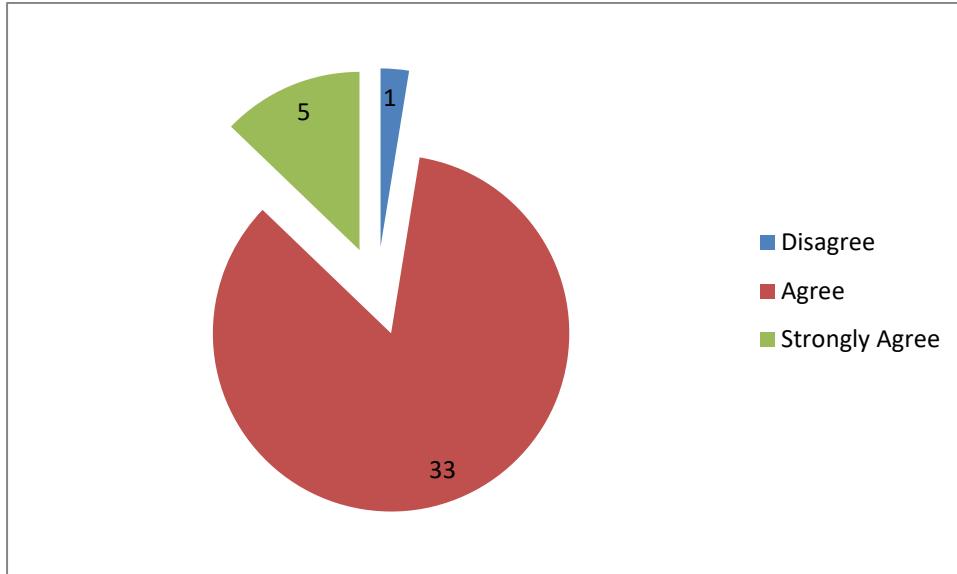
**Figure 4.19 Continual improvement**

Figure 4.19 shows responses where two respondents were neutral; four strongly agreed; seven disagreed and twenty six agreed that continual improvement of a quality management system will enhance the employee/employer relationship. These results from the respondents show that there will be profitability for the organisation through continual improvement at the same time constructing a good relationship between the employer and the employee. This is clause 8.5.1 of the ISO 9001:2008 which is an international standard.

QMS is a companywide drive towards continuous improvement of the quality in all facets of the company's processes, services and products to the customer. Continuous improvement denotes a process of growing the effectiveness of the organisations in fulfilling the quality objectives and quality policy. All employees need to be involved and focus put on continuous improvement (Williams, 2004). Employees need to be mindful of QMS when performing their work, otherwise the QMS works for

its own purpose whilst it is a problem to management and the employees (Zelnik et al, 2012).

**Q16. The ISO quality management system improves customer satisfaction.**



**Figure 4.20: Customer satisfaction improvement**

Figure 4.20 depicts the responses from participants and one respondent disagreed; five respondents strongly agreed and thirty three respondents agreed that ISO quality management system improves customer satisfaction.

The majority of the respondents are in agreement that customer satisfaction is a significant component of ISO quality management system. Clause 7.2 of ISO 9001:2008 of customer related processes and clause 5.2 of customer focus are of paramount importance on the quality management system.

From the correlation table (Table 4.15), it showed that respondents agreed that customer satisfaction is linked to the employee recruitment process ( $r = 0.535$ ), product quality ( $r = 0.514$ ) and company resource programs ( $r = 0.438$ ).

**4.4.5 Correlations**

Correlation between two of each of the statements was carried out on the ordinal data, see results on Table 4.15.

**Table 4.15: Spearman's Correlation**

		Spearman's Rank Correlations															
		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16
Q1	Correlation Coefficient	1.000															
Q2	Correlation Coefficient	.706**	1.000														
Q3	Correlation Coefficient	-0.131	-.337*	1.000													
Q4	Correlation Coefficient	.454**	.481**	0.032	1.000												
Q5	Correlation Coefficient	0.078	0.261	-.434**	0.031	1.000											
Q6	Correlation Coefficient	.421**	.471**	-0.093	.387*	-0.035	1.000										
Q7	Correlation Coefficient	.353*	0.296	-0.275	0.220	.317*	0.151	1.000									
Q8	Correlation Coefficient	.476**	.376*	0.184	.376*	-0.137	.334*	-0.065	1.000								
Q9	Correlation Coefficient	0.033	-0.014	0.012	0.126	-0.294	0.272	-0.288	0.293	1.000							
Q10	Correlation Coefficient	.409**	0.228	-0.007	.371*	-0.119	.518**	0.069	0.307	.446**	1.000						
Q11	Correlation Coefficient	0.112	0.028	0.233	0.106	-0.138	0.272	-0.149	0.308	0.221	.505**	1.000					
Q12	Correlation Coefficient	.437**	0.231	0.000	0.305	-0.058	.444**	0.230	.399*	0.223	.820**	.414**	1.000				
Q13	Correlation Coefficient	.521**	.556**	-0.174	.450**	0.007	.574**	.369*	.345*	0.122	.536**	0.171	.625**	1.000			
Q14	Correlation Coefficient	.392*	.450**	-0.182	.373*	-0.050	0.302	.326*	0.077	-0.061	.412**	0.110	0.282	.556**	1.000		
Q15	Correlation Coefficient	.482**	.660**	-0.221	.488**	-0.079	.640**	0.048	.358*	0.308	.345*	0.194	0.233	.586**	.386*	1.000	
Q16	Correlation Coefficient	.535**	.438**	-0.230	.472**	-0.172	.514**	0.149	.533**	0.227	.588**	0.306	.511**	.548**	.476**	.528**	1.000

Positive values designate a relationship which is directly proportional between the variables and negative values designate an inversely proportional relationship. All significant relationships are designated by a \* or \*\*. An example of this is the correlation value between “I believe the ISO quality management system improves the company resource program” and “Customer feedback methods improve the ISO quality management system” is 0.556. This is a directly proportional relationship. This means that respondents mean that the better the resource program, the better customer feedback methods are, and vice versa.

Negative values denote an inversely proportional relationship meaning that the variables have an opposite effect on each other. For example, the correlation value between “Top management retains too much control over the work of employees” and “Communication within the organization is good” is -0.434. That is, the more control top management retains, the less the communication with the organisation.

#### **Q1 Employee recruitment and Q2 Company resource program**

A Spearman’s rank correlation coefficient analysis was conducted on the reliability of the recruitment process and company resource program showed a positive coefficient of  $r = 0.706$ , this means that employee recruitment has a significant effect on the company resource program. The selection process of employees is the key to a successful organisation, Sharma (2005). Utilising ISO quality management system for selecting the successful candidate through exhaustive scrutinising process by a team of employers ensures sustainable results for the organisation. Therefore the recruitment process and the company resource program are linked with ISO quality management system.

#### **Q1 Employee recruitment and Q16 Customer satisfaction**

The Spearman’s rank correlation between employee recruitment and customer satisfaction was  $r = 0.535$ , meaning there is a close link between these two variables. The recruitment process of employees is vital for selecting the best candidate for the organisation and customer satisfaction is also vital to ensure that the organisation is profitable and hence the right person must be selected for the right job to satisfy these variables.

### **Q2 Company resource program and Q3 Top management control**

The correlation value between the company resource program and top management retaining too much control over work of employees was  $-0.337$ . This is an inversely proportional relationship meaning that respondents indicated that the more control top management retains the less or poorly the resource programs will be managed. This will not have a positive result on the performance of the organisation.

### **Q3 Top management control and Q5 Communication**

The correlation value between “Top management retains too much control over the work of employees” and “Communication within the organisation is good” was  $-0.434$ . This means that the more control top management retains, the less the communication with the organisation. An organisation cannot perform best with minimal communication.

### **Q5 Communication and Q7 Management’s goal awareness**

Good communications means that all employees are aware of the management’s goal. There was a correlation value of  $0.317$  between “Communication within the organisation is good” and “I am aware of the management’s goal”. There is some conflicting ideas between the respondents, some are satisfied with the communication levels and are aware of the managements goal whilst some respondents disagree. It means there is no consistency with communications, maybe top management only communicates with a certain group within the organisation and that is not filtered all the way down to all the lower levels. The company cannot perform well when not all employees are aligned with the goals. In fact this creates a lot of confusion and imbalance within the organisation.

### **Q6 Product quality and Q16 Customer satisfaction**

A strong correlation of  $0.514$  from respondents was shown between product quality and customer satisfaction. It means that a good product quality keeps customers satisfied whilst a bad quality keeps customers dissatisfied. The results were also the same from the internal auditing which gave a correlation of  $0.518$ . According to clause 8.2.2 of ISO 9001:2008, internal audits shall be carried out by organisations at planned intervals in order to determine whether quality management systems do conform to the realisation of product as well as to the international standards.

### **Q8 Business results motivation and Q12 Corrective and preventative action**

The correlation value between “Being informed of general business results motivates me” and “Corrective and preventative action can improve ISO QMS” was 0.399 and this is a directly related proportionality. Respondents therefore indicated that being informed of business results helps to improve the corrective and preventative methods. This would assist improving the performance of the organisation as it would minimise mistakes and also prevent costly mistakes.

### **Q10 Internal audit procedures and Q11 Teamwork improves ISO QMS**

Internal audits procedures correlated with the teamwork for improving the ISO quality management system with a value of 0.505. This means that working as a team will help improve the internal audit procedures which will in turn help take the corrective and preventative action where necessary. This is also shown by the correlation value of 0.802 between internal audits and corrective and preventative action. This is part of the aim of internal audits to fix problems where they have been identified in order to maintain or increase quality. The other advantage of internal auditing is that it goes beyond just offering statistical failure data but it also sets the stages for continuous improvement culture (Hernandez, 2010).

### **Q11 Teamwork improvement and Q 12 Corrective and preventative action**

A correlation value of 0.414 resulted between teamwork improvement and corrective and preventative action which is a directly proportional result. This means that working as a team will also help by identifying and taking better effective corrective and preventative action.

### **Q12 Corrective and preventative action and Q6 Product quality**

A correlation value of 0.444 resulted between corrective and preventative action and product quality which means that respondents indicate that corrective and preventative action will improve product quality

### **Q15 Continual improvement and Q4 People management**

The correlation between continual improvement and people management showed an important relationship between continual improvement and people management. ISO 9001:2008 quality management system incorporates all management systems inside

the organisation. It has been stressed by King and Lenox (2001) that through the effectiveness of ISO quality management system, organisations will continually improve.

#### **4.5 CONCLUSION**

The research questions were analysed in accordance to the research objectives in chapter 4. Fisher's correlation technique was used for all the questions for expanding further on the data and to also present more understanding into the data. There were mostly positive relationships found between the questions from the views of the respondents. Chapter 4 has therefore given an insight on how John Thompson staff view the quality management system.

The first objective aimed at establishing the role of human talent in the maintenance of QMS in the organisation. The study highlighted that the human talent have an understanding of the maintenance that need to be carried out in order to improve ISO quality management system as per the first objective. The study also highlighted top management is one of the barriers in achieving this since it retains too much control over the work of employees which meant they were unable to perform at their best. The study highlighted a gap in the communication between top level employees and low level employees.

The second objective aimed to determine the effectiveness of internal audit systems in identifying QMS shortfalls for continuous improvement. The study also found that the respondents understand the effectiveness of internal audit system for improving ISO quality management system as per second objective. There is however some gaps found that could limit the effectiveness of the internal audits within the organisation. For an example the managements' objectives are not clearly communicated which could potentially clash with the ISO quality management objectives.

The third objective aimed to propose an improvement model to John Thompson on the maintenance of QMS. The third objective was met since the respondents positively to the improvement methods for the ISO quality management system. The three

research objectives have therefore been achieved and the findings have been made which have been confirmed by the data.

The research objectives will be revisited in the next chapter and also elaborate on the conclusions and present recommendations based on the objectives of the study.

## **CHAPTER 5**

### **CONCLUSIONS, RECOMMENDATIONS, FUTURE RESEARCH**

#### **5.1 HAVE THE OBJECTIVES BEEN ACHIEVED**

The objectives of the study were to:

- Establish the role of human talent in the maintenance of QMS in the organisation;
- Determine the effectiveness of internal audit systems in identifying QMS shortfalls for continuous improvement; and
- Propose an improvement model to John Thompson on the maintenance of QMS.

The first objective was achieved which was realising the role of human talent in the maintenance of QMS at John Thompson. The second objective has not been achieved entirely. There are some gaps on the organisations' internal audit systems before it can be deemed effective. It has also been shown that the respondents understand what needs to be done in improving the effectiveness of internal audits. The third objective was achieved for the proposal of improvement models for the maintenance of QMS.

The purpose of this study was to review the effectiveness of ISO 9000 post certification of ACTOM John Thompson. The aim of the study has been met since it identified the factors that contributed into the ISO quality management systems being effective. It can therefore be said that currently, the organisations' system is not effective but the contributing factors have been identified to improve the effectiveness.

#### **5.2 HAS THE PROBLEM BEEN SOLVED?**

The results from the research topic were presented and discussed in chapter 4. There was mostly consistent feedback from the respondents which indicated that they understood the important role of ISO quality management system and willing to

contribute into improving its maintenance. The problem has not yet been resolved as it requires further research to effectively resolve the problem.

### **5.3 CONCLUSIONS**

Chapter 5 offered conclusions and proposed recommendations from the objectives of the study. The objectives were covered with conclusions and recommendations for each objective. If the recommendations are implemented by the organisation, it would enhance the maintenance of ISO quality management system and therefore benefit the organisation positively.

### **5.4 IMPLICATIONS OF THE STUDY**

ISO quality management system is an international management system that is used by many organisations in different industries due to its many advantages. This is because customers believe that it ensures consistent good product quality is produced and it reduces rejects for the manufacturing organisations which increases profits and increases competitive edge. The employees' skills will be effectively utilised within the organisation and management will also improve their management skills by involving employees more and also improve communications to better the ISO quality management system.

### **5.5 RECOMMENDATIONS**

#### **5.5.1 Human Talent**

Management is responsible for establishing and maintaining company objectives and policies and to also ensure they are aligned with the quality objectives. Procedures need to be established that will control ISO quality management system clearly outlining responsibilities and actions needed for achieving consistency with customer requirements and statutory requirements. Procedures need to also include the recruitment process that must be carried out in order to ensure the right person for the right job is recruited.

Management needs to involve the employees more with decision making as they are the ones carrying out the daily production tasks that affect the output of the products. The employees would have more insight of the improvement methods best. Clause 5.4.2 of ISO 9001:2008 states that management is responsible for planning of interrelationships between employees who perform, manage and verify the processes in relation to the product quality and services. This will also promote information sharing and thus strengthen the knowledge of employees for carrying out their tasks best.

### **5.5.2 Internal audits**

Internal audits must not be viewed negatively that it is there to catch people who are not doing their work properly. It must be seen as a refresher and also an opportunity to improve the current procedures. There is always a valid reason why there was a finding on a certain procedure and if the root cause is not assessed properly, there will not be an effective corrective and preventative measure taken.

It may be worthwhile that the finding is communicated and discussed among the whole team instead of the one individual. This will help to create a discussion about the issue and that best ideas are shared on how to correct and prevent the reoccurrence is done. It will also help by teaching others who may also have had a wrong impression of how a certain task should be carried out. This will also motivate employees to speak out if they do not understand a certain procedure and also everyone will be aware of the updated procedure once the work instruction has been updated with the appropriate measures.

A formal training may also be required to be carried out after a certain procedure has been updated. Competence training and awareness are necessary for ensuring that correct procedures are followed for ensuring consistent quality products and services are delivered. This is stated in Clause 6.2.2 of ISO quality management system that line managers and supervisors are responsible for ensuring that all employees are aware of the importance and relevance of their work tasks and how they add value to realisation of quality objectives. Training records and experience of employees need to be maintained and updated regularly.

### **5.5.3 Communication and Information of Business Results**

Communication is very critical when working with a team of individuals and for the success of an organisation and therefore this must be a priority for the management to ensure it happens at all levels of the organisation. The management should not underestimate the potentials of the employees. By not informing the employees of the general business results creates an impression to employees that they are not important enough to be informed of the daily running of the organisation. Informing the employees also motivates them to excel in their duties which ultimately benefit the organisation.

As per clause 5.5 of ISO 9001:2008 of the quality management system, management is responsible for making sure that appropriate communication processes are clearly established and maintained. Various communication channels can be provided by an organization in order to promote employee communication and sharing of knowledge. One way of ensuring communication is through work instructions, flow charts and procedures. Managers need to express their priorities and expectations to the employees in order to improve commitment to quality with well-designed communication (Demirbag & Sahadev, 2008).

One of the ways to ensure cooperation of employees is to take account satisfaction of employees in the communication agenda with management. The next sensible step of the quality representative is to develop a method of measuring employee satisfaction which will in turn establish a two-way communication.

### **5.6 FUTURE RESEARCH**

The respondents did not rate communication positively which can affect the ISO quality management system negatively. It was however not clear from the research what was the cause of poor communication and hence a need to carry out a qualitative study on communication to establish the origins of the negative responses.

### **5.7 LIMITATIONS OF THE STUDY**

The sample size could have been a limitation and this could have given different results if more respondents participated in the study. The study was also limited to the Durban branch of John Thompson whilst there are also divisions based in Johannesburg and Cape Town. It would be worthwhile if this study is done in all the divisions of the organisation since quality managements systems affects the entire organisation.

## 6. REFERENCES

- Adam, E.E. Jr, Corbett, L.M., Harrison, N.J., Lee, T.S., Ho, R.B. and Samson, D. (1996). A study of quality management practices and performance in Asia and South Pacific. *Proceedings of the First International Research Conference on Quality Management*, pp. 1-12.
- Alvesson, M. and Sandberg, J. (2013). Has management studies lost its way? Ideas for more imaginative and innovative research. *Journal of Management Studies*, 50(1):128-152.
- Ataseven, C., Prajogo, D. I., Nair, A. (2014). ISO 9000 Internalization and Organizational Commitment - Implications for Process Improvement and Operational Performance. *IEEE Transactions on Engineering Management*, 6(1), pp. 5-17.
- Beer, M. (2003). Why Total Quality Management Programs Do Not Persist: The Role of Management Quality and Implications for Leading a TQM Transformation. Decision Science, Harvard Business School.
- Bluhm, D, Harman, W, Lee, T. and Mitchell, T. (2011). Qualitative research in management: a decade of progress. *Journal of Management Studies*, 48(8), pp. 1866-1891.
- Bendoly E, Citurs A. and Konsynski B. (2007). Internal infrastructural impacts on RFTD perceptions and commitment: Knowledge, operational procedures and information-processing standards, *Decision Sci.*, vol. 38. pp. 423-449.
- Carmeli, A. and Tischler, A. (2004). The relationships between intangible organizational elements and organizational performance. *Strategic Management Journal*, 25, 1257–78.
- Blumberg Boris, Cooper Donald R. and Schindler Pamela S. (2005). *Business Research Methods*. Boston: McGraw-Hill.
- Buckley, JW, Buckley M.H and Ching H.F (1975). Research Methodology and Business Decisions, National Association of Accountants and the Society for Industrial Accountants of Canada. pp. 26
- Casadesus, M.; Karapetrovic, S. (2005), An empirical study of the benefits and costs of ISO 9000 compared to ISO 90001/2/3:1994, *Total Quality Management*, 16(1), 105-120.
- Hooper, Jeff. (2002).The Process Approach to Quality Management Systems, The ASQ ISO 9000:2000 Handbook, ASQ Quality Press, 2002, pp. 11-16.

Chin, K., Poon, G.K. and Pun, K. (2000), "The critical maintenance issues of the ISO 9000 system: Hong Kong manufacturing industries perspective", *Work Study*, Vol. 49 No. 3, pp. 89-96.

Cooper, D. R. & Schindler, P.S. (2006). *Business research methods*. Boston: McGraw-Hill.

Dahlgaard, J.J., Kristensen, K. & Kanji, G.K. (1998). *Fundamentals of Total Quality Management: Process Analysis and Improvement*. Cheltenham: Nelson Thorne.

Davenport T, Thomas H., and Prusak L. (2000). *Working Knowledge: How Organisations Manage What They Know*. Boston, MA, USA: Harvard Business School Press.

Dearing, J. (2009). ISO9001 Could it be better quality progress, February 2009, pp23.27.

Debois, S. (2016). 9 Questionnaire Pros and Cons Every Marketer Should Know. March 16 2016, <https://surveyanyplace.com/questionnaire-pros-and-cons>. Accessed on the 19<sup>th</sup> September 2016.

Deloitte & Touche and Personnel Today (2002). *Measuring human capital value 2002 survey*. London:Deloitte & Touche.

Demirbag, M. & Sahadev, S. (2008). Exploring the antecedents of quality commitment among employees: an empirical study. *International Journal of Quality and Reliability Management*, 25(5), 494–507.

Denzin & Y.S. Lincoln (Eds.), *The Sage Handbook of Qualitative Research*, 3rd edition, pp. 105-177, Thousand Oaks, CA: Sage Publications, Inc.

Dorasamy N. & Balkaran B. (2013). Role of Student Ratings of Lecturers in Enhancing teaching at Higher Education Institutions: A case study of the Durban University of Technology. *Journal of Economics and Behavioral Studies* Vol. 5, No. 5, pp. 268-281.

Fellows, R. and A. Liu. (2008). *Research methods for construction*. Oxford: Wiley-Blackwell.

Fuentes CM, Benavent, FB, Moreno MAE, Cruz TG, Val MP (2000). Analysis of the Implementation of ISO 9000 Quality Assurance Systems. *Wor. Stud.*, 49(6): 229-241.

George, Jennifer. M., Jones, Gareth. R. 2006. 4th Edition, Contemporary Management Creating Value in organizations, McGraw-Hall Irwin, ISBN 13:978-0-07-111547-6.

Gotzamani, K.D., Tsiotras, G.D., Nicolaou, M., Nicolaidis, A., & Hadjiadamou, A. (2007). The contribution to excellence of ISO 9001: the case of certified organisations in Cyprus. *The TQM Magazine*, 19(5), 388–402.

Gowda V. (2011). How the ISO 9001:2008 Quality Management System affects the Rubber and Plastics Industry of South Africa. *Masters Degrees (Graduate School of Business and Leadership)* [725]

Guzman G (2013). The grey textures of practice and knowledge: review and framework. *European Business Review*, 25(5), pp. 429-452

Hansen M. T., Nohria N., and Tierney T. (1999). What's your strategy for managing knowledge? *Havard Business Rev.*, pp. 106-116, Mar/Apr.

Hage, J. (1980). *Theories of Organization: Form, Process and Transformation*: John Wiley & Sons Inc., New York, NY.

ISO (2004), ISO Survey. Retrieved November 16, 2005 from: <http://www.iso.org/iso/en/iso9000-14000/iso9000/iso/9000 index.html>.

Johnston A. (2014). Rigour in research: theory in the research approach. *European Busines Review*, 26(3), pp. 206-217.

Kampetrovic S. and WiJlborn W. (2001), ISO 9000 quality management standards and financial investment services, *Service Ind. J.*, vol. 21, pp. 117136.

Kaplan S. and Norton D. (1996). *The balanced scorecard*. Boston: Harvard Business School Press.

Kehoe DF (1996). *The Fundamentals of Quality Management*, Chapman and Hall, London.

Ketola, J., Roberts, K. (2001). Transition planning for ISO 9001:2000 qualities digest March 2001pp. 24-28 [www.ASQC.org](http://www.ASQC.org).

King, A. A., Lenox, M. J. (2001). Lean and green, An empirical examination of the relationship between lean production and environmental performance. *Production and Operations Management* 10(3): 244-256.

Kung Leong T., Zakuan N, Saman M. (2012). Quality Management Maintenance and Practices- Technical and Non-Technical Approaches. *International Congress on Interdisciplinary Business and Social Science*

Lee, S.F., Roberts, P. and Lau, W.S. (1999), "Survey on ISO 9000 quality management system implementation in Hong Kong", *Managerial Auditing*, Vol. 14 Nos 1/2, pp. 79-88.

Leedy, P.D. & Ormrod, J.E. (2001). *Practical research Planning and Design*. New Jersey: Merrill Prentice Hall

Loseke, Donileen R., Cahil, Spencer. E. (2007). *Publishing Qualitative Manuscripts: Lessons learned*.

Low S.P, Alfelor WM (2000). Cross-cultural Influences on Quality Management Systems. *Work. Stud.*, 49(4): 134-144.

Low, S.P. and Omar, H.F. (1997), "The effective maintenance of quality management systems in the construction industry", *International Journal of Quality & Reliability Management*, Vol. 14 No. 8, pp. 768-90.

Mauil P, Brown P, Cliffe R (2001). Organisational culture and quality improvement. *Int. J. Operat. and Product. Manage.*, 21(3): 302-326. Mo JPT, Chan AMS (1997). Strategy for the successful Implementation of ISO 9000 in Small and Medium Manufacturers. *TQM. Magazi.*, 9(2): 135-145.

Matthewman J. and Matignon F. (2004). *Human capital reporting: An internal perspective*.

Merriam, S. B. (2009). *Qualitative research, a guided to design and implementation*. San Francisco, CA: John Wiley and Son.

Mitchell Vince (1996). Assessing the reliability and validity of questionnaires. *Journal of Applied Management Studies*, Dec96, Vol. 5, Issue 2

O'Leary Z (2004). *The essential guide to doing research*. Sage Publications, London.

Park, D.J., Kim, H.G., Kang, B.H., & Jung, H.S. (2007). Business values of ISO 9000: 2000 to Korean shipbuilding machinery manufacturing enterprises. *International Journal of Quality & Reliability Management*, 24(1), 32-48.

Prado-Prado, J.C., Fernández-González, A.J., & García-Lorenzo, A. (2004). Quality Management and Personnel Participation: Improvement Teams, A Solution for ISO 9000 System Maintenance Problems in Small to Medium-Sized Enterprises. *Human Factors and Ergonomics in Manufacturing*, 14(3), 221–237.

Quinlan C (2011). *Business Research Methods*, Cengage Learning, Stamford,CT  
Rajan, M., Tamimi, N. 2003. "Payoff to ISO 9000 Registration," *Journal of Investing*, (Spring), Volume 12, Issue 1.

Rowley J (2014). Designing and using research questionnaires. *Management Research Review*, 37(30), pp. 308-330

Saari, L.M. & A. Judge, T.A. (2004). Employee attitudes and job satisfaction. *Human Resource Management*, 43(4), 395–407.

Saunders, M., Lewis, P. and Thornhill, A. (2009). *Research Methods for business students*. Fifth ed., England: Pearson Education Limited.

Sekaran, U. and R. Bougie. (2009). *Research methods for business: A skill-building approach*. Fifth ed. Chichester-UK: Wiley.

Sekaran U. and Bougie R. Research (2013). *Research Methods for Business*. Sixth Edition. West Sussex, John Wiley & Sons Ltd.

Sharma, D. S. (2005). The association between ISO 9000 certification and financial performance. *The International Journal of Accounting* 40: 151-172.

Subramaniam M. and Youndt M. A. (2005). The influence of intellectual capital on the types of innovative capabilities, *Academy Manage. J.*, vol. 48, pp.450-463.

Svenson G (2013). Process of substantiations and contributions through theory building towards theory in business research. *European Business Review*, 25(5),pp. 466-480.

Terlaak, A. A., King.A.A. (2006). The effect of certification with the ISO 9000 Quality Management Standard: A signal approach. *Journal of Economic Behavior & Organization* 60: 579-602.

Trochim, William. M. 2006. "Likert Scaling". (2009). *Research Methods Knowledge Base*, 2<sup>nd</sup> Edition. <http://www.socialresearchmethods.net/kb/scallik.php>.

Turusbekova, N., Broekhuis, M., Emans, B., & Molleman, E. (2007). The Role of Individual Accountability in Promoting Quality Management Systems. *Total Quality Management & Business Excellence*, Vol. 18, No. 5, 471–482.

Van De Water, H. (2000). A maintenance model for quality management, *The International Journal of Quality and Reliability Management*, Vol. 17 No. 7, pp. 756-70

Van Eeden G.A. (2004). A quality management system for the Namibia Water Corporation Limited.

Roslina A.B. Wahid, (2012), "Beyond certification: a proposed framework for ISO 9000 maintenance in service", *The TQM Journal*, Vol. 24 Iss 6 pp. 556 - 568

Uebersax, John. S. (2006). "Likert Scales: Dispelling the Confusion". <http://www.johnuebersax.com/stat/likert.htm>. Retrieved September 17, 2016.

Willar Debby (2012). Improving Quality Management System Implementation in Indonesian Construction Companies. A thesis submitted to Queensland University of Technology.

Wahid R.A. and Corner J.(2009). Critical Success Factors and Problems in ISO 9000 Maintenance. *International Journal & Reliability Management*, Vol. 26 No. 9, pp. 881-893.

West Jack E, (2002). Three strategies for aligning policies, objectives and processes. [www.qualitydigest.com/june02/hkml/threestr.html](http://www.qualitydigest.com/june02/hkml/threestr.html)

Zelnik, M., Maletic, M., Maletic, D. & Gomiscek, B. (2012). 'Quality management systems as a link between management and employees', *Total Quality Management and Business Excellence*, vol. 23, no. 1, pp. 45-62.

## **Appendix A - Questionnaire**

Dear Participant

Mrs. Phindile Miya, Project Manager at John Thompson Industrial Watertube Department, is conducting a research study as part of completing her Masters in Business Administration (MBA).

The survey is part of a research project aimed at evaluating the effectiveness of QMS post ISO 9000 certification. The enclosed questionnaire will gather data pertaining to this study and will give further insight into competitiveness of John Thompson. The questionnaire will take approximately 20 minutes to complete. Please answer the questions in spaces provided by placing a cross next to your preferred answer. The information will be treated with confidentiality and anonymity. In the event you neither agree nor disagree with the statements provided, kindly chose neutral as your answer. Thank you in advance for your cooperation in my research.

Yours Sincerely  
Phindile Miya

#### Biographical information

a) Your age

Under 35	1
36-50	2
51-65	3
Over 65	4

b) Your highest education level

High school	1
Trade test	2
University degree/Diploma	3
Masters/MBA	4
Doctorate	5

b) Your gender

Male	1	Female	2
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c) Present job level

Top management	1
Senior management	2
Middle management	3
Employee	4

e) How many years of experience do you have with John Thompson organization?

1-5	1
6-10	2
11-15	3
16-20	4
Over 20	5

f) Please indicate your main organizational function?

Administration	1
Accountancy	2
SHEQ	3

Human Resources	4
Projects	5
Proposals	6
Construction	7
Production	8
Engineering	9

**Section B:**

Instructions

The following statements/questions canvas your opinion regarding the effectiveness of QMS post ISO 9000 certification at John Thompson.

Please highlight the extent to which you Agree or Disagree with the questionnaire statement by putting a cross (X) on the number that represent your view.

Kindly cross only one answer per statement.

Q1. ISO quality management system improves the employee recruitment process

1	2	3	4	5
Strongly disagree	Disagree	Agree	Strongly agree	Neutral

Q2. I believe the ISO quality management system improves the company resource program

1	2	3	4	5
Strongly disagree	Disagree	Agree	Strongly agree	Neutral

Q3. Top management retains too much control over the work of employees.

1	2	3	4	5
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Strongly disagree	Disagree	Agree	Strongly agree	Neutral
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Q4. ISO quality management system helps to improve people management i.e. "right people in the right place".

1	2	3	4	5
Strongly disagree	Disagree	Agree	Strongly agree	Neutral

Q5. Communication within the organization is good.

1	2	3	4	5
Strongly disagree	Disagree	Agree	Strongly agree	Neutral

Q6. ISO quality management system improves the product quality.

1	2	3	4	5
Strongly disagree	Disagree	Agree	Strongly agree	Neutral

Q7. I am aware of the management's goals

1	2	3	4	5
Strongly disagree	Disagree	Agree	Strongly agree	Neutral

Q8. Being informed of general business results motivates me.

1	2	3	4	5
Strongly disagree	Disagree	Agree	Strongly agree	Neutral

Q9. Customer's approval of my work motivates me.

1	2	3	4	5
Strongly disagree	Disagree	Agree	Strongly agree	Neutral

Q10. Internal audit procedures can improve the ISO quality management system

1	2	3	4	5
Strongly disagree	Disagree	Agree	Strongly agree	Neutral

Q11. Teamwork can improve the ISO quality management system

1	2	3	4	5
Strongly disagree	Disagree	Agree	Strongly agree	Neutral

Q12. Corrective and preventative action can improve the ISO quality management system's organisation.

1	2	3	4	5
Strongly disagree	Disagree	Agree	Strongly agree	Neutral

Q13. Customer feedback methods improve the ISO quality management system

1	2	3	4	5
Strongly disagree	Disagree	Agree	Strongly agree	Neutral

Q14. Do you believe that quality controls and quality assurance underpin the quality management systems?

1	2	3	4	5
Strongly disagree	Disagree	Agree	Strongly agree	Neutral

Q15. The continual improvement of a quality management system will enhance the employee / employer relationship.

1	2	3	4	5
Strongly disagree	Disagree	Agree	Strongly agree	Neutral

Q16. The ISO quality managements system improves customer satisfaction

1	2	3	4	5
Strongly disagree	Disagree	Agree	Strongly agree	Neutral

Thank you for participating in the survey

