

# A snap on quality management in Zimbabwe: a perspectives review

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## Abstract

**Purpose:** The main objective of this article was to provide evidence concerning the level of Quality Management (QM) in Zimbabwe. Submitted evidence regarding QM in Zimbabwe will help organizations that want to implement QM systems. The results can guide government agents in making informed decisions towards QM systems implementation since very few organizations are officially quality certified.

**Research methodology:** The survey followed online search query on quality management in Zimbabwe from journal articles, proceedings and institutional repository. 51 publications were selected and excel file was used to capture data and analyse.

**Results:** The results expose that there was high interest in QM in 2014, 2015 and 2016. The results showed industries lack of capacity and resources, lack of skills and expertise, poor communication with stakeholders, poor raw materials, changing customer preferences, lack of top management commitment and costs of QM systems as key barriers to QM implementation.

**Limitations:** The study limitation was survey of few studies retrieved through Bindura University online library and open access journal articles, proceedings papers and dissertations/thesis available on institutional repository.

**Keywords:** *Zimbabwe, Quality Management (QM), Drivers, Barriers, Benefits*

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## 1. Introduction

Quality Management (QM) nowadays is a need in the countenance of intensifying competition among firms and demanding business operations in different sectors of the economy. The global market, demand for high quality goods and services and the creation of quality culture among consumers makes it clear that “quality” has become universally well-defined term of customer perception and expectations beyond production of goods and services. If you ask ten people to define quality, you will probably get ten different definitions. There are many definitions of quality and it is very difficult to define quality of products and services because of their unique characteristics. Quality is defined antithetically, synonymous or even complementary by quality gurus, standard association and organizations. Quality is conformance to requirements or specifications (Crosby, 1979). Quality is a totality of features and characteristics of a product or service that bear on its ability to satisfy given needs (ASQ, 2019; ISO, 2019). Goetsch & Davis, (2010) noted quality is not fixed but change with customers’ expectations and views of the world after drawing together the themes of a number of definitions to create a unifying definition.

QM is a management philosophy that encompasses all features of quality that are of interest to both the organization and the consumer. Proper QM implies implementation of quality assurance which is the assembly of all planned and systematic actions necessary to provide adequate confidence that a product,

process, or service will satisfy given quality requirements (ISO, 2019). Quality assessment and control warrants prevention of mistakes in production of goods and services. When implemented properly QM systems such as Six Sigma, Lean, Total Quality Management (TQM) and others can save the organizations' resources. The organisation resources can be saved through reducing operating expenses, reducing defects and wastes, speed communication and understanding customers' expectations and being competitive in the market ([Madanhire & Mbohwa, 2014](#); [Mambanda, et al., 2017](#); [Mahmutay, et al., 2015](#)). Organizations in different industries (sectors of the economy) have adopted QM practices so as to be competitive despite difficulties in and outside the organizations.

The Republic of Zimbabwe is a landlocked country in Southern Africa with a population of 14 439 018 people as of 2019. Zimbabwe's economy is in the doldrums with shrinking Gross Domestic Product (GDP) of 8.1% and youth unemployment rate of 8.7% ([World Bank, 2020](#)). The widespread dispersion and acceptance of QM techniques will make an organization, an industry and ultimately country's economy more competitive. QM at state level lead to cumulative economic efficiency, - higher innovation and the development of human capital for achieving increased productivity and competitiveness levels ([Ayandele & Akpan, 2020](#)). At national level there is Standard Association of Zimbabwe (SAZ) a quasi-government organization responsible for QM systems accreditation, training and auditing affiliated to International Standards Organization. QM initiatives at international facilitate market access by removing technical barriers to trade. In this study aspects that impact effective application of quality management such as drivers for successful implementation of QM, barriers, benefits and QM initiatives were scrutinised from published quality management literature in Zimbabwe from 2010 to 2019. Specific quality management models/systems are highlighted. This is essential for the development of QM in Zimbabwe.

From the reviewed literature it is evident that there is no literature nexus in the field of QM in Zimbabwe. Therefore, there is need for a thorough literature synthesis to provide information on drivers of QM initiatives, barriers to QM, types of QM systems and benefits of QM in order to advance QM in Zimbabwe. This literature nexus propositions evidence from the area of QM in Zimbabwe to organization that want to implement QM. Published QM literature over the past ten years (2010 to 2019) is summarised, analyzed and comments presented.

## 2. Literature Review

### 2.1. Barriers to QM

[Hill \(2008\)](#), identified five most significant barriers to TQM implementation from a section survey of ASQ members related with an effective quality transformation. The major barriers to successful implementation were; organization's reward system was not tied to achieving quality objectives, employees lack quality improvement skills, inadequate resources to successfully employ total quality management, employees resistant to change, employees not trained in problem identification and problem-solving techniques. Three key constructs to the barriers were identified as; lack of training for quality, lack of planning for quality, and lack of leadership for quality. The size of the building project, cost and budget are two new dimensions of barriers to implementation of QM specific to construction industry ([Femi, 2015](#)). In the Nigerian manufacturing industry [Ayandele & Akpan, \(2015\)](#); identified lack of financial resources, lack of moral will power and lack of top management support as barriers to QM initiatives. In financial services industry some organizations encountered challenges in the implementation of QM, because of the internal barriers, which are more related to resistant to change as equated to organizations in manufacturing industry ([Mahmutay, Jusufi, Zylfijaj, & Grubi, 2015](#)). The barriers to QM systems implementation were found to be pointedly related to specific possible outcomes that are used to measure success or failure of QM initiatives ([Hill, 2008](#); [Dube, 2018](#); [Goriwondo, et al., 2012](#), [Femi, 2015](#)). The potential outcomes of QM initiatives failure include high turnover of employees, high management turnover, the high cost to benefit ratio of QM, and quality improvement (QI) results hardly meet expectations.

## 2.2. Drivers for successful implementation of QM

The study of QM includes the question of what are drivers or enablers for successful implementation of QM systems. According to [Khoo & Tan, \(2002\)](#) in [Al-Ababneh, \(2016\)](#) drivers for successful implementation of QM are the critical success factors or enablers of QM which are the exercises that have to be taken appropriately for an organization to realise its goals. The acquaintance of drivers for successful implementation of QM is important in order to advance QM initiatives ([Nair & Choudhary, 2017](#)). The examination of drivers for successful implementation of QM outlines the fundamentals to the change process to enhance QM initiatives likelihood of success. According to [Nair and Choudhary \(2017\)](#) and [Mahmutay, et al., \(2015\)](#); if all drivers for successful implementation of QM like commitment by top management and all employees, focus on customer satisfaction, training and education, employee involvement and participation, co-operation and teamwork, employee empowerment, adequate planning and monitoring, reward and recognition, strong leadership, effective communication and feedback device are well in place in an organizations, QM initiatives will be successful. To develop a complete QM system, drivers for successful implementation of QM should be well-thought-out in the early phases of QM planning and designing processes ([Moheel, Alkatheri, & AISukhayri, 2019](#)).

## 2.3. Benefits of QM Implementation

Organizations implement QM to support what customers' demand and expect ([Lee, 2016](#); [Masrurul, 2019](#)). A continuous improvement is a first step for quality management and a second step of excellence; it is one of the main benefits of QM. QM improves internal procedures and reduces paper work ([Moheel, et al.; 2019](#)). QM adoption improves the image and reputation in the eyes of the customers and gives a mark of respect for organizations and acts as a signal to markets and customers indicating security and conformity ([Basera & Makandwa, 2020](#)). Adoptions of QM models such as ISO 9001 by organizations have shown significant improvement in quality of their product ([Ngwenya, et al., 2016](#); [Watiki, 2014](#); [Isabiry & Pelser, 2017](#); [Chivandi & Maziri, 2017](#); [Chikuku, et al., 2012](#)). [Watiki \(2014\)](#), studied hotels in Kenya to understand factors prompting customers satisfaction and the association between service quality and customers satisfaction. His results suggest that service quality supports 74.2% of customer satisfaction. This suggests that service quality backs 74.2% of customer satisfaction while the other issues influences 25.8% of customer satisfaction. In Bangladesh tourism organizations using quality management systems were performing well with good and effective relations with customers and employees ([Masrurul, 2019](#)). Organizations surveyed for QM adoption, the results pointed out that a high proportion of organizations being certain of their reputation, products and services improved after adopting QM initiatives ([Ayandele & Akpan, 2015](#); [Chikosha, 2016](#); [Dowa, 2019](#); [Femi, 2015](#); [Kufa, 2015](#); [Psoomas, et al., 2014](#)).

QM implementation have led to expect design, product, processes and supplier relationships according to research done at Delta, one of the biggest beverages manufacture in Zimbabwe ([Madanhirea & Mbohwa, 2016](#)). Benefits and improvements brought by QM are also internal improvement, greater quality awareness and improved awareness of problems within the work organizations. Product development processes based on QM have improved after QM systems implementation ([Biswakarma, 2017](#); [Heizer & Render, 2014](#); [Ngwenya, et al., 2016](#)). Quality denotes an essential state for the competitiveness of firms producing goods and services at global level in the present economy defined by stiff competition. Quality consideration is the strategic contribution that cannot be neglected in order to achieve competitiveness ([Dobrin, et al., 2015](#); [Mizanbekova, et al., 2017](#)).

## 2.4. Quality Management Models/Systems

A number of recognised QM systems have been developed for use all over the world in different industries. According to [ISO \(2019\)](#) quality management system is a set of harmonized activities used to lead and control an organization in terms of quality. Internationally, the QM systems are drawn upon TQM ([Juran, 2016](#)); organizations apply different quality initiatives such as ISO 9001, continuous improvement, six sigma, lean production, benchmarking, and business excellence models. TQM is an idea of management ensuing from the work of quality authorities ([Biswakarma, 2017](#)). TQM is grounded on three important principles which are; customer orientation to satisfy customer

requirements and expectations; process orientation (input-process-output) and continuous improvement as a derived from the works of quality experts ([Deming, 1986](#); [Ishikawa, 1985](#)). The ISO 9000 reports on several aspects of quality management and comprises some of the ISO's eminent standards ([ISO, 2019](#)). The standards presents direction and tools for organizations that want to produce products that continuously meet customer's requirements, and of enhanced quality ([Nyambwa, 2017](#)).

Lean production originated in the Toyota Corporation, it is a yard stick of Lean Thinking which many service companies have implemented as a quality management system ([Mahmutay, et al., 2015](#); [Matombo, 2014](#)). Its main principle is determination on identifying and refining steps in an operation that the customer considers valuable, and to remove unnecessary or wasteful steps in a process ([Lee, J. Larry, & Manoj, 2012](#)). Six Sigma is a QM system applicable in both service and manufacturing organization than Lean ([Kwaka & Anbari, 2006](#)). Six Sigma as a QMS has five steps which are DMAIC (define, measure, analyze, improve and control) ([Heizer & Render, 2014](#)). [Holt & Eccles, \(2015\)](#) defined benchmarking as the continuous measurement and examination of business performance and practices against the organizations which are measured as best competitors. Through benchmarking, organizations compare themselves with the finest and constantly evaluate their practices, processes and methods to assure the strength of their competitive position in relation to their competitors. Benchmarking stimulates organizations to learn and change in order to reach higher customer value ([Gwimbi & Nhamo, 2016](#)).

Continuous Quality Improvement (CQI) is a philosophy that emphasizes on improving processes, practices and methods to enable companies offer customers what they primarily want at first time, every time ([Chikosha, 2016](#)). According to [ASQ \(2019\)](#), CQI is a continuing effort to improve products, services or processes. The efforts are aimed at incremental or breakthrough improvements product quality over time. Corporate culture creation is not core in CQI but at core is the process of quality improvement. Business Excellence (BE) models are used as QMS tools in many countries to assist organizations to improve on their performance ([Ioannis & Dimitrios, 2017](#); [Kanji, 2012](#)). TQM is the basis of BE because the fundamental ideas are the same; participation of top management, stakeholder involvement and holistic approach ([Maganga, 2018](#); [Kanji, 2012](#)). The most distinguished BE models applied world over are Deming Prize, European Foundation for Quality Management (EFQM) model and Malcolm Baldrige National Quality Award (MBNQA).

Statistical processes control (SPC) is the use of statistical means to manage a process to confirm that it functions at its optimum potential to produce a product meeting requirements ([Madanhirea & Mbohwa, 2016](#)). When using SPC a process is predictable producing confirming products and minimising waste as much as possible. Control charts, graphs, scatter diagrams, cause and effect diagram, pareto chart, histogram, and check sheets are seven tools in SPC ([Heizer & Render, 2014](#)). Applicability of SPC is easy in manufacturing industry where the product quality dimensions are easy to measure than in the service sector where the service quality dimensions are not easy to measure. There are also industry specific QM systems for instance in Food industry there is Assured Safe Catering (ASC) and Hazard Analysis Critical Control Point (HACCP).

### **Research questions**

This study objectives to offer answers to the subsequent six research questions:

1. What are the industries that have been investigated of QM in Zimbabwe?
2. What are the methods that are used in QM studies?
3. What are the barriers to QM systems?
4. What are the drivers to successful implementation of QM systems?
5. What are the QM systems or models that have been implemented in Zimbabwe?
6. What are the benefits of implementing QM systems?

### **3. Research methodology**

Selected articles from online publications (journals and conference proceedings papers, thesis/dissertations) that have been published from 2010 to 2019 in the subject of Quality Management in Zimbabwe. We used search engines and database mainly: Research Gate, Google Scholar, Science

Direct, Taylor and Francis, science Direct, Bindura University online Library. The search query was total quality management in Zimbabwe, quality management in Zimbabwe, quality assessment in Zimbabwe, quality evaluation in Zimbabwe, total quality evaluation in Zimbabwe, total quality measurement in Zimbabwe, business excellence in Zimbabwe, business excellence models in Zimbabwe and quality management systems in Zimbabwe. After a thorough read the articles of journals, proceedings and institutional repository we concluded that the research questions were met (Ioannis & Dimitrios, 2017). We selected 51 publications and excel file was used to record data according to type of journal, year, topic, proceedings paper, thesis/dissertation, method used in the research, industry, drivers for successful implementation of QMS, barriers to QM, benefits of QM and the type of QM systems/model.

The surveyed published papers on QM in Zimbabwe provided literature on the barriers to QM in different areas, drivers for successful adoption/implementation of QM, the quality models or systems that have been implemented in Zimbabwe and the benefits of QM implementation. This paper reviews studies that have empirically and theoretically investigated Quality Management in Zimbabwe from 2010 to 2019 and discusses the results. The paper also noted gaps and way forward for future research in the area of QM within Zimbabwe.

#### 4. Results and discussions

##### 4.1. Number of QM studies

51 journal articles, proceedings papers and thesis/dissertations were investigated. The bulk of the studies are in journal articles (59%, N = 34) trailed by the studies in thesis/dissertation (33%, N =16) and the least in conference proceedings papers (8%, N = 4).

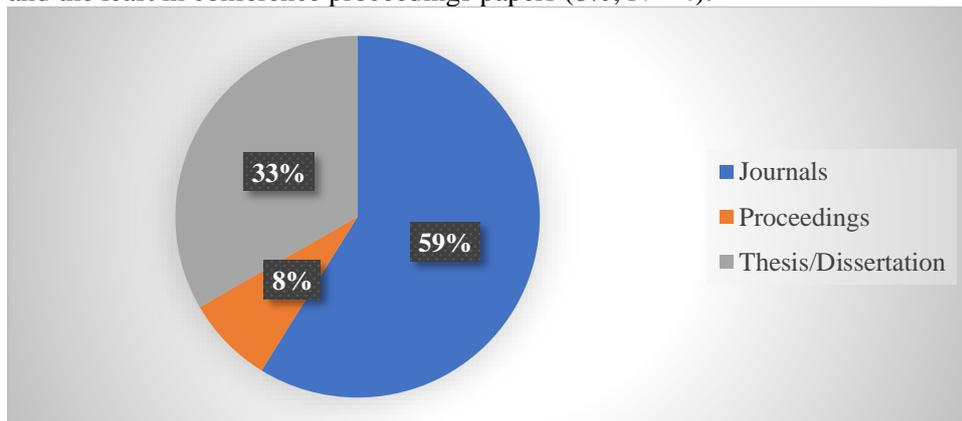


Figure 1: Number of studies from journals, proceedings and thesis/dissertations

We scrutinised journal articles, proceedings papers and thesis/dissertations published from 2010 to 2019. Majority of them have been published in 2014 (N=8), 2015 (N=8) and 2016 (N=9). From 2010 the number have been growing and in recent years the number started going down and this confirms decreased interest in the initiatives of QM in Zimbabwe. We studied 49 empirical studies and 2 theoretical studies. 1 theoretical paper was published in 2011 and the other in 2016.

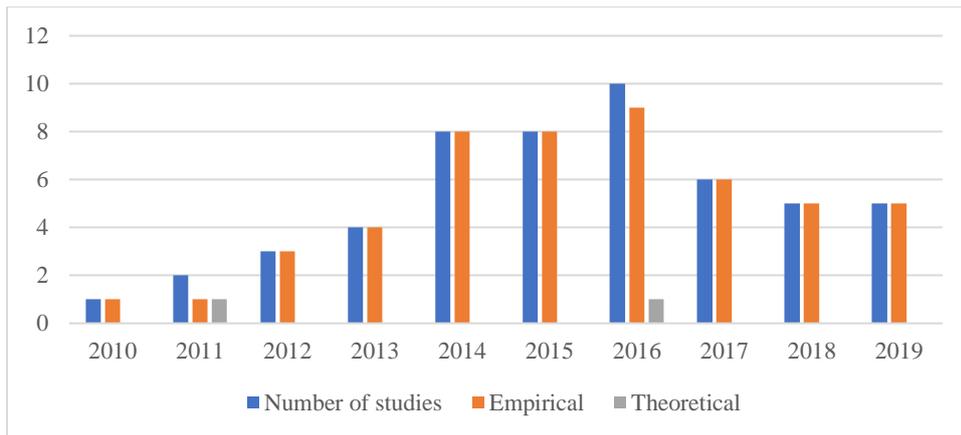
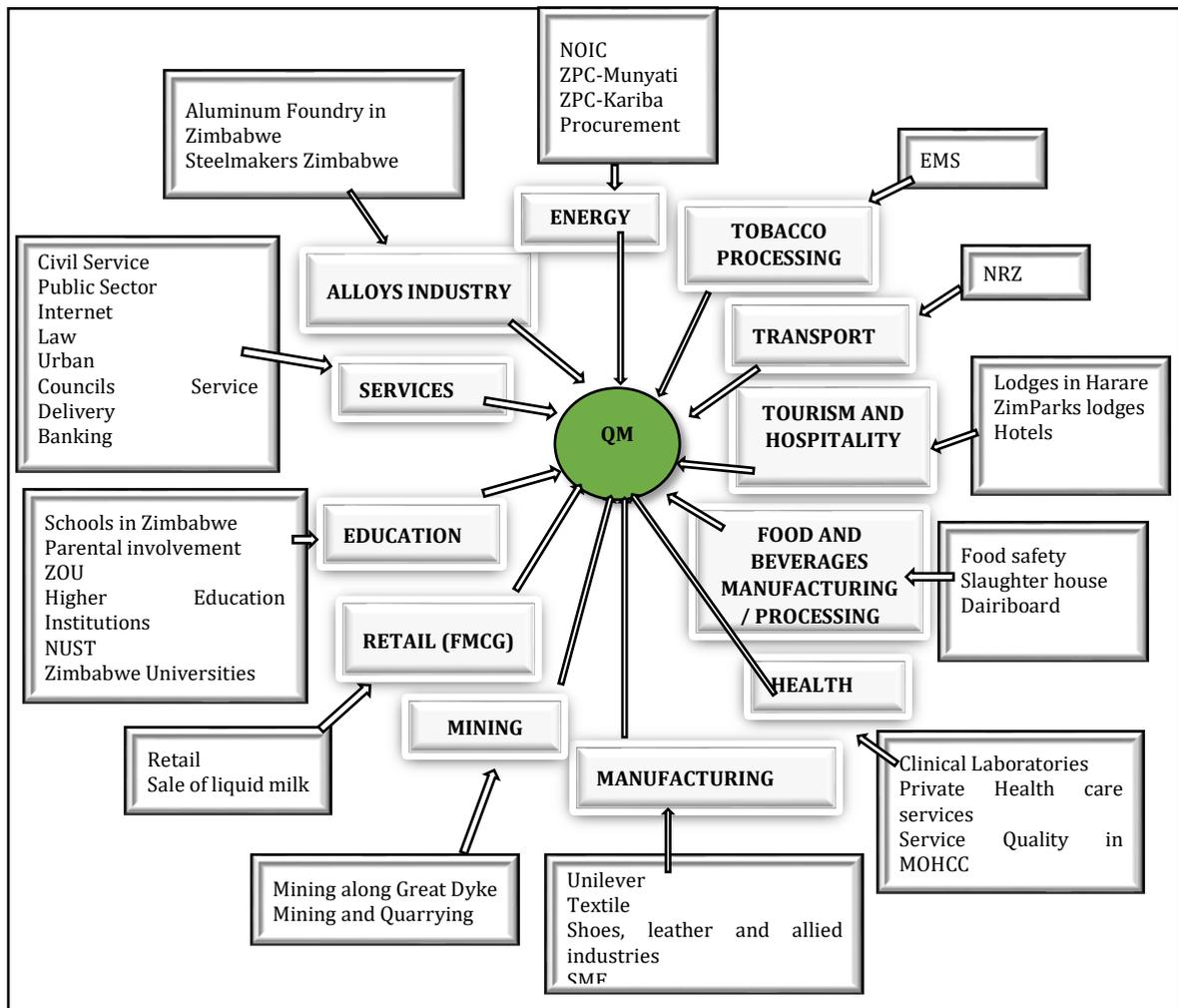


Figure 2: Number and type of studies of Quality Management per year from 2010-2019

#### 4.2. Industries in the research

We examined studies from 12 industries. We characterised the studies into industries/sectors of the economy by mapping according to the topics and sub themes of interest in the studies. Alloys industry, energy industry, tobacco processing, transport, tourism and hospitality, food and beverages, manufacturing, health, mining, retail (FMCG), education and the services industry are the key industries identified from the studies.

Majority of the studies were done in Manufacturing (N=13), followed by Education (N=10), and the least of studies were done in Transport (N=1), Retail (FMCG) (N=1) and Tobacco processing (N=1)



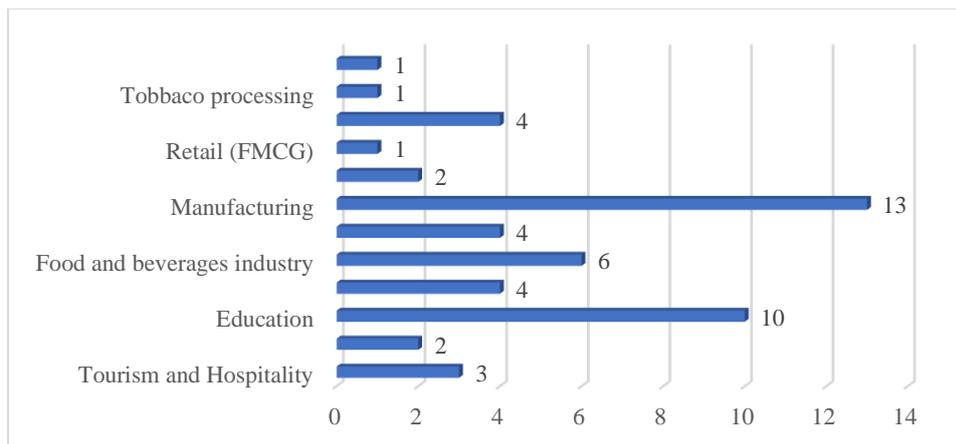


Figure 3 Industry categories in the QM studies

The fact that QM studies in Zimbabwe are done more in manufacturing, education, health, food and beverages industry, and tourism and hospitality and less on transport and retail confirm the results of [Metaxas and Koulouriotis \(2017\)](#). However, the results vary on public/civil service where there are less studies on QM and [Metaxas and Koulouriotis \(2017\)](#) results showed a high number of studies in the public sector.

#### 4.3. QM topics in the studies

The very shared topics that have been discoursed in the QM studies are; Implementation of QM systems (33%, N=36), followed by Benefits of implementing QM systems (17%, N=19), Barriers to implementation of QM systems (15%, N=16), Drivers of QM implementation (14%, N=15), QM stakeholders (13%, N=13), QM Dimensions (5%, N=5) and QM systems (5%, N=5). The fact that QM studies in Zimbabwe focus more on implementation of QM systems, benefits of QM systems, drivers of QM implementation and less on QM dimensions and QM systems confirms the results of [Tari & Dick \(2016\)](#) and [Papanthymou & Darra \(2017\)](#).

#### 4.4. Barriers to quality management implementation

The subsequent table presents the barriers that players in different industries encounter during implementation of QM systems.

Table 1: Number of QM studies per industry

Author	Industry	Barriers
<sup>1</sup> <a href="#">Maphosa, (2015)</a> , <sup>2</sup> <a href="#">Chikosha, (2016)</a>	Tourism and hospitality	<sup>1</sup> Lack of capacity and resources to sustain quality standards, lack of skills and expertise, lack of quality management systems, failure to communicate and relate with stakeholders in Tourism and Hospitality industry <sup>2</sup> Outdated interior designs, furniture and premises which do not suit the modern-day hospitality customers and guests.
<sup>1</sup> <a href="#">Suruto, (2015)</a>	Alloys industry	<sup>1</sup> Lack of customer loyalty
<sup>1</sup> <a href="#">Madhekeni, (2012)</a> , <sup>2</sup> <a href="#">Zvavahera, 2014</a>	Civil Service	<sup>1</sup> Administration politics, patron-clientelism forces, lush administrative and technical incapability. <sup>2</sup> Shortage of finance and non-submission of employees' evaluation/appraisals to the Civil Service Commission, bonus payment not based on performance ratings
<sup>1</sup> <a href="#">Ngwenya&amp; Pretorius, (2014)</a> <sup>2</sup> <a href="#">Mukwambo, (2016)</a>	Education	<sup>1</sup> Exclusion of parents. <sup>2</sup> Top down approach, quality as a political tool. <sup>3</sup> Not easy to understand, time taxing, laborious. <sup>4</sup> Policies, work overload, mobility of teachers, lack of resources. <sup>5</sup> Resistance to change, bureaucratic Organizational structure. <sup>6-7</sup> Lack of knowhow of the system, lack of awareness

<a href="#"><sup>4</sup>Mapolisa &amp; Mubika, (2018)</a> <a href="#"><sup>5</sup>Chingara (2019, <sup>7</sup>Dube &amp; Scott, (2014)</a>		
<a href="#">Njobo, (2016)</a>	Energy	Bureaucratic interventions and obsolete machinery
<a href="#"><sup>1</sup>Mambanda, et al., (2017), <sup>2</sup>Macheke, et al., (2013)</a>	Food and beverages manufacturing	<sup>1</sup> Inconsistent raw material quality, changes in customer preferences, packaging, short product shelf life and food spoilage. <sup>2</sup> Inadequate financial resources, organization size, poor infrastructure and facilities, and uncommitted top management
<a href="#"><sup>1</sup>Gore, et al., (2016), <sup>2</sup>Masanga, et al., (2017)</a>	Health	<sup>1</sup> Lack of support from top management, resistance to change, poor communication, lack of employee participation. <sup>2</sup> Costs, Health care industry is too fragmented
<a href="#"><sup>1</sup>Marambanyika &amp; Mutekwa, (2010), <sup>2</sup>Goriwondo, et al., (2012) <sup>3</sup>Gombe, (2014) <sup>4</sup>Matombo, (2014) <sup>5</sup>Ngwenya, et al., (2016) <sup>6</sup>Nyambwa, (2017) <sup>7</sup>Kudoma, 2015</a>	Manufacturing	<sup>1</sup> Employees lack skills. <sup>2</sup> Lack of top management support, lack of employee innovation, poor internal audits, deterrent maintenance schedule and lack of data analysis. <sup>3</sup> Lack of employee participation, poor raw materials, unskilled personnel, electricity outage, shortages of water, outdated machinery, low wages/salaries <sup>4</sup> Lack of leadership commitment, resistance to change culture. <sup>5</sup> Economic meltdown, employee resistance to change, inadequate financial resources, stiff competition from imported Cheap products, high costs of manufacturing, low inventory turnover, and declining sales revenues. <sup>6</sup> Stiff market competition, lack of investors, lack of motivation of employees in relation to quality behavior, lack of top management commitment to quality management and inadequate technology and resources for producing quality products. <sup>7</sup> Low level of education, lack of customer and supplier focus, unempowered employees
<a href="#"><sup>1</sup>Gwimbi &amp; Nhamo, 2016</a>	Mining	<sup>1</sup> Vagueness in the regulations regarding baseline data collection and analysis and conceptualisation of mitigation
<a href="#"><sup>1</sup>Denhere, et al., 2011</a>	Service – City Local Authority	<sup>1</sup> Inadequate and broken service delivery, poor management strategies, human resource problems, bad governance structures (organogram) and political meddling

Over laying barriers to adoption of QM systems in nearly all the noted industries are lack of capacity and resources, lack of skills and expertise, poor communication with stakeholders, poor raw materials, changing customer preferences, lack of top management commitment, costs of QM system, these barriers were also noted by [Femi \(2015\)](#) and [Yarahmadi & Magd \(2016\)](#). Table 1 also reveals the following barriers peculiar to civil service and hospitality and tourism industry.

**Civil service:**

- Administration politics
- Patron clientelism forces
- Rampant administration
- Technical inefficiency
- Non submission of Results Based Management (RBM) appraisal

**Hospitality and tourism industry**

- Outdated interior designs, furniture and premises

**4.5. Drivers for QM systems implementation**

Table 2 presents the drivers of QM systems implementation in various industries. Customer focus, employee involvement, management support, financial resources, teamwork, supplier focus, employee skills and knowledge and customer focus were noted as key drivers for successful implementation of

QM system across the industries of tourism and hospitality, alloys industry, civil service, energy, food and beverages manufacturing, health, banking, manufacturing, mining, and service which is line with other studies of [Biswakarma \(2017\)](#); [Ayandele & Akpan \(2015\)](#); [Caccamo, et al., \(2018\)](#); [Yarahmadi & Magd \(2016\)](#); [Shirbavikar \(2018\)](#); and [Mahmutay, et al., \(2015\)](#). QMS in most industries is driven by the internal and external factors which training and auditing of workers. Unique drivers were observed in food and beverages manufacturing, where it is mandatory to take up a QM system as a standard operating procedure for regulatory compliance and microbial assessment scheme. In internet provision implementation of QM system is driven by the need to provide reliable service at best prices responding to price sensitiveness of customers.

Table 2: Drivers of QM systems implementation

Author	Industry	Drivers
<sup>1</sup> <a href="#">Madanhire, et al., (2013)</a> ; <sup>2</sup> <a href="#">Suruto (2015)</a> ;	Alloys industry	<sup>1</sup> Proximity to customers and suppliers, the presence of a extremely competitive market, a wide product range, size of company, the presence of high manufacturing technology and a short degree of vertical organisation <sup>2</sup> Management and employee participation and commitment, customer focus
<sup>1</sup> <a href="#">Mavaza, et al., (2017)</a>	Banking	<sup>1</sup> Top management support and their full commitment, better understanding of TQM among staff, employee empowerment
<sup>1</sup> <a href="#">Chingara (2019)</a> , <a href="#">Nyuke &amp; Gasva (2015)</a> <sup>2</sup> <a href="#">Ngwenya &amp; Pretorius (2014)</a>	Education	<sup>1</sup> Understanding leadership, use of agency and structure. Customer focus, staff involvement, objective information and data analysis, mutual relationship with stakeholders. <sup>2</sup> Continuous improvement
<sup>1</sup> <a href="#">Masanganise et al. (2013)</a> , <sup>2</sup> <a href="#">Mambanda, et al. (2017)</a>	Food and beverages manufacturing	<sup>1</sup> Assessment scheme of microbial, compliance to regulations, standard operating procedures (SOP), external and internal auditing, workers training. <sup>2</sup> Customer focus, management and leadership commitment, strategic quality planning, supplier management, training employees, continuous improvement (CI), statistical quality control
<sup>1</sup> <a href="#">Gore, et al. (2016)</a> , <sup>2</sup> <a href="#">Marufu, et al. (2014)</a>	Health	<sup>1</sup> Management commitment, teamwork and employee participation, process management, customer focus, resources management, behavior and culture of organization, continuous improvement (CI), and training of employees. <sup>2</sup> Customer complaints increase as a result of delayed turnaround times, service delivery unreliable and laboratory results errors.
<sup>1</sup> <a href="#">Virima, et al. (2019)</a>	Internet service	<sup>1</sup> Reliability, responsiveness and prices-sensitive offerings are key to satisfying customers
<sup>1</sup> <a href="#">Chikwengo (2014)</a>	Legal services	<sup>1</sup> Continuous legal training of lawyers, education and training of Senior and Managing Partners and all lawyers on TQM
<sup>1</sup> <a href="#">Ngwenya, et al. (2016)</a>	Manufacturing	<sup>1</sup> Management support, clear communication, shop floor employees support
<sup>1</sup> <a href="#">Goriwondo (2015)</a>	Retail (FMCG)	<sup>1</sup> Ubuntu, Leadership Purpose - Vision and Mission, People Involvement, Culture, Values
<sup>1</sup> <a href="#">Chipoyera (2013)</a>	Tobacco processing	<sup>1</sup> Top management commitment and clear environmental policy
<sup>1</sup> <a href="#">Maganga (2018)</a>	Transport	<sup>1</sup> Knowledge sharing, a commitment to be excellent by everyone and focus on leadership, cross-functional teams, accurate diagnosis of forces of change and implementation of apposite change principles, adoption business process reengineering

#### 4.6. Benefits of QM systems implementation

Table 3 summarises and shows the benefits of implementing of QM systems. The benefits of adopting QM systems are relatively similar in all the industries. Many benefits have been noted in the manufacturing industry which are;

- Reduction of production waste, costs, process time, product defects, returns and reworks.

- Improved sales, market share and partner relationship. Improvements in total quality, job scope/descriptions, facilitation of meetings, department benchmarking.
- Increase of profits, revenue, sales, products quality.
- Improving environmental performance, reduction in waste, water consumption, energy consumption.
- Increases - capacity utilization and competitiveness, employee pride and motivation, product development, equipment effectiveness, organizational communication, provision of appropriate tools to employees, revenue per employee and employee retention.
- Improved operational performance. Improving organizational performance, product quality, customer satisfaction, efficiency

The results confirm to the studies of [Biswakarma \(2017\)](#); [Mizanbekova, et al., \(2017\)](#); [Irechukwu \(2010\)](#); [Metaxas & Koulouriotis \(2017\)](#); [Papanthymou & Darra,\(2017\)](#).

Table 3: Benefits of QM systems implementation

Author	Industry	Benefits
<sup>1</sup> <a href="#">Madanhire, et al., (2013)</a> , <sup>2</sup> <a href="#">Suruto (2015)</a>	Alloys industry	<sup>1</sup> Reduce throughput times and production costs, non-capital intensive. <sup>2</sup> Improved Organizational performance, increases workforce's morale and reduce costs such on reworks and returns
<sup>1</sup> <a href="#">Mavaza, et al. 2017</a>	Banking	More satisfied and loyal customers
<sup>1</sup> <a href="#">Chingara, (2019)</a> ; <sup>2</sup> <a href="#">Mapolisa &amp; Mubika (2018)</a> , <sup>2</sup> <a href="#">Tapera &amp; Kuipa (2016)</a> , <sup>3</sup> <a href="#">Mukwambo (2016)</a> ; <sup>4</sup> <a href="#">Nyenya &amp; Gabi (2016)</a>	Education	<sup>1</sup> Improve academic quality in their schools. Effective research supervision. <sup>2</sup> Good student grades, achievement of learning outcomes, demonstration of the requisite knowledge, skills and expertise upon graduation and joining industry. <sup>3</sup> Improved teaching and learning, research and managerial practice, institution receiving. <sup>4</sup> Customer satisfaction improved, University ranking improved, Academics research output has increased
<sup>1</sup> <a href="#">Dube (2018)</a> ; <sup>2</sup> <a href="#">Njobo (2016)</a> ; <sup>3</sup> <a href="#">Zhanda (2016)</a> ; <sup>4</sup> <a href="#">Munyimi (2019)</a>	Energy	<sup>1</sup> Enhance performance of the company in terms of profitability, market share and company image, result in good employer-employee relations through employee engagement, business growth, improved process documentation, consistency of processes, increased productivity, cost reduction, increased commitment to quality and improved service delivery. <sup>2</sup> Improve employee performance and customer satisfaction. <sup>3</sup> Improved service delivery, customer satisfaction, continuous improvement. <sup>4</sup> Reduce procurement costs and improve service delivery.
<sup>1</sup> <a href="#">Mambanda, et al. (2017)</a> ;	Food and beverages manufacturing	<sup>1</sup> Improved - operational and market performance, product quality and safety, employee skills, company image, product sales, market share, and entrée to new markets.
<sup>1</sup> <a href="#">Sembajwe, et al., (2018)</a>	Health	<sup>1</sup> Improved turnaround time for results, data quality improved, improved laboratory information management workflow and results reporting, high user satisfaction
<sup>1</sup> <a href="#">Duve (2011)</a>	Education	<sup>1</sup> A bias for action, near to the customer, autonomy and entrepreneurship, productivity through people, stick to the knitting, hands on value driven, simultaneous, loose tight principle, simple form lean staff, leadership
<sup>1</sup> <a href="#">Madanhire &amp; Mbohwa (2014)</a> ; <sup>2</sup> <a href="#">Ngwenya, et al., (2016)</a> ; <sup>3</sup> <a href="#">Dowa (2019)</a> ; <sup>3</sup> <a href="#">Marambanvika &amp;</a>	Manufacturing	<sup>1</sup> Reduction of production waste, costs, process time, product defects, returns and reworks. <sup>2</sup> Improved sales, market share and partner relationship. Improvements in total quality, job scope/descriptions, facilitation of meetings, department benchmarking. <sup>3</sup> Increase of profits, revenue, sales, products quality.

<a href="#">Mutekwa (2010);</a> <a href="#"><sup>4</sup>Chikuku, et al., (2012);</a> <a href="#"><sup>5</sup>Maware &amp; Adetunji (2019);</a> <a href="#"><sup>6</sup>Matombo (2014);</a>		<sup>4</sup> Improving environmental performance, reduction in waste, water consumption, energy consumption. <sup>5</sup> Increases - competitiveness in capacity utilization, product development, overall equipment effectiveness, employee Motivation and pride, provision of suitable tools to employees, organizational communication, employee retention, revenue per employee. <sup>6</sup> Improved operational performance. Improving organizational performance, product quality, customer satisfaction, efficiency
<a href="#"><sup>1</sup>Mabika 2018</a>	Mining	<sup>2</sup> Designed the workplace, trained and developed employees, and empowered and equipped employees
<a href="#"><sup>1</sup>Goriwondo (2015);</a> <a href="#"><sup>2</sup>Chivandi &amp; Maziriri (2017)</a>	Retail (FMCG)	<sup>1</sup> Knowledge and Skill, Sub-cultures Motivation, Buy-in, Equipment and Support, infrastructure, Innovation, Effective, Value Addition, Technology, Choice of, WCM, principle(s), Effective Communication, Cultural Adaptation, Training, Feedback. <sup>2</sup> Meeting customer's expectations, improving work operations efficiency and helpful as a marketing tool
<a href="#"><sup>1</sup>Chipoyera, 2013</a>	Tobacco processing	<sup>1</sup> Reduction of waste

#### 4.7 QM systems that have been implemented

Table 4 summarises and presents the QM systems that have been implemented in different industries. Quality management systems such as TQM, SPC, ISO 9001:2008, ISO 14001, ISO 22001, Lean and Six Sigma ([Metaxas & Koulouriotis, 2017](#); [Papanthymou & Darra, 2017](#)) have been implemented in different industries. This study shows other QM systems/models that have been implemented in from 2010 to 2019 in different industries; Results Based Management in the civil service, Stepwise Laboratory Improvement Process towards Accreditation (SLIPTA), STOF model (Service domain, Technology domain, Organization domain and Finance domain), LIMS (Laboratory Management Information Systems) in the health sector.

According to the results in Table 7; TQM, ISO 9001 and benchmark are the most used QM systems they are applicable in all industries and the results are in line with [Metaxas & Koulouriotis \(2017\)](#). The results also showed industry specific QM systems like HACCP for food and beverages manufacturing industry and Sakai Education Management Sytems for higher education management. The study examined published research from 2010 to 2019 to determine the barriers to implementation QM, the drivers of QM implementation, the benefits of QM implementation and the QM systems predominantly in use across different industries in Zimbabwe. It is of significance to note that 59% of the studies are from journal articles and many studies were done in manufacturing industry making headway to adopt QM systems and realise benefit of such.

Most of the studies were done in 2013 to 2016 which might be a signal of QM systems implementation directly related to business environment, from 2016 to 2019 the studies declined as the country's economy was also going in the doldrums ([World Bank, 2020](#)). The studies showed that the organizations in different industries were operating competitively in turbulent business environment ([Madanhire & Mbohwa, 2014](#); [Macheka, et al., 2013](#)). There are QM systems from manufacturing industry such as TQM, Lean, Six Sigma and others Health sector such as SLIPTA and food and beverages such as HACCP which are not applicable across industries ([Papanthymou & Darra, 2017](#)).

The most common QM systems that have been implemented in Zimbabwe industries are TQM, ISO 9001, ISO 14001 and Benchmarking. Main reasons for adoption of QM system are the benefits that an organization gain such as reduction of production waste, costs, process time, product defects, returns and reworks, increase of profits, revenue, sales, products quality and increases competitiveness. It was distinguished that customer focus, employee involvement, management support, financial resources, teamwork, supplier focus, employee skills and knowledge and customer focus are key drivers for successful implementation of QM system across the industries. Lack of capacity and resources, lack of

skills and expertise, poor communication with stakeholders, poor raw materials, changing customer preferences, lack of top management commitment, costs of QM system were noted as key barriers to implementation of QM systems.

Table 4: QM systems implemented

Author	Industry	QM Model
<sup>1</sup> <a href="#">Chikosha (2016)</a> , <sup>2</sup> <a href="#">Maphosa (2015)</a>	Tourism and hospitality industry	<sup>1</sup> TQM, Continuous improvement. <sup>2</sup> ZTA Quality standards, Quality circles, Six Sigma
<sup>1</sup> <a href="#">Madanhire, et al. (2013)</a> ; <sup>2</sup> <a href="#">Suruto (2015)</a>	Alloys industry	<sup>1</sup> JIT. <sup>2</sup> ISO 9001:2008
<sup>1</sup> <a href="#">Mavaza, et al. 2017</a>	Banking	<sup>1</sup> TQM
<sup>1</sup> <a href="#">Zvavahera (2014)</a> ; <sup>2</sup> <a href="#">Madhekeni (2012)</a>	Civil Service	<sup>1</sup> RBM (Results Based Management Model). <sup>2</sup> RBM (Results Based Management Model),
<sup>1</sup> <a href="#">Chingara (2019)</a> ; <sup>2</sup> <a href="#">Ngwenya &amp; Pretorius (2014)</a>	Education	<sup>1</sup> TQM. <sup>2</sup> TQM, Benchmark
<sup>1</sup> <a href="#">Dube (2018)</a> ; <sup>2</sup> <a href="#">Munyimi (2019)</a>	Energy	<sup>1</sup> ISO 9001:2008. <sup>2</sup> Value engineering, variety reduction, standardisation and specifications.
<sup>1</sup> <a href="#">Chivandi &amp; Maziriri (2017)</a> ; <sup>2</sup> <a href="#">Mambanda, et al. (2017)</a> ; <sup>3</sup> <a href="#">Masengu &amp; Mangwenda (2017)</a> ; <sup>4</sup> <a href="#">Goriwondo (2015)</a>	Retail (FMCG)	<sup>1</sup> ISO 2200. <sup>2</sup> TQM. ISO 9001. <sup>3</sup> HACCP. <sup>4</sup> World Class Manufacturing (WCM) principle(s), WILGOR Framework of Manufacturing Excellence
<sup>1</sup> <a href="#">Masanganise, et al., 2013</a>	Food and beverages industry	<sup>1</sup> HACCP, ISO 9001
<sup>1</sup> <a href="#">Gore, et al. (2016)</a> . <sup>2</sup> <a href="#">Marufu, et al. (2014)</a> ; <sup>3</sup> <a href="#">Masanga, et al. (2017)</a> ; <sup>4</sup> <a href="#">Sembajwe, et al. (2018)</a>	Health	<sup>1</sup> TQM. SLIPTA (Stepwise Laboratory Improvement Process towards Accreditation). <sup>2</sup> STOF model (Service domain, Technology domain, Organization domain and Finance domain). <sup>3</sup> TQM <sup>4</sup> Laboratory Information Management System (LIMS).
<sup>1</sup> <a href="#">Dube &amp; Scott (2014)</a>	Higher Education	<sup>1</sup> Sakai Learning Management System
<sup>1</sup> <a href="#">Chikwengo (2014)</a>	Legal services	<sup>1</sup> TQM
<sup>1</sup> <a href="#">Madanhire &amp; Mbohwa (2014)</a> ; <sup>2</sup> <a href="#">Ngwenya, et al., (2016)</a> ; <sup>3</sup> <a href="#">Goriwondo, et al., (2012)</a> ; <sup>4</sup> <a href="#">Dowa (2019)</a> ; <sup>5</sup> <a href="#">Marambanyika &amp; Mutekwa (2010)</a> ; <sup>6</sup> <a href="#">Chikuku, et al., (2012)</a> ; <sup>7</sup> <a href="#">Maware &amp; Adetunji (2019)</a> ; <sup>8</sup> <a href="#">Matombo (2014)</a> ; <sup>9</sup> <a href="#">Nyambwa (2017)</a> ; <sup>10</sup> <a href="#">Kudoma (2015)</a> ;	Manufacturing;	<sup>1</sup> TQM, SPC. <sup>2</sup> TQM. ISO 9001:2008. <sup>3</sup> TQM. ISO 14001 EMS. <sup>4-6</sup> ISO 9001:2008. <sup>7</sup> Lean manufacturing. <sup>8</sup> Lean Six Sigma. <sup>9</sup> ISO 9001. <sup>10</sup> TQM.
<sup>1</sup> <a href="#">Gwimbi &amp; Nhamo (2016)</a> . <sup>2</sup> <a href="#">Mabika (2018)</a> .	Mining	<sup>1</sup> Benchmarking. <sup>2</sup> Deming's plan-do-study-act cycle theory
<sup>1</sup> <a href="#">Chipoyera 2013</a>	Tobacco processing	<sup>2</sup> EMS (Environmental Management Systems)
<sup>1</sup> <a href="#">Maganga (2018)</a>	Transport	<sup>1</sup> BEM (Business Excellence Model)

The QM stakeholders, quality measurement and quality dimensions have not been discussed and the studies methods are more empirical (98%) than theoretical. The evidence on published QM studies is not encouraging as we noticed a gradual decrease in studies in recent years and very few conferences on QM.

## 5. Conclusion

The study is a substantial input for researchers captivated in QM, it provides evidence of QM in different industries and sub sectors in Zimbabwe. The study propositions valuable evidence to organizations that may want to adopt QM systems regarding the drivers that effect the successful implementation of QM, barriers that hinder QM implementation, the benefits of adopting QM and the probable QM systems that can be implemented. Submitted evidence regarding QM in Zimbabwe will help prepare other organizations that want to implement QM systems for sustainable competitiveness. The results can guide government agents that are responsible for quality management in making informed decisions towards QM systems implementation since very few organizations are officially quality certified.

The identified paybacks of QM can inspire organizations to consider QM implementation for their competitive continued existence in an aggressive environment. Organizations that benchmark with others and possessing elementary understanding of QM can strategy well for quality enhancement. Unique barriers of QM adoption specific to industries were revealed, drivers for successful QM implementation, benefits of QM and types QM systems. The literature nexus consolidated literature in a systematic way in the area of QM in Zimbabwe. There is abundance of themes that can be reviewed which include quality dimensions, QM stakeholders and quality measurement across different industries.

## Limitations and study forward

The limitation of this study was to survey limited studies retrieved through Bindura University online library and open access journal articles, proceedings papers and dissertations/thesis available on institutional repository. There is need for more literature on QM systems from different industries fine-tuned to the country business environment. Drivers for successful implementation of QM are many accordingly further researches on weighting the drivers is important. Furthermore, a comparison between different industries QM drivers, barriers, benefits and QM systems would be thought-provoking.

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