QUALITY PAPER

Investigation of sustainability failures of ISO 9001 quality management system – a case of Botswana

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Abstract

Purpose – This study aims to investigate causes of sustainability failures of ISO 9001 Quality Management Systems in Botswana.

Design/methodology/approach – The research employed qualitative and quantitative methods, including literature review and secondary data analysis to understand trends relating to Botswana, and a survey to identify gaps leading to certification sustainability failures, focusing on; motives for certification, causes of decertification and issues in the certification process.

Findings – ISO 9001 adoption in Botswana is slow, with low acceptance rate in the public sector at 13% compared to the private sector at 87%. Termination rates have been high at 55% over two decades. Manufacturing dominates certification with 45% of total certification. While micro and small companies struggle to sustain certification, often failing within 2 years, medium-sized companies demonstrate better sustainability, lasting beyond 6 years. Product/service quality and process improvement drive certification while decertification is influenced by management factors, financial constraints, and process management. The study recommends a model for effective integration of ISO 9001.

Originality/value – Integrated systems are crucial for consistent process performance and continual improvement in all sectors for sustainable organizational success. Although the ISO 9001 Quality Management System has shown positive impacts globally, the impact of its adoption in Botswana remains questionable with high failure rates post implementation. There appears to exist a significant gap in development, implementation, and maintenance of the QMS. The public domain has no evidence of any past investigation on causes of sustainability failures of ISO 9001 post certification. The current study sought to close that knowledge gap.

Keywords Continuous improvement, Quality management system, ISO 9001, Certification motivations, De-certification, Certification process

Paper type Research paper

1. Introduction

1.1 Background to the study

ISO 9001 standards have become essential benchmarks for quality management systems, reflecting the increasing recognition of certification as integral to global management practices (Ahmed, 2017; Lourenço *et al.*, 2012). The adoption of ISO 9001:2015 as a quality management framework has gained prominence in developed countries, and a similar tendency emerging in developing countries (Ismyrlis and Moschidis, 2015) making it an

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important tool to overlook. However, despite its widespread acceptance, a notable research gap exists concerning the long-term sustainability of ISO 9001 certification. This gap pertains to the need for comprehensive studies on its enduring effectiveness, particularly in evolving business environments. Critical questions regarding its long-term impact, industry-specific variations, its applications in the public sector, and the evolving barriers to sustained success remain important knowledge gaps. Addressing this gap is crucial to assess the ongoing relevance and adaptability of ISO 9001:2015.

1.1.1 ISO 9001 QMS, the context of Botswana. In the context of this study, Botswana is regarded as a middle-income country, having been one of the fastest growing economies in Africa during the past decade. A critical factor in its development is largely attributable to the country's natural resource wealth, with diamond extraction being the country's primary development engine while tourism, subsistence farming, and cattle ranching being additional significant industries (Honde, 2019). Botswana's economic success has been hindered by uncertainty due to its excessive reliance on diamond exports (BTI Transformation Index, 2022). The economic base remains limited despite diversification attempts, and growth has not been adequately inclusive (Honde, 2019). The primary obstacle for emerging sustainability initiatives is the lack of capacity (BTI Transformation Index, 2022).

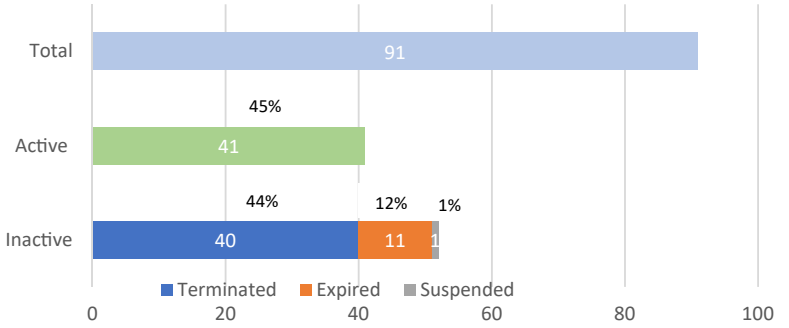
Over and above the economic sustainability challenges, service levels in Botswana more especially in the public sector has long been perceived as inefficient, underperforming, and lacking in job accountability and ownership (Dzimbiri, 2008). Numerous failures have been attributed to poor service delivery, bureaucracy, and employee dissatisfaction (Nkwe, 2012), ineffective records management practices in many government institutions (Mosweu, 2011), a lack of work ethic (Botlhale, 2019), declining accountability, and inadequate project evaluation (Kaboyakgosi and Marata, 2013). The authors emphasis that these issues are compounded by a lack of leadership, supervision, and support for subordinates, inconsistent interpretations of policies across levels, unclear goals and objectives, and management decisions that are not based on performance evaluation procedures (Botlhale, 2019). Even though numerous reforms have been continuously deployed to improve efficiency and service delivery, the anticipated impact through these reforms have not been realized thus far (World Bank Group, 2015).

A recent effort to promote sustainable industries and trade in Botswana is the Botswana Exporter Development Programme (BEDP). Central to Botswana's Vision 2036 and National Development Plan (NDP) is the emphasis of export-led growth. The BEDP focuses on implementing long-term interventions outlined in the National Export Strategy and cultivating a capacity for exporting within the country, with the goal of enabling Botswana's producers and exporters to compete effectively in regional and global markets. Implementing the ISO 9001 quality management system was one of the deliberate efforts aimed at enabling local businesses to develop the necessary capabilities and capacity for exporting. This development led to increased recognition of the ISO 9001 QMS within the industry, and there is an anticipated rise in efforts to adopt this system. Consequently, gaining a comprehensive understanding of the ISO 9001 QMS and its long-term sustainability has become essential in Botswana.

Despite the relative growing acceptance of ISO 9001 QMS in Botswana, there appears to be sustainability concerns. Similar to other authors' descriptions of comparable programmes, ISO 9001 sustainability appears to have a low success rate.

1.1.1.1 Sustainability of ISO 9001 implementation in Botswana. Figure 1. provides further analysis about the sustainability of ISO 9001 in Botswana. It shows the total Certifications between 2003 and 2021, the active certifications, the deactivated certifications categorized into terminated, expired, and suspended.

There is a strong tendency toward discontinuing the usage of the ISO 9001 QMS in Botswana. The number of terminated certifications outweighs the number of active certifications by a large margin, resulting in a significant drawback of advancing ISO 9001 Certification in Botswana.



Source(s): Own analysis based on data from BOBS certification database as of 2021

Figure 1. Botswana ISO 9001 active vs deactivated certifications between 2003 and 2021

Although the implementation of the ISO 9001 QMS has proven effective globally, the impact of its adoption in Botswana remains questionable with high failure rates post implementation. Despite potential growing interest in ISO 9001 QMS in Botswana, there proves to be obstacles arising during attempts to put the QMS into practice. Similar to the poor success rates of comparable initiatives cited by other researchers, ISO 9001's long-term viability appears to be low. Implementation and sustainability of the QMS seems to be hampered by difficulties. There is a noticeable gap in the development, implementation, and maintenance of the QMS in the country.

This study aims to investigate the causes of sustainability failures of ISO 9001 QMS in Botswana. The objectives are (1) analyze ISO 9001 certification trends in Botswana, (2) identify ISO 9001 implementation gaps that impede the long-term sustainability of the quality management system. This includes analyzing the impact of organizational characteristics such as industry sector, size, and the utilization of consultancy services on sustainability failures (2.1), assessing the influence of perceived motivations and benefits derived from ISO 9001 QMS on sustainability failures (2.2), investigating the potential causes behind the failure to maintain ISO 9001 certification (2.3), and examining the potential effects of the certification process itself on sustainability failures (2.4).

2. Literature review

2.1 Continuous improvement in modern organizations

Continuous Improvement (CI) has evolved in response to changing industry trends, shifting from traditional approaches primarily focused on waste reduction and product quality in manufacturing (Bhuiyan and Baghel, 2005) to systematic methodologies emphasizing consistent process improvement and the importance of a systems approach (Garcia-Sabater *et al.*, 2012). It involves aligning business processes strategically to achieve objectives (Kazmi and Naarananoja, 2014; Matorera, 2018; Sousa and Sousa, 2007). Therefore, managing processes as an integrated system with a focus on cultural transformation is essential, as fragmented process management undermines consistent development and cultural change (Bateman and Rich, 2003). Quality management systems (QMS), such as ISO 9001, play a critical role in an organization's growth and sustainability (Hellman and Liu, 2013). ISO 9001 is recognized for its versatility and adaptability across various industries and organizational sizes (Ahmed, 2017).

2.2 ISO 9001 quality management system

ISO 9001 is based on the PDCA (Plan-Develop-Check-Act) model, employing a process approach model to maximize management process efficiency (Kazmi and Naarananoja, 2014).

It requires planned, systematic, monitored activities affecting quality (Michalska-Ćwiek, 2009). ISO 9001's implementation introduces process management, the foundation of effective management (Michalska-Ćwiek, 2009). It is widely recognized for positively impacting an organization's development, sustainability, and management process maturity (Ahmed, 2017).

2.3 Certification motivations

The adoption of ISO 9001 can be attributed to various factors, but it's widely acknowledged that ISO 9001 Quality Management System (QMS) doesn't inherently guarantee effectiveness and value for an organization. The decision to adopt ISO 9001 is influenced by several factors, with considerations related to quality management development, motivation, implementation strategy, and stakeholder participation being pivotal (Lourenço *et al.*, 2012). These factors are critical in determining the success and sustainability of ISO 9001 (Formento *et al.*, 2013; Gremyr *et al.*, 2021; Lourenço *et al.*, 2012). The motives for implementation and the implementation processes also significantly influence ISO 9001's overall effectiveness (Formento *et al.*, 2013). ISO 9001 adoption is voluntary and hinges on an organization's strategy, motivations, and objectives (Lourenço *et al.*, 2012).

ISO 9001 adoption is driven by diverse motivations. The principal driver is the proactive enhancement of management processes and quality practices, aimed at efficiently achieving an organization's objectives and goals (Behnam and Juanzon, 2018; Matorera, 2018). Motivations for ISO 9001 adoption can be categorized into external and internal factors. External factors, driven by business considerations, aim to gain a competitive edge and increase market share (Ahmed, 2017). Internal factors, influenced by operational considerations, seek to optimize management processes and quality practices (Behnam and Juanzon, 2018; Matorera, 2018). Organizations emphasizing genuine quality improvements tend to benefit more from Quality Management Systems (Gremyr *et al.*, 2021; Lahidji and Tucker, 2016).

2.4 Certification failures/challenges

ISO 9001 implementation has faced challenges, leading to high post-implementation failure rates (Chountalas *et al.*, 2020). In the progression of ISO 9001 certification, recertification, and decertification, scholarly research identifies three crucial categories guiding organizational decisions: financial considerations, internal dynamics, and external factors (Clougherty and Grajek, 2023; Nyakudya and Nyakudya, 2022; Simon and Kafel, 2018).

2.4.1 Financial motives. ISO 9001 decertification is often motivated by financial considerations. Financial deliberations take a prominent role, as organizations assess the costs of recertification against perceived benefits, often choosing to withdraw when financial constraints arise, notably smaller companies (Ferreira and Cândido, 2021; Clougherty and Grajek, 2023). High recertification costs pose a significant barrier, involving expenses for documentation, internal audits, consultants, auditors, surveillance audits, and ongoing system maintenance (Clougherty and Grajek, 2023; Ferreira and Cândido, 2021). For organizations facing financial constraints, the balance of cost and benefits becomes critical, influencing the decision to abandon ISO 9001 certification (Simon and Kafel, 2018; Ferreira and Cândido, 2021). In particular, the costs associated with recertification are viewed as less rewarding in financial terms, prompting organizations to question the value of sustaining certification (Clougherty and Grajek, 2023).

2.4.2 Internal motives. Internal motivations also play a pivotal role in the decision to decertify. Internally, the decision-making process involves navigating organizational dynamics, where realizing internal benefits, such as improved product quality and production efficiency, hinges on effective implementation, with top management involvement as a critical factor (Simon and Kafel, 2018). Internally, high certification costs

and diminishing benefits can drive organizations to abandon ISO 9001, particularly when facing financial constraints (Ferreira and Cândido, 2021). Over time, diminishing internal efficiency gains contribute to decertification, as do changes in management system preferences or the adoption of sector-specific standards (Simon and Kafel, 2018). Organizations may withdraw from ISO 9001 when internal benefits, such as improved product quality, cost control, and production efficiency, are not fully realized (Clougherty and Grajek, 2023). Challenges in implementing and internalizing these benefits, including issues with organizational culture, division of responsibilities, and documentation, contribute to the decision to abandon certification (Zimon and Dellana, 2020). The lack of substantial internal benefits becomes a critical factor, leading rational-minded managers to consider decertification, especially when faced with significant recertification costs (Clougherty and Grajek, 2023).

2.4.3 External motives. Externally, market-driven forces, including customer demand, competitive advantage erosion, and the imperative for organizational innovation, further shape organizations' strategic choices in ISO 9001 certification (Ferreira and Cândido, 2021; Clougherty and Grajek, 2023). Customer demand, competitive advantage erosion, and organizational innovation are key external drivers (Ferreira and Cândido, 2021; Clougherty and Grajek, 2023). The certification's role as a credible signal of process quality, differentiating the organization from uncertified competitors, impacts its external benefits. However, the perceived failure of these external benefits to materialize, such as improvements in stakeholder image and customer satisfaction, contributes to the decision to abandon ISO 9001 (Clougherty and Grajek, 2023). The external factors influencing decertification underscore the need for organizations to strategically align with market demands and maintain competitive advantages.

Therefore, decision hinges on the balance of cost, performance, and motivation, with top management involvement as a critical factor (Clougherty and Grajek, 2023). Organizations may choose decertification when benefits can be sustained without recertification, especially with high certification costs (Clougherty and Grajek, 2023).

In summary, ISO 9001 decertification is a multifaceted process influenced by factors such as cost-effectiveness, internal motivations, and encountered barriers during implementation and maintenance (Clougherty and Grajek, 2023). The decision involves a delicate balance of cost, economic performance, and competitive advantages, both internally and externally (Clougherty and Grajek, 2023). High certification costs with limited benefits, external factors like increased competition, and the availability of better-suited standards can trigger decertification (Ferreira and Cândido, 2021). Organizations with strong internal benefits are less likely to decertify, while a lack of top management involvement or preparation may lead to implementation barriers and eventual decertification (Clougherty and Grajek, 2023). Even companies internalizing ISO 9001 may choose to decertify if expected benefits are not realized, especially when sustaining benefits without recertification is feasible, particularly in the face of high certification costs (Clougherty and Grajek, 2023). These factors, both internal and external, interact in complex ways to shape organizations' decisions to maintain or abandon ISO 9001 certification. These factors are notable in the global space, but have not been thoroughly investigated in Botswana.

2.5 Certification process

In conclusion, ISO 9001 decertification is a multifaceted process influenced by factors such as cost-effectiveness, internal motivations, and encountered barriers during implementation and maintenance (Clougherty and Grajek, 2023). These factors, both internal and external, interact in complex ways to shape organizations' decisions to maintain or abandon ISO 9001 certification. These factors are notable in the global space but have not been thoroughly investigated in Botswana.

3. Methodology

3.1 Research design

This study adopted a mixed method research approach to investigate the trends and sustainability factors related to ISO 9001 certification in Botswana. The research design comprised an exploratory stage using secondary data analysis (SDA) and a descriptive stage using a survey. The study then provided model recommendations as guidance for how organizations might effectively integrate ISO 9001 into their management and operational processes.

3.1.1 Secondary data analysis. At the exploratory stage, a comprehensive analysis of secondary data was conducted to examine ISO 9001 certification trends in Botswana and their association with sustainability factors, as emphasized by Ahmad *et al.* (2019). This approach, informed by a thorough literature review and data from reputable sources, was instrumental in identifying the research problem and informing the development of the primary research work. The choice of secondary data analysis was guided by its ability to handle substantial sample sizes and longitudinal data, as recommended by Dunn *et al.* (2015), thereby enhancing the generalizability of the findings. Extensive evaluation of the most recent findings in all secondary sources, along with comparisons with data from previous years, was carried out. Additionally, thorough efforts were made to investigate missing data and address data discrepancies. The SAD sources include, (1) Survey results from the ISO website, providing a global perspective on ISO 9001 certification. (2) Access to the Botswana Bureau of Standards certification database through their official website, enabling insights into Botswana's certification landscape. (3) Utilization of data from Statistics Botswana publications, specifically their Quarterly Multi-Topic Survey (QMTS) for the year 2021, to investigate the relationship between Botswana's industry sector populations and ISO 9001 certification.

3.1.2 Survey. A survey was conducted to assess the influence of perceived motivations and benefits derived from ISO 9001 QMS on sustainability failures, investigate the potential causes behind the failure to maintain ISO 9001 certification and examining the potential effects of the certification process itself on sustainability failures, in regard to Botswana.

3.1.2.1 Population and sampling. The study included all 84 Botswana organizations accredited by the Botswana Bureau of Standards (BOBS) as of 2021, using a census approach. However, recognizing the potential for non-response bias, a convenience sampling technique was also employed to engage willing and accessible participants, acknowledging the limitations of census data collection (Etikan, 2016). Despite the chance of non-response bias, this combined approach aimed to yield valuable insights.

3.1.2.2 Data collection instrument. The study used a 5-point Likert-type scale questionnaire, a commonly employed method in empirical research (Joshi *et al.*, 2015), known for its reliability and validity in measuring attitudes, beliefs, and perceptions of respondents (Joshi *et al.*, 2015). The questionnaire had 7 sections covering the (1) survey's purpose, (2) organization profile, (3) certification details, (4) motivations, (5) challenges in the certification process, (6) reasons for decertification, and (7) certification process improvements. Motivations and decertification reasons were drawn from literature sources (Georgiev and Georgiev, 2015; Lourenço *et al.*, 2012; Simon and Kafel, 2018; Santos *et al.*, 2014).

3.1.2.3 Data collection. Data collection involved accessing the BOBS database, accreditation details of companies were gathered for the study's population. Contact information was sourced through Google search, and subsequent phone calls sought permission for email surveys. Organizations agreeing to participate received a Google Form questionnaire, highlighting the study's purpose, voluntary participation, and confidentiality. Each organization was expected to provide one response for organization-level feedback. To ensure data completeness, the survey incorporated mandatory fields and an automated validation process, reducing gaps. Monitoring incoming responses, prompt resolution of

discrepancies was maintained. The survey spanned three weeks, with follow-up calls at the two-week mark for non-responsive organizations. While this approach garnered substantial data, limited responses from some organizations may impact the findings' generalizability.

3.1.3 The development of the ISO 9001 implementation optimization model. The ISO 9001 Implementation Optimization Model was systematically developed to address specific challenges in maintaining ISO 9001 QMS Certification in Botswana. In the conceptualization phase, a literature review addressed global ISO 9001 implementation challenges, while empirical data from Botswana organizations facing certification issues provided practical insights. Survey results informed the model's components, emphasizing ISO 9001 principles as critical phases and key input factors—leadership, engagement, and resources—for a holistic and sustainable ISO 9001 implementation process.

4. Results and discussion

4.1 Comparative analysis- ISO 9001 certification trends in Botswana

4.1.1 Botswana ISO 9001 certification trends relative to the global perspective. Using ISO 9001 world certification as a benchmark, a comparison of Botswana with the rest of the world aims to demonstrate the extent to which ISO 9001 QMS is adopted in Botswana and to identify any notable concerns and assess how these trends impact the general application of the ISO 9001 in Botswana. Table 1 presents an analysis of the cumulative global distribution of certifications among countries.

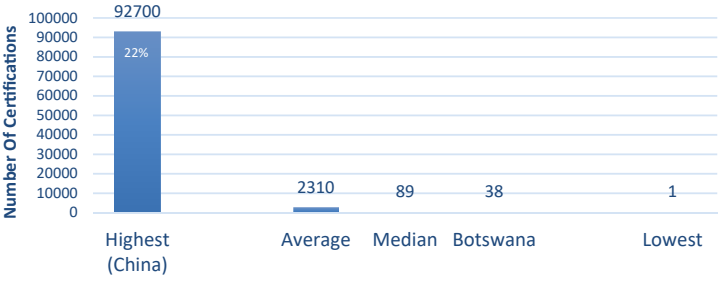
Figure 2. illustrates the comparison of Botswana in the Global certification statistics. It demonstrates the relative ranking of Botswana compared to the country with the highest number of certifications (China), as well as the median, average, and lowest number of certifications.

The findings show that Botswana is one of the low certification countries, contributing only 10% aggregated with 152 other countries. Botswana is ranked 109 out of 185 countries,

% Number of certifications	Number of countries	% of countries
>50%	4	2.2
>75%	12	9
>90%	32	26
>99%	90	75

Source(s): Own analysis based on data from ISO survey 2020, Author's own work

Table 1. Distribution of global certification (185 countries)



Source(s): Own analysis based on data from ISO survey 2020, and BOBS certification database as of 2020

Figure 2. ISO 9001 certification: Botswana vs other countries (Rest of the world)

with 38 active certifications constituting less than 0.01% of the global certification. Its number of certifications being significantly lower than the global average, it is among the lowest certifications, positioned below the median value, and in the lowest category (Figure 2). This demonstrates Botswana's low degree of ISO 9001 influence across all industries and sectors when compared to the overall total certification and when compared to high-ranking countries. It can be stated that ISO 9001 is not yet regarded in Botswana as an instrumental management approach for improving production and service standards across all industries. The ISO 9001 management system has not been adequately exploited to improve the country's service standards, and overall productivity.

4.1.2 ISO 9001 certification trends in Botswana: a comparison of the public and private sectors. 4.1.2.1 Certification trends in Botswana. Over nearly two decades, Botswana obtained 91 certifications, with 87% (79) in the private sector and 13% (12) in the public sector. Out of these, 41 are active, resulting in a 45% active rate, with 90% (37) in the private sector and 10% (4) in the public sector. The private sector began obtaining certifications in 2003 and has shown consistent growth. On the other hand, the public sector started later in 2007, with a five-year lag, and has a slower adoption of ISO 9001 certifications compared to the private sector, indicating a significant implementation disparity (Figure 3). While ISO 9001 is widely accepted, its relevance and usefulness receive greater emphasis in the private sector. This potential remains underutilized in public sector (Ćwiklicki *et al.*, 2021; To *et al.*, 2011), particularly in terms of improving efficiency, effectiveness, and organizational performance (To *et al.*, 2011). Given the constraints of delivering government services, effective management of resources and processes becomes crucial (ISO, 2014).

The imbalance between the commercial and public sectors is evident in their intrinsic motivations. The private sector is driven by competitive pressures, leading to a higher intensity in pursuing certification for market position and share. In contrast, the public sector focuses on internal considerations, aiming to improve management processes and achieve organizational objectives efficiently. The lack of competitive pressure allows the public sector

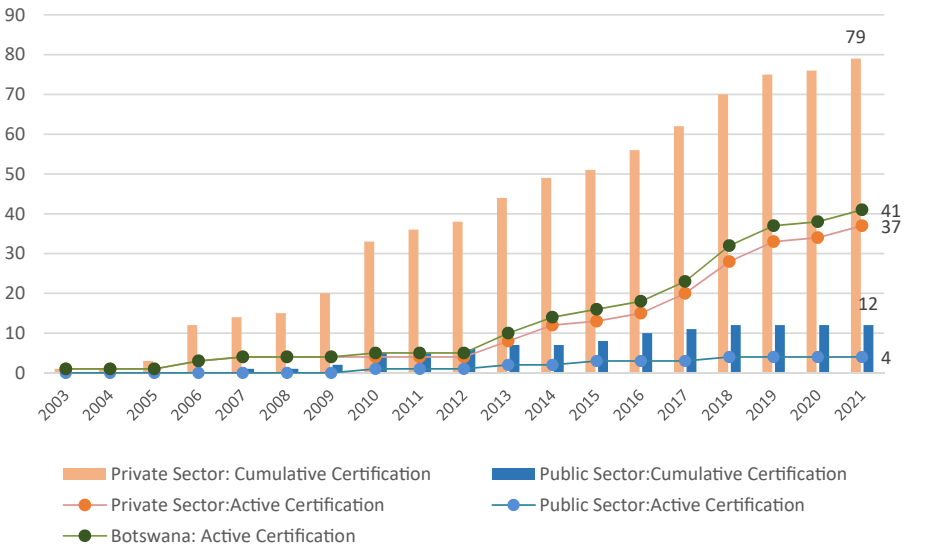


Figure 3.
Botswana's ISO 9001 annual certification trends: a comparison of the public and private sectors

Source(s): Own analysis based on data from BOBS certification database as of 2021

greater flexibility in embracing ISO 9001. This analysis suggests that ISO 9001 accreditation is predominantly driven by commercial factors rather than management motivations.

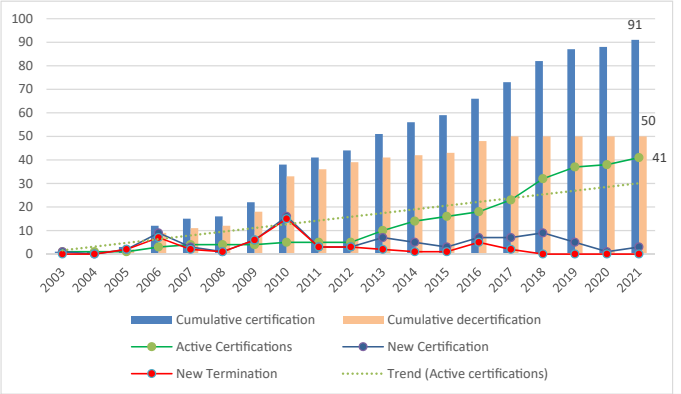
4.1.2.2 Summary of certification trends in Botswana. Figure 4. provides a summary of the rate of certification compared to the rate of certification termination in Botswana, from 2003 to 2021. This is to highlight the adverse impact of high decertification rates on the progression of certification acceptance in Botswana over the years.

In Botswana, there is a significant trend of discontinuing ISO 9001 QMS usage. In addition to the slow growth trend, the termination rate of certifications is high, with 55% by 2021 (Figure 4). This poses a major obstacle to advancing ISO 9001 certification in the country. The number of terminated certifications surpasses the active ones by a significant margin, indicating challenges in maintaining continuous improvement programs. This highlights the need to integrate QMS standards with organizational objectives and operations to sustain certification. The study reveals a gap between development, implementation, and maintenance of improvement strategies, particularly for ISO 9001 QMS.

4.1.3 ISO 9001 certification in Botswana public sector: a breakdown by the divisions of the public sector. A further study was conducted to analyze the distributions of the ISO 9001 certification among the public sector divisions using Table 2. The Public sector comprises the Local Government, Parastatal Organizations, and the Public Service.

In ISO 9001 implementation, parastatals hold the highest cumulative (92%) and active (75%) certifications among the public sector, followed by a single certification from the local government. Notably, the central government (public service), which represents the largest proportion (76%) of the public sector, has never obtained a certification.

Similar tendencies are observed between the commercial and governmental sectors. Parastatals, like their private sector counterparts, focus on generating investment and commercial opportunities for the government. In contrast, both central and local governments prioritize service quality, administrative efficiency, and organizational structure reforms. The central government does not see substantial cost savings or increased returns compared to parastatals.



		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Private Sector	New Certication Total	1	0	2	9	2	1	5	13	3	2	6	5	2	5	6	8	5	1	3
	Terminated	0	0	2	7	1	1	5	13	3	2	2	1	1	3	1	0	0	0	0
Public Sector	New Certication Total	0	0	0	0	1	0	1	3	0	1	1	0	1	2	1	1	0	0	0
	Terminated	0	0	0	0	1	0	1	2	0	1	0	0	0	2	1	0	0	0	0
Botswana	Cumulative Certification	1	1	3	12	15	16	22	38	41	44	51	56	59	66	73	82	87	88	91
	Cumulative Terminated	0	0	2	9	11	12	18	33	36	39	41	42	43	48	50	50	50	50	50
	% Termination	0%	0%	67%	75%	73%	75%	82%	87%	88%	89%	80%	75%	73%	73%	68%	61%	57%	57%	55%

Source(s): Own analysis based on data from BOBS certification database as of 2021

Figure 4. Botswana ISO 9001 cumulative certification vs cumulative termination trends

These findings indicate that ISO 9001 certifications in Botswana prioritize commercial benefits rather than internal efficiency improvement. Consequently, implementing a Quality Management System (QMS) strategy has a lower priority in the public sector.

4.2 ISO 9001 implementation challenges that hinder long term sustainability of the quality management system in Botswana- company surveys

4.2.1 Analysis of the characteristics of companies surveyed. 4.2.1.1 Survey response rate. These findings indicate that the manufacturing sector is more dedicated to the ISO 9001 Certification in Botswana with a 45% representation of the population, followed by the service sector with 36% whereas all combined government entities account for 19% (Table 3).

4.2.1.2 Surveyed companies profile. Manufacturing companies comprise most of the survey. In terms of company size, medium-sized companies make up the largest share of the

Sector	Employment (Population)	% Population	Cumulative ISO certificates	% cumulative	Active ISO certificates	% Active
Public	*173,281.00*		*12*		*4*	
Central government	130,926	76	0	0	0	0
Local government	21,299	12	1	8	1	25
Parastatals	21,056	12	11	92	3	75

Note(s): Public sector is devided into central, local and parastals, the values in the row are the total of its sub divisions

Source(s): Own analysis based on data from Statistics Botswana: Quarterly Multi-Topic Survey (QMTS) QUARTER 4, 2021 (Employment), and BOBS certification database as of 2021 (Certification)
Author's own work

Table 2.
ISO 9001 certification distribution in Botswana public sector

		Manufacturing	Service	Local government	Parastatal	Public admin	Total
Sample size		*38*	*30*	*1*	*15*	*0*	*84*
Frequency of organizations in the (*total sample*)		*45%*	*36%*	*1%*	*18%*	*0%*	*100%*
Contact rate	(*f*)	19	17	0	6	0	42
Frequency of organizations contacted for survey (*out of total sample*)	%	50	57	0	40	0	50
Cooperation rate	(*f*)	18	16	0	2	0	36
Frequency of organizations contacted that accepted the Survey (*out of contact rate*)	%	95	94	0	33	0	86
Response rate	(*f*)	9	8	0	2	0	19
Frequency of organizations sampled that yielded feedback (*out of cooperation rate*)	%	50	50	0	100	0	53

Note(s): Sample size, is the total available organizations to contact for survey, and their % contribution in the total sample size

Source(s): Author's own work

Table 3.
Survey response rates by sector

survey and notably 74% of companies acquired certification through the services of an external consultant (Table 4).

4.2.1.3 Years of certification in relation to organization size. These results suggest that micro and small companies typically fail to achieve a 3-year recertification cycle (less than 2 years category), while small and medium-sized companies are most likely to maintain certification for 2–6 years. Notably, Medium companies have the highest probability of maintaining certification for more than 6 years, while micro and small companies struggle to do so (Figure 5). This highlights a correlation between organization size and sustainability.

The following potential reasons are discussed to shed light on the unique circumstances that may influence certification sustainability across various company sizes:

Micro to small companies often struggle to maintain certification within the first two years which might be due to several reasons. Firstly, these companies may face challenges due to insufficient resources, such as a lack of financial capacity to invest in necessary infrastructure, training, and compliance measures required for certification. Secondly, limited expertise poses a barrier as micro and small companies may not have access to specialized knowledge or dedicated personnel capable of effectively implementing and managing the certification processes. Moreover, these companies often face challenges in retaining personnel, which could ultimately affect their QMS continuity. In many cases,

No	Classification		Companies surveyed	%
Number of employees	1–9	Micro	2	11
	10–49	Small	7	37
	50–249	Medium	9	47
	>250	Large	1	5
Typology	Manufacturing		9	47
	Service/Education		8	42
	Local government		0	0
	Parastatal		2	11
	Public admin		0	0
External consultancy	Yes		14	74
	No		5	26

Note(s): $n = 19$
Source(s): Author's own work

Table 4. Characteristics of surveyed companies

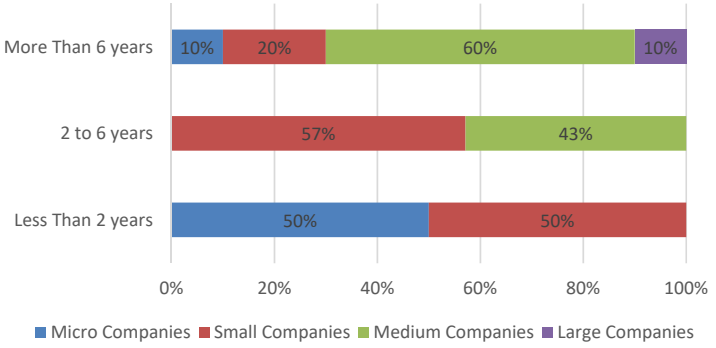


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Figure 5. Years of certification in relation to size

a single individual, typically the director or owner of the company, is burdened with multiple responsibilities, making it challenging to allocate sufficient time and expertise towards certification requirements. Additionally, inadequate infrastructure can hinder their ability to establish the required systems, processes, and controls needed to meet certification standards.

On the other hand, *small to medium-sized companies* demonstrate a higher likelihood of sustaining certification for 2–6 years. This can be attributed to their better capabilities and resources, including a more structured approach, dedicated personnel, and financial stability, allowing them to allocate resources towards meeting certification requirements. Moreover, small and medium-sized companies may tend to have a better understanding of certification standards and possess the ability to implement the necessary processes and controls effectively, showcasing their organizational readiness.

Medium-sized companies stand out as having the highest probability of maintaining certification for an extended period. This can be attributed to their established processes, including structured and mature systems that enable them to sustain certification over time. They often have dedicated teams comprising specialized personnel responsible for ensuring compliance with certification requirements. Furthermore, these companies are more likely to retain personnel for prolonged periods, which enhances the effectiveness and improvement of their QMS knowledge and experience over time. Additionally, medium-sized companies tend to possess greater financial resources, providing them with the means to invest in ongoing certification maintenance and continuous improvement efforts.

4.2.1.4 Years of certification in relation to organization sector. The findings indicate that most sectors are able to maintain certification within 2–6 years and the service sector is the most likely in this category. However, the manufacturing sector has the highest probability of maintaining certification for more than 6 years, in which the service and Parastatal sectors struggle to do so (Figure 6).

Overall, the results suggest that the organization sector plays a crucial role in certification sustainability in Botswana, with manufacturing companies having a better chance of maintaining certification for a longer period. On the other hand, service and Parastatal companies are more likely to face challenges in sustaining certification in the longer term. These results highlight a correlation between organizational sector and certification sustainability.

The dominance of manufacturing companies over the service sectors and parastatals in the "more than 6 years" category is further emphasized by its overall dominance in the ISO 9001 certification. This could be attributed to several factors. One possible reason is the

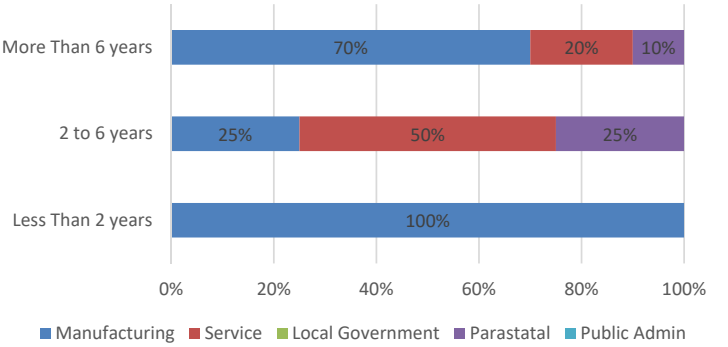

Figure 6.
Years of certification in relation to sector

Source(s): Author's own work

growing demands placed on manufacturing companies in terms of product integrity and compliance. Over time, customers have increasingly emphasized not only product quality but also factors related to the manufacturing process and environmental impact.

Manufacturing companies are often required to adhere to stringent quality standards and regulations to ensure the integrity of their products. This includes implementing robust quality control measures, ensuring consistency in production processes, meeting specific environmental and sustainability requirements, improve their operational efficiency, product traceability, enforce risk management processes and demonstrate a commitment to continuous improvement. By investing in these areas, manufacturing companies can enhance their reputation, build customer trust, and maintain long-term certification. This can contribute to better compliance with certification standards and facilitate the maintenance of certification over an extended period.

Manufacturing companies may also have a higher capacity to allocate resources and invest in training, infrastructure, and continuous improvement initiatives. This allows them to enhance their processes, upgrade equipment, and implement measures that align with evolving certification requirements. Additionally, the manufacturing sector often benefits from a structured approach to quality management systems, such as other ISO standards, which provide a solid framework for maintaining certification.

4.2.1.5 Years of certification in relation to the use of external consultancy services. While it's not verifiable to suggest a clear correlation, these findings do make a distinction that when using consultancy services, there is a 50% probability for organizations to maintain certification for more than 6 years, but equally, 50% of organizations are not able to maintain certification for more than 6 years. Conversely, without the use of consultancy, there is a higher probability of 60% for organizations to maintain certification for more than 6 years, with only 40% of organizations not able to maintain certification for more than 6 years (Figure 7).

Overall, these findings suggest that the utilization of consultancy services may have a slight hindrance for long-term sustainability of the certification in Botswana industry, while those who used their internal structures have a better chance of longer-term sustainability.

The survey highlights the importance of considering the choice between using consultancy or relying on internal structures when seeking certification sustainability, over and above having a better understanding of how consultancy can be effectively utilized for better results. There is need for organizations to plan for the strategic infusions of consultancy services when implementing the QMS. Consultancy may be able to provide the best service through their experiences for accelerated implementation, in which case in the

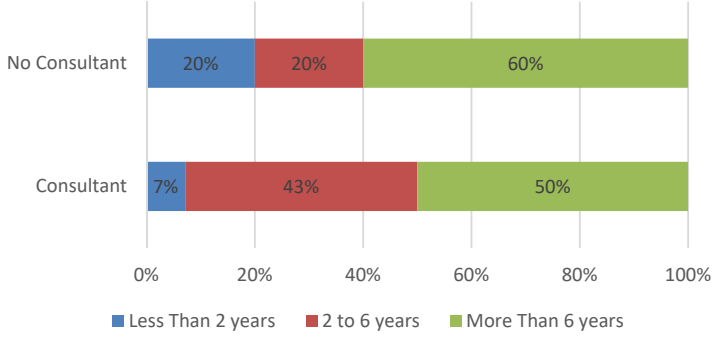

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Figure 7.
Years of certification in relation to use of consultancy services

long run, the organization may not be able to sustain the growth of the system. There must be a clear understanding of how the services are to be utilized, bearing in mind the long-term need of sustainability.

Based on the survey results, the findings suggest that using consultancy services for certification may potentially hinder long-term sustainability. Several possible reasons identified below can explain this observation:

(1) *Lack of internal expertise development*: Relying heavily on consultancy services may result in a limited transfer of knowledge and skills to the organization's internal personnel. If the organization heavily relies on consultants without actively developing its internal expertise, it may face challenges in independently maintaining the certification over the long term.

(2) *Dependency on external support*: Organizations that heavily rely on consultancy services may become dependent on external expertise and support. This dependency can hinder their ability to adapt and respond independently to changing certification requirements or address issues that may arise in the absence of consultants.

(3) *Limited organizational ownership and engagement*: Organizations that rely solely on consultancy services may not develop a deep sense of ownership and engagement in the certification processes. Without active involvement and understanding of the certification requirements and processes, organizations may struggle to integrate the certification into their culture and operations, leading to challenges in sustaining it in the long run.

(4) *Financial considerations*: Engaging consultancy services can be costly, especially if organizations rely heavily on external support throughout the certification process. Over time, the financial burden of continuous consultancy services may become unsustainable for some organizations, affecting their ability to maintain certification independently.

(5) *Misalignment with organizational goals and culture*: Consultancy services may not always align perfectly with an organization's unique goals, values, and culture. If the consultancy approach and recommendations are not fully integrated into the organization's operations and strategic direction, it may hinder long-term sustainability as the certification efforts may not be fully embraced by the organization.

It is important to note that while consultancy services may have potential hindrances to long-term sustainability, they can also provide valuable expertise, guidance, and accelerated implementation during the initial stages of certification. The key is to strike a balance between utilizing consultancy services for effective implementation and gradually developing internal capabilities to ensure independent certification sustainability in the long run.

4.2.2 Analysis of the effects of the motivations for ISO 9001 QMS certification on sustainability failures in Botswana. The survey results indicate that most factors related to ISO 9001 implementation in Botswana are perceived as moderately to highly important (4.2–4.84), except for certification for international markets and government initiatives, which were rated as neutral to moderately important (3.68 and 3.11, respectively) (Figure 8).

The primary motivation for ISO 9001 implementation in Botswana industries is to improve product/service quality (score: 4.84). Other important reasons include improving processes and internal operations efficiency, enhancing documentation for standardization, meeting customer requirements, and improving company image (score: 4.79). The need to

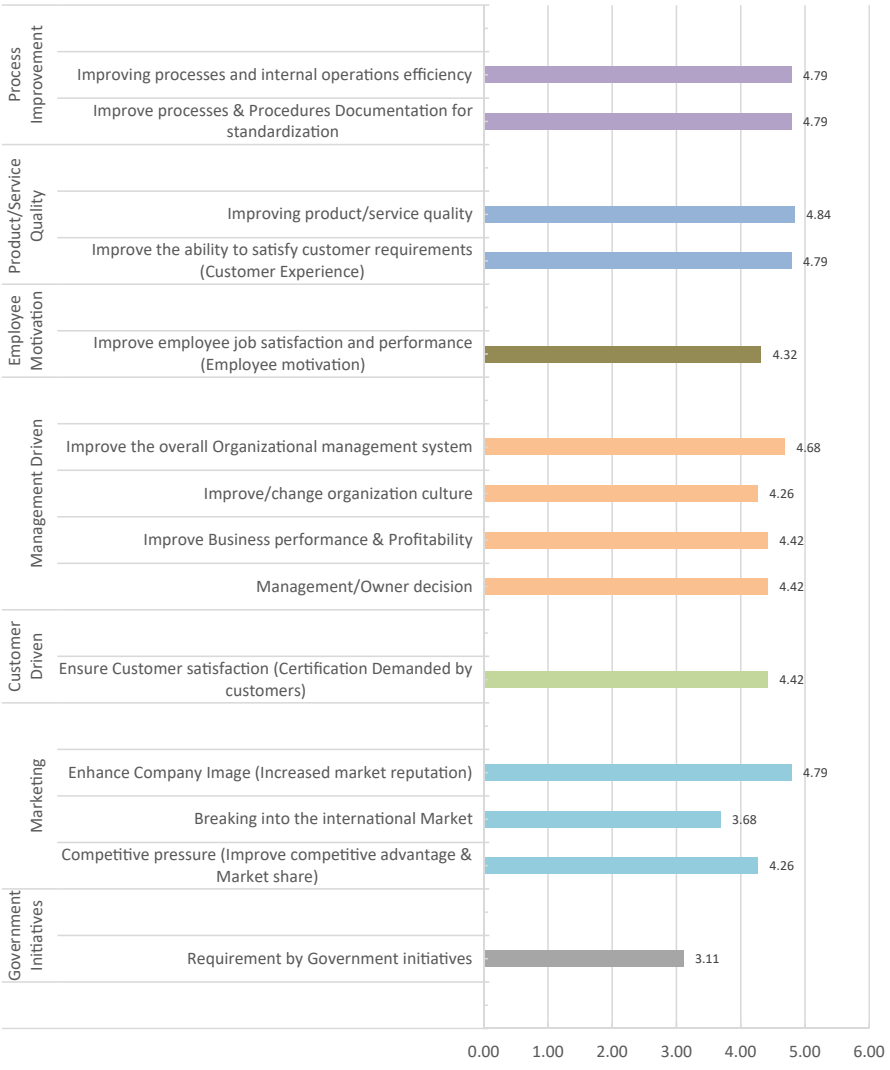

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Figure 8.
Mean scores of perceived motivations for ISO 9001 certification

improve the overall organization management system also ranked high (score: 4.68). All other reasons fell within the range of 4.2–4.5 (Figure 8).

The various motivations are classified into distinct categories (Figure 9).

The survey findings demonstrate the varying importance placed on different motivations for ISO 9001 certification in Botswana industries. While government initiatives received a neutral score, all other categories were rated as moderately to highly important. This suggests that government efforts to promote ISO 9001 certification in Botswana may not be sufficient or may not be considered important by organizations. The need to improve product/service quality emerged as the primary motivation (4.82), followed closely by process

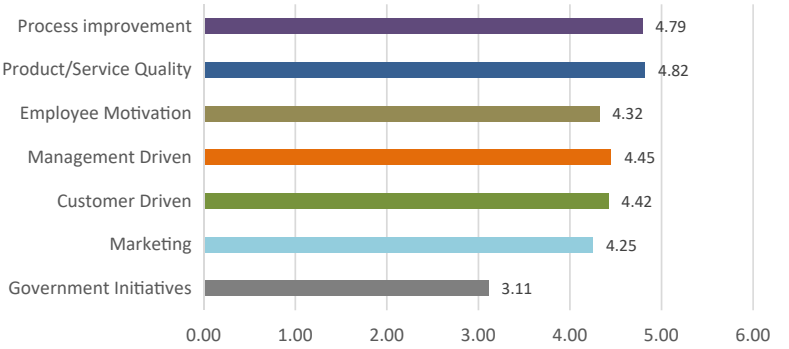

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Figure 9.
Mean score averages of the perceived motivations for certification

improvement (4.79). This is not surprising since the certification needs in Botswana are mainly sought after by the manufacturing sector. Other factors such as management-driven and customer-driven considerations also scored moderately to highly important. Notably, employee motivation (4.32) and marketing (4.25) were the last reasons in the moderate to highly important score range.

The high rate of ISO 9001 decertification in Botswana industries can be attributed to various factors, including motivations for obtaining the certification. Organizations that obtained certification primarily for marketing purposes (4.25) rather than as a strategic tool for process improvement (4.79) or product/service quality enhancement (4.82) may lack commitment to sustaining the certification and fail to realize its intended benefits. Similarly, organizations obtaining certification to meet government initiatives (3.11), which are deemed relatively less important, may not fully commit to maintaining certification over time. In contrast, organizations that pursued certification to improve product/service quality (4.82) and enhance process efficiency (4.79) may tend to demonstrate stronger commitment to meeting ISO 9001 requirements and sustaining certification. However, even with greater commitment, challenges in meeting ongoing requirements, such as resource limitations or a lack of alignment with strategic objectives, can hinder sustained certification.

The motivations for certification are further understood through understanding motivational factors as internal or External (Table 5).

The survey results indicate that organizations in Botswana predominantly seek ISO 9001 certification based on internal factors rather than external influences (Table 5). This approach may contribute to a higher rate of decertification as organizations may prioritize maintaining the certification only as long as it meets their initial needs or if they can sustain their Quality Management System (QMS) without certification. Therefore, it can be concluded that the

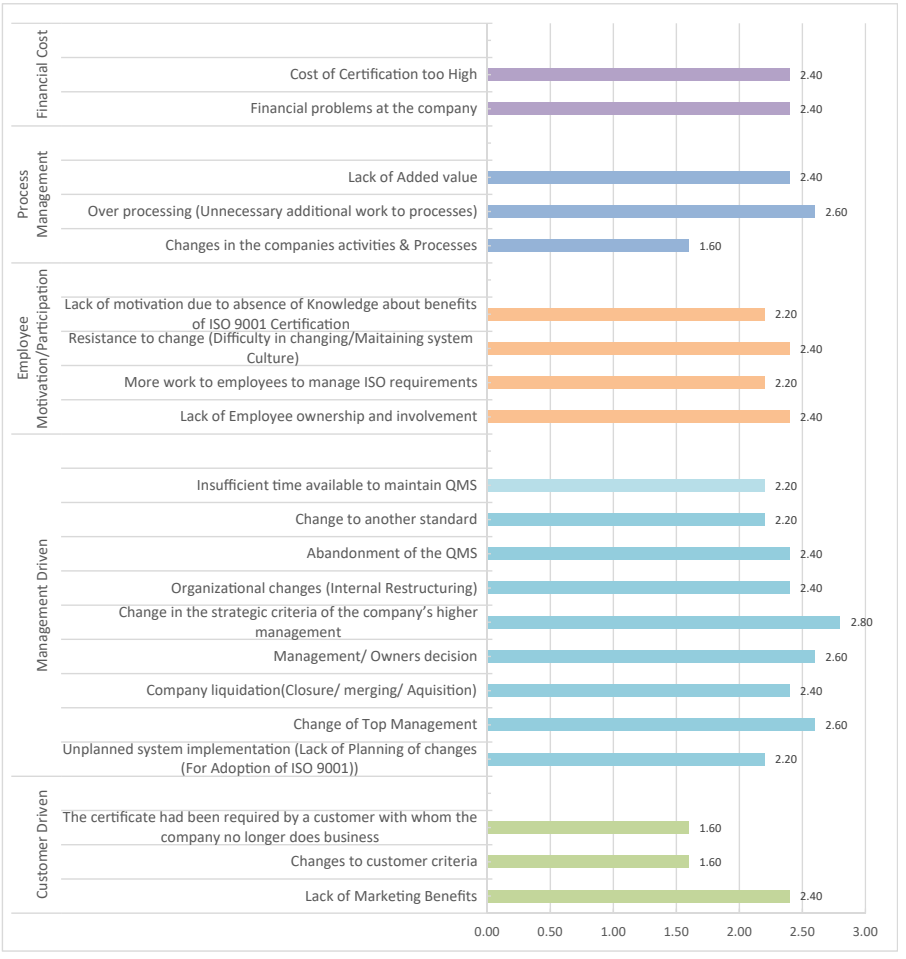
Level of importance Perceived motivations for certification by category	Mean score	Rank	Internal/or external motivation
Process improvement	4.79	2	Internal
Product/service quality improvement	4.82	1	Internal
Employee motivation	4.32	5	Internal
Management driven	4.45	3	Internal
Customer driven	4.42	4	External
Marketing	4.25	6	External
Government initiatives	3.11	7	External

Source(s): Author's own work

Table 5.
Classification of ISO 9001 certification motivations

sustainability of certification in Botswana can be directly interrelated with the motivations behind seeking certification, that is, if the internally motivated reasons are no longer relevant and there is no external demand for certification, organizations may easily drop the certification, leading to a higher decertification rate.

4.2.3 Perceived causes of failure to sustain ISO 9001 certification in Botswana. The survey results suggest that most factors have minimal or no significant effect (scores: 1.6 to 2.8) on ISO 9001 decertification in Botswana industries. No single factor stands out as the major contributor to decertification. However, among the identified factors, the primary influence on decertification is the changes in higher management's strategic criteria (mean score of 2.8). Other significant factors, with a mean score of 2.6 each, include top management decision, change of top management, and the perception of additional work associated with ISO 9001 certification. Notably, certification requirements by customers and changes to customer criteria are perceived as less significant factors, with a mean score of 1.6 (Figure 10).



Source(s): Author's own work

Figure 10.
Mean scores of the perceived causes of ISO 9001 de-certification

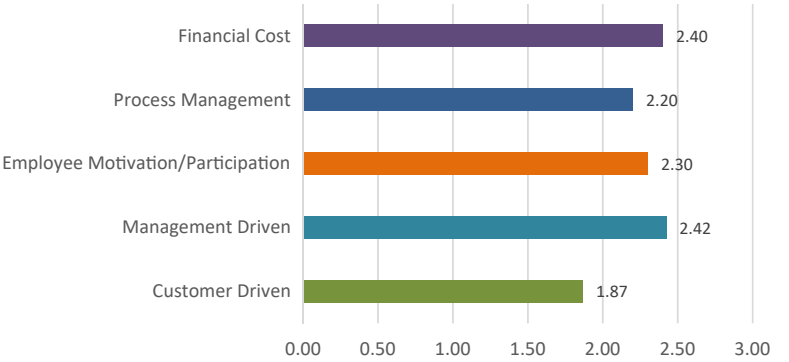
The various reasons for decertification are classified into different categories (Figure 11).

The survey results (Figure 11) indicate that the Botswana industry does not have a single significant factor contributing to ISO 9001 decertification. All identified factors fall within a narrow range (1.87–2.42), suggesting an overall indifferent perception towards the causes of decertification.

Although, no category is perceived to have a moderate or major effect on ISO 9001 decertification. The survey findings reveal that *(1) management-driven factors* have the highest influence on ISO 9001 decertification. These factors encompass management-related decisions that hinder certification progress, intentions to withdraw from certification, and the level of management's commitment to the QMS certification. Among the management factors, changes in the strategic criteria of the company's top management (mean score: 2.8) emerge as the most significant contributor to ISO 9001 decertification in Botswana industries (Figure 3.10). This suggests that Botswana industries often undergo strategic shifts with short-term objectives, viewing ISO 9001 as a means to accomplish specific goals highlighted in the motivations for ISO 9001 certification. This suggests that short-term objectives take precedence over the long-term sustainability of certification in Botswana industries.

(2) Financial constraints emerge as the second most significant factor contributing to ISO 9001 decertification. This category encompasses challenges such as certification costs and the organization's financial limitations. Companies may choose decertification if they perceive that possessing the certificate does not provide a competitive advantage or add value to their operations and financial performance. Additionally, the cost of implementation or renewal, especially if not recovered, coupled with the organization's challenging financial situation, may lead to a decision against certification renewal. Both certification costs and financial problems have an equal impact on financial constraints associated with certification (Figure 10).

The survey findings reveal that factors related to *(3) process management* represent the third most influential reasons for ISO 9001 decertification. These factors encompass process restructuring, the perception of certification as an unnecessary additional workload to processes, and the perceived lack of added value to processes (Figure 10). Among these factors, the perception of certification as an unnecessary additional workload holds the greatest influence. These results align with the findings regarding the motivations for ISO 9001 certification. It suggests that internal factors, such as process improvement, which initially motivate organizations to seek certification, can become reasons for decertification



Source(s): Author's own work

Figure 11.
Mean score averages of the perceived causes of ISO 9001 de-certification

once the desired goals have been achieved or when organizations realize they can continue to function effectively without the certification.

(4) Employee motivation emerges as the fourth most significant factor contributing to ISO 9001 decertification which results in low levels of participation. This category encompasses resistance to change, lack of ownership, and limited employee involvement, all of which have a notable impact on decertification. Lack of motivation due to limited knowledge about the benefits of the QMS and the perceived additional workload for employees have a slightly lower impact within this category (Figure 10).

Lastly, *(5) customer-driven* factors are perceived to have a minor effect on ISO 9001 decertification. The survey results indicate that customer-related benefits or demands do not significantly influence the decision to decertify. However, the lack of marketing benefits stands out as a relatively influential factor within this category (Figure 10).

The findings provide insights for Botswana industries and other organizations seeking to maintain their ISO 9001 certification, highlighting the effective management, sound financial planning, efficient processes, and employee motivation and participation as critical factors for sustaining certification.

4.2.4 Understand the relationship between the implementation/certification process and sustainability failures. The certification process is generally perceived as manageable, with variations in difficulty across stages ranging from neutral to easy. The most challenging stage is the development of the Quality Management System, particularly its initial development and implementation and establishing objectives for the QMS. The challenges encountered during the initial phases of ISO 9001 implementation highlight the need for a thorough understanding of the standard and strategic planning. Addressing these challenges is crucial for the long-term sustainability of the QMS in Botswana industries. This observation aligns with the common practice of organizations seeking consultancy services when implementing the QMS. Re-certification and Stage 1 audits are relatively less difficult, while surveillance audits and continual improvement are easier (Table 6, Table 7 and Figure 12).

While the overall certification process is perceived as relatively easy for Botswana industries, the challenges encountered during the initial stages of Quality Management System (QMS) implementation can have significant implications and can profoundly impact the sustainability and effectiveness of the certification. These initial challenges serve as precursors to various reasons for decertification. If not adequately addressed, can contribute to the emergence of decertification reasons such as management-driven factors, financial constraints, process management issues, and employee motivation/participation concerns. If the QMS implementation is not well-planned or lacks a clear alignment with the organization's strategic objectives, management decisions may hinder certification progress, ultimately leading to decertification. Similarly, financial constraints can become more prominent if the perceived value and competitive advantage of the certification are not realized due to inadequate implementation. Moreover, if the certification process is viewed as an unnecessary additional workload or lacks perceived added value to the organization's processes, it may negatively affect employee motivation and participation, potentially leading to decertification. Inadequate understanding and implementation of the QMS during the initial stages can undermine its long-term effectiveness, impacting both the organization's commitment to certification and the sustainability of its quality practices.

Organizations must prioritize certification process factors, especially during the initial stages of QMS implementation, to reduce the risk of decertification. This entails developing comprehensive plans, aligning the QMS with strategic objectives, ensuring financial feasibility, addressing process management challenges, and fostering employee engagement culture. Effectively addressing these factors enhances the likelihood of maintaining

ISO certification process stage	Level of difficulty: Very easy 1	Easy 2	Neutral 3	Difficult 4	Very difficult 5	Total responses	Mean score	Rank
Task 1 - Developing the quality management system	4%	36%	32%	21%	7%		*2.92*	*1*
Establish, objectives for ISO 9001 QMS Implementation	1	7	6	4	1	19	2.84	2
Understand ISO 9001 Requirements	2	7	5	5	0	19	2.68	10
Determine gaps against the requirements	1	8	5	5	0	19	2.74	8
Establish roles and responsibilities for the success of the QMS	0	9	7	1	2	19	2.79	6
Develop and implement the quality management system	0	3	7	5	4	19	3.53	1
Task 2- Stage 1 audit readiness (Certifying body)	0%	53%	26%	18%	3%		*2.71*	*3*
Preparedness for evaluation of QMS documentation conformance by the certifying body	0	8	6	5	0	19	2.84	2
Completing corrective actions for Stage 1 Audit	0	12	4	2	1	19	2.58	11
Task 3- Stage 2 audit readiness: pre-certification	16%	24%	11%	8%	0%		*2.58*	*4*
Implementation and conformance to QMS documentation and ISO standard	2	7	4	5	1	19	2.79	6
Completing corrective actions for Stage 2 Audit	3	9	4	3	0	19	2.37	19
Task 4- Surveillance audits- post certification	18%	19%	26%	15%	0%		*2.49*	*5*
Maintain QMS after Certification	5	5	5	4	0	19	2.42	18
Continued QMS improvement and adherence to requirements of the QMS	4	3	9	3	0	19	2.58	11
Completing corrective actions to surveillance audit	4	6	5	4	0	19	2.47	15
Task 5- Re-certification audits	11%	21%	32%	26%	0%		*2.82*	*2*
Continued fulfilment of the requirements of the certification	2	4	6	5	0	17	2.82	4

Table 6.
Level of difficulty for ISO 9001 certification process tasks

(*continued*)

Level of difficulty ISO certification process stage	Very easy 1	Easy 2	Neutral 3	Difficult 4	Very difficult 5	Total responses	Mean score	Rank
Task 6- Quality management system continual improvement	9%	7%	11%	7%	0%		*2.47*	*6*
Continued monitoring and improvement of the quality management system	5	4	6	4	0	19	2.47	15

Note(s): Mean scores of the process Tasks using the 5-licker scale
Source(s): Author's own work

Table 6.

Level of difficulty ISO certification process stage	Mean score	Rank
Task 1 - Developing the quality management system	2.92	1
Task 2- Stage 1 audit readiness (Certifying body)	2.71	3
Task 3- Stage 2 audit readiness: pre-certification	2.58	4
Task 4- Surveillance audits- post certification	2.49	5
Task 5- Re-certification audits	2.82	2
Task 6- Quality management system continual improvement	2.47	6

Note(s): Summary of Table 8
Source(s): Author's own work

Table 7.
Rank of the difficulty level of ISO 9001 certification process tasks

certification and obtaining the benefits of a robust and sustainable quality management system.

4.3 ISO 9001 implementation optimization model

This study reveals significant challenges in maintaining ISO 9001 QMS Certification in Botswana, alongside a notable gap in acceptance and implementation. To address these issues, organizations must not only focus on implementing ISO 9001 but also develop a comprehensive continuous improvement plan that integrates QMS standards with organizational objectives and operations. Bridging the gap between development, implementation, and maintenance of improvement strategies is crucial, emphasizing the importance of effective management, financial planning, efficient processes, and employee motivation and participation. The study highlights the need for a well-defined plan and effective strategies during the initial phases of implementation to successfully implement and sustain the QMS within organizations.

Although the ISO 9001 standard emphasizes the use of the PDCA cycle method as a strategy for continuous improvement in processes and the quality management system, it primarily provides generic guidelines for compliance rather than specific recommendations on strategic deployment and maintenance. As a result, organizations implementing ISO 9001 need to develop their own strategic approaches to effectively deploy and sustain the system, ensuring continuous improvement throughout their operations and the overall quality management system.

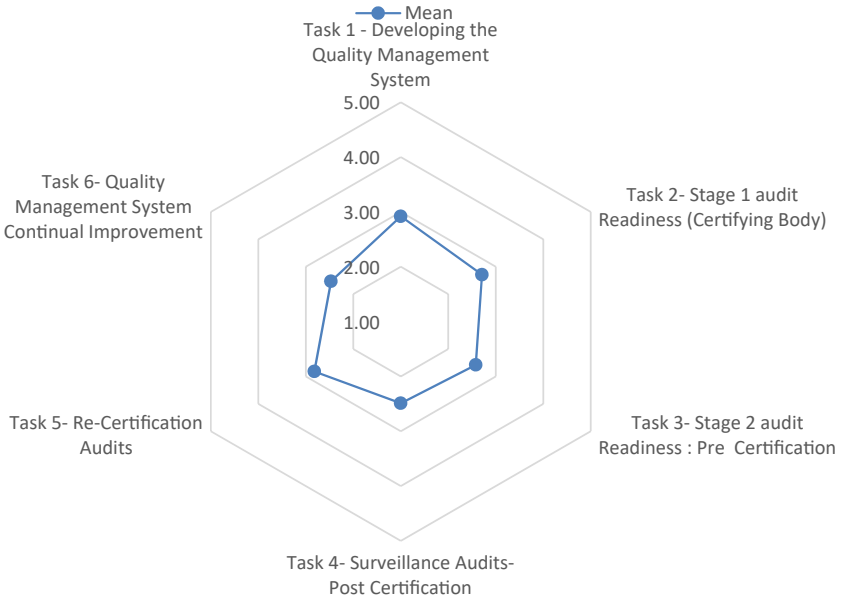


Figure 12.
Mean score level of difficulty of ISO 9001 certification process stages

Source(s): Author's own work

In order to facilitate the effective implementation of ISO 9001, this study provides model recommendations that guide organizations in seamlessly integrating the ISO 9001 QMS into their management and operational processes. These recommendations are aimed at enhancing the organization's capacity to develop and sustain ISO 9001, promoting a culture of continuous improvement and ensuring the long-term success of the system.

The model (Table 9) with model diagram (Figure 13) identifies four (4) critical phases that the organization must go through in order to successfully adopt ISO 9001. As a result, ISO 9001 implementation should be viewed as a process and managed using the process approach. The model also considers the following essential input elements (Table 8) as the primary drivers of the model's effectiveness. These are the elements needed to successfully implement the system as emphasized by the sustainability challenges. It highlights effective management, sound financial planning (resources) and employee motivation and participation as critical factors for sustaining certification which have been identified as the main failure factor in this study.

Table 9 outlines the four crucial phases necessary for the successful development and implementation of ISO 9001 QMS. The model recommends establishing objectives, gaining a comprehensive understanding of the requirements, assessing the gaps that need to be addressed in the QMS implementation process, and finally, making the implementation a planned process.

The visual diagram in Figure 13 portrays the model described in Table 9, illustrating the implementation of ISO 9001 as a systematic process. This diagram underscores the significance of viewing ISO 9001 implementation as a dynamic and continuous process, allowing organizations to seamlessly incorporate and maintain the standard's requirements.

Factor	Justification
Leadership	1. Leadership must establish and maintain work environments that engage people across the organization to achieve its objectives 2. It is vital for the transformation to have a long-term vision, clearly defined and effectively communicated objectives, and a strategy to integrate ISO 9001 as a daily management system rather than a tool to satisfy specific requirements
Engagement (Involvement of the people	1. ISO implementation is influenced by the level of awareness, the level of cooperation among management levels, and the amount of employee resistance 2. Employees at various levels should be involved in the planning and implementation processes to become more empowered, competent, and dependable
Resources	1. Ensure that there is a long-term budget in place to meet the certification's budgetary commitments 2. Unplanned long-term budgetary constraints can be a cause for termination due to the financial requirements from the certifying body 3. This study has proven that fiscal restrictions is one of the main reasons for organizations to terminate certification

Source(s): Author's own work

Table 8.
Input factors for the ISO 9001 implementation model

5. Conclusions

The key findings from the current study are the following:

(1) There is slow adoption and high termination rate of ISO 9001 certification in Botswana.

- The adoption rate of ISO 9001 certification in Botswana has been slow, with a total of 91 certifications issued from 2003 to 2021 (18 years)
- The private sector has shown higher adoption rates compared to the public sector, accounting for 79 certifications (87%) during the same period.
- The public sector, on the other hand, has exhibited a slower adoption rate, with only 12 certifications (13%) from 2003 to 2021.
- There is a notable termination rate, with 50 certifications (55%) being terminated out of the total 91 issued since 2003 to 2021.

(2) The manufacturing sector is the leading industry in ISO 9001 certification in Botswana, accounting for 45% of the total certifications. The service sector follows with 36%, while the public sector lags with 19%.

(3) There are relationships in ISO 9001 certification sustainability and the sector, size, and utilization of consultancy services.

- In terms of sector, manufacturing companies are more likely to maintain certification in the long-term.
- In terms of size, Micro and small companies struggle to maintain certification, often failing within two years. In contrast, medium-sized companies have better sustainability.
- Consultancy services may slightly hinder long-term sustainability, while reliance on internal structures improves the chances.

	Phase		Description
1	Establish objectives	Define implementation motivations against organization set goal	1. The fundamental motivation for ISO 9001 certification must be for long-term strategic planning, according to the long-term management vision. As a result, there must be a. Clear Long term (5 years–10 years) Objectives to be Achieved from QMS implementation b. Clearly defined long term strategic benefits from QMS implementation
2	Understand ISO 9001 requirements	Ensure that the organization at all levels understand the requirements of the QMS and its potential benefits	1. The organization through top management at all levels must Assess and understand a. Requirements of the standard that the organization must fulfil and maintain b. Potential changes (that might impact the current management and operational processes) throughout the organization to maximize on the opportunities of the system c. Resource requirements (Structural requirements, budgetary requirements, and competency requirements)
3	Gap analysis	Define and analyze the Gaps: Asses the current state of the Organization against the requirements of the QMS	1. The organization must Recognize its current state at all levels of its processes (Management or operational), its culture (Environment for processes) and its resources 2. Find the gap between the current state and the a. Requirements of the standard, b. The potential changes required, and the resources needed 3. Create a comprehensive action plan to close the gaps
4	Implementation plan	Develop a comprehensive implementation plan	1. Develop a long-term implementation strategic plan (Gap analysis action plan, and long-term objectives action plan) 2. The implementation should be approached as a transformation strategy for the entire organization 3. All levels of the organization must be thoroughly engaged throughout the planning process a. Deployment of Executive level Mandate-Synergize strategic processes with ISO 9001 requirement (Clause 5, 6, 7,9, 10) and strategic objectives b. Deployment of department level mandate (Synergize operational Processes with ISO requirements and organization long term objectives)

Table 9.
ISO 9001 implementation model

Source(s): Author's own work

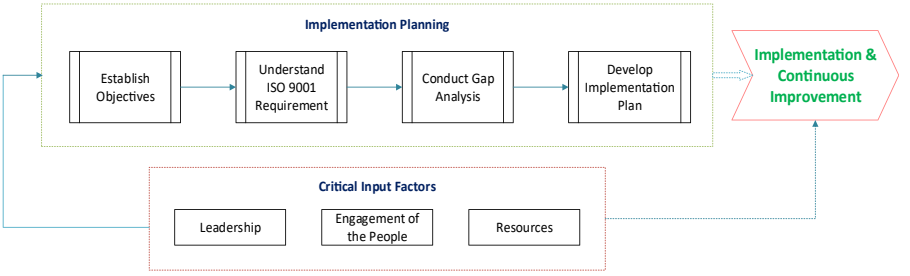
(4) The main motivations for ISO 9001 certification in Botswana are the need to improve product or service quality and the need for process improvement.

(5) The main factors leading to ISO 9001 decertification in Botswana are management factors, financial constraints, and process management factors.

(6) Overall, the certification process is manageable for Botswana industries. The main challenges in the certification process are planning for implementation of the QMS, establishing QMS objectives, and ensuring conformity of QMS documentation.

The research findings contribute to the theory by uncovering the challenges of adoption and high termination rate of ISO 9001 certification in Botswana, shedding light on sector-specific sustainability relationships, motivations, decertification factors, and challenges in the certification process. Practically, this research suggests that private sector organizations in Botswana have been more successful in ISO 9001 certification and emphasizes the significance of the manufacturing sector in quality management. The research, in addition to existing literature that predominantly emphasizes financial costs as the primary driver of decertification, has illuminated the role of other factors mainly management-driven decisions in the decertification process in Botswana. Here, management considerations take precedence, followed by financial costs and employee motivation. This study opens avenues for future research to delve into various management ideas that affect the success of QMS implementation. Understanding these factors can contribute to a more comprehensive evaluation of Quality Management System (QMS) success, particularly from a management perspective. Overall, this research offers valuable insights for quality management practices in Botswana highlighting the need for further investigation into the factors influencing certification decisions and long-term sustainability while offering practical guidance for policymakers and organizations. Managers are advised to adopt tailored strategies based on their organization's characteristics, considering factors such as sector, size, and internal capabilities. The role of consultancy services should be carefully evaluated. Motivate teams through the lens of quality improvement and address management-related challenges implementing QMS. Financial planning, strategic process integration, and planned documentation of the Quality Management System are crucial for successful ISO 9001 implementation. This knowledge will not only benefit organizations in maximizing the advantages of certification but will also inform policymakers and quality management professionals in refining the framework to meet the evolving needs of the global business landscape.

The limitation of the paper lies in its reliance on a descriptive analysis within the methodology. To address this limitation, the authors could consider incorporating more advanced analytical techniques, such as statistical analysis such as correlations to understand more accurately the relationships between certification motives and



Source(s): Author's own work

Figure 13. ISO 9001 implementation model diagram

decertification factors, in future research. This would enhance the depth of the analysis and provide more insights into the subject matter. Future research should explore more recent data, assess external validity, conduct in-depth case studies of termination cases, delve into QMS implementation challenges, and consider longitudinal studies to track certification evolution. By diversifying the methodological approach, the authors can strengthen the validity and reliability of their findings, contributing to a more thorough exploration of the research topic. Additionally the survey method's limitations include insufficient information, impacting result interpretation and study objectives. Future research could mitigate these issues by incorporating interviews, addressing survey weaknesses, obtaining supplementary information from multiple sources, and allowing for a longer data collection period to improve participation.

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