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EDITORIAL NOTE



Welcome to Volume 1 Issue 2 of the JMSIT. The journal is gaining a lot of traction after the first issue was released in June 2025. With this issue coming out four months later, this reassures our contributors that once their articles are accepted, they are published within a reasonable period of time.

This issue has 12 articles focusing on management, leadership, innovation and technology - related areas. Titles of the articles are based on performance management, communication, responsible Artificial Intelligence (AI) integration into university education, computerized accounting, leadership styles, agricultural policy, financial leakages, internal audit, food tourism, Environmental Social Governance (ESG), cultural heritage tourism and procurement reforms. The issues covered by the articles are very topical and central to problems affecting society today. Solutions proffered are hopefully going to usher the world into a better place.

We wish you happy reading and look forward to the next issue.

Editor-in-Chief

Professor Obert Sifile

November 2025

“The strategic importance of performance measurement in business organisations: blending financial and non-financial performance measures.”

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Abstract

This study explores the strategic importance of performance measurement in business organisations, accentuating the integration of both financial and non-financial performance measures. The study took a qualitative approach and followed a systematic literature review methodology informed by the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines to ensure a robust and transparent process. This study thus synthesizes existing literature on performance measurement frameworks that highlight the benefits of a balanced approach that includes non-financial indicators such as internal business processes, customer satisfaction, employee engagement, corporate social responsibility, and stakeholder management. By examining various empirical studies and theoretical models, this study illustrates how blending financial and non-financial measures may enhance strategic decision-making, drive organisational performance, and foster sustainable growth. The review concludes by reflecting on the implications for theory, policy and practice, e that emphasised to practitioners on the need to seriously consider implementing the integrated performance measurement systems that would align with organisational objectives and stakeholder expectations that would reinforce the strategic role of performance measurement in attaining sustainable growth and long-term success.

Key words: business organisations, financial, non-financial, performance, strategy.

Introduction

‘What gets measured gets done’. This is an old adage that emphasises the importance of setting performance standards and measuring actual performance against the set performance standards. The process of performance measurement entails setting organisational objectives that specify the key result areas (KRAs), formulate key performance indicators (KPIs), and summarise the critical actions that are envisaged to ascertain that actual performance meets targeted performance (Mio, 2022; Rwothumio, 2021). Performance measurement is thus critical for business organizations for various strategic reasons. Primarily, performance measurement assists in ensuring that the firm’s activities are aligned to its strategic objectives that facilitate a strong and deliberate focus on priorities. Closely related to this is the fact that performance measurement facilitates informed strategic decision-making (Mio, 2022; Niu, 2021; Zhang, 2022). Through the collection and analysis of performance data, organisational leaders are able to make informed decisions that enhance operation efficiency and astute allocation of resources. The assigning of various tasks to specific individuals for implementation and the clear articulation of performance metrics for those tasks foster accountability and transparency in evaluating individual performance as there is a basis for responsibility tracking and ascertaining that every member contributes to the team effort (Akrofi, 2016; Zhang, 2022). Through regular assessments accompanied by performance measurement facilitates continuous improvement that creates scope for identification of performance gaps which highlight areas for improvement. That way, management develops requisite interventions to enhance processes, contributing to product and service quality (Al Qayoudhi, 2021; Kharabsheh, 2017). By benchmarking, firms are able to compare their performance with expected industry standards or their competitors. Benchmarking provides space for identifying the firms’ own strengths and weaknesses in order to capitalise on their strengths to exploit on opportunities and create competitive advantage. Performance measurement creates channels for providing feedback to employees on their performance, facilitating continuous employee engagement, recognition and rewarding of outstanding performance that fosters motivation in the process (Muhammad, 2021; Simpson, 2022). The regular monitoring of performance metrics can assist the organisation in managing risks as it gives early warning signs for potential bottlenecks, loopholes, and leakages in the system. Identification of such threats to the organisation’s effective and efficient functioning helps managers to proactively intervene (Bracci, 2022; Hristov, 2024). Effective and efficient goal achievement requires optimal allocation and utilisation of resources. Through continuous performance evaluation, organisational leaders are able to identify inefficiencies and redesign the system or reallocate resources to optimise utility, minimise costs and enhance profitability (Alvarez, 2021; Alarussi, 2021; Lim, 2021). The quality of the firm’s products and/or services is enhanced through continuous monitoring of the organisation’s systems to ensure the best quality for satisfying the customer expectations. Performance measurement can thus result in the enhancement of customer loyalty that can be tracked through customer survey feedback channels. Such response is used for continuous product and service improvement (Camilleri, 2021; Hallencreutz, 2021; Naini, 2022). Performance measurement systems have a continuous feedback loop, which facilitates the collection and analysis of data to inform the strategic planning process, which enables firms to be flexible and adjust their strategies in response to real time customer needs. Overall, performance measurement is a strategic tool for firms to align resource allocation to strategic goals that enhance sound decision-making, foster continuous improvement, contribute towards sustainable competitive advantage and profitability (Biondi, 2022; Camilleri, 2021; Mahroof, 2022; Mio, 2022).

Theoretical Framework

Performance management theories provide advanced foundational concepts and frameworks for understanding how to effectively manage and enhance employee performance. In this study, The Goal Setting Theory, the Expectancy Theory, and the Equity Theory are the lens through which the strategic importance of performance measurement will be discussed.

Goal Setting Theory

Developed by Locke (1968), the Goal Setting Theory posits that specific and challenging goals lead to higher performance. The theory emphasises the setting of specific, measurable, attainable, realistic, and time-bound (SMART) goals as a strategic intervention for ensuring individual, team, and organisational performance (Locke & Latham, 2002). The theory further asserts that regular feedback on progress enhances staff motivation and contributes towards performance improvement (Gkizani, 2022; Konstantara, 2022). The tenets of the Goal Setting Theory are relevant to the topic under study as it sets a critical foundation for performance measurement, that informs the genesis of measuring performance thus setting specific goals and performance standards, against which actual performance will be regularly measured. The emphasis on SMART goal setting is important because where there are no goals or performance standards, there is no basis for performance measurement.

Expectancy Theory

Advanced by Vroom (1964), the Expectancy Theory asserts that an individual's motivation is influenced by their expectation of success and the value they place on the rewards associated with that success. Vroom propounds three key elements in this theory; Expectancy – the belief or anticipation that applied effort will lead to desired or expected performance; Instrumentality – the conviction that performance will be equitably rewarded; and Valence – the value that the individual places on the rewards for performance (Li S. , 2024; Muriuki, 2021). This theory's relevance to performance measurement argues that ordinarily, performance is based on the individual's conviction that their actions are making which is a significant contribution to the attainment of organisational goals. The performance is appropriately rewarded based on the value that the individual places on the reward. Individual performance contributes towards collective performance, which in turn contributed to the overall organisational performance (Bunteng, 2025; Muriuki, 2021). The theory's relevance to the current study is in that organisations need to equitably reward individual and team performance in order to motivate employees for best performances.

Equity Theory

The Equity Theory was developed by Adams (1963) and its focus is on creating a balance between an employee's contributions to organisational performance and the reward for their input. The theory asserts that the rewards that the employees get for their input are supposed to be equitable or perceived to be fair (Ryan, 2023). Ordinarily, employees tend to compare and contrast their input to output ratio to that of other employees within the organisation, or those holding similar positions in other competitor organisations, with a view to ascertain the principle of fairness on equal pay packages for the lateral work tasks and responsibilities. Any perceived inequities can lead to dissatisfaction, which may then translate into demotivation if it remains an unresolved labour practice. The result of such feeling of being inequitably rewarded may lead employees to change their work behaviour; adjusting their production

efforts to be commensurate with the obtaining rewards, or decide to seek alternative green pastures that award salary packages which restore equity (Parameswaran, 2022; Prieto, 2023; Zhou, 2022). The relationship and interdependence between rewards and performance, which is the focus of this theory becomes a very critical cog in performance measurement. It guides management in ensuring that good performance is equitably rewarded to ensure that it is sustained and making the desired contribution towards the achievement of organisational goals (Prieto, 2023; Zhou, 2022).

These theories provide valuable insights into the factors that influence employee performance and motivation. Understanding and applying these theories may help organizations to structure effective performance management systems that motivate employee engagement for organizational success.

Definition and Scope of Organisational Performance

Organisations set goals and objectives as part of their strategy formulation, and their performance is a measure of the extent to which they achieve these set goals and objectives over time (Chen, 2016). While there is no universally accepted definition of organizational performance, it refers to the actual output or results that an organization achieves in comparison to its set goals and objectives (Akpa, 2021; Migdadi, 2022; Nani, 2021). Many variables can be considered in defining and measuring organizational performance and, traditionally, these include financial performance, product-market performance and shareholder return. In recent times organisational performance has also been measured concerning other variables such as employee stewardship, knowledge management, corporate social responsibility and real estate investment (García-Sánchez, 2017). Kaplan and Norton (2010) have proposed the categorization of variables that can be standardized and measured in determining organisational performance. Through their Balanced Score Card (BSC), organisational performance can be measured through financial, customer service, business processes, and learning and growth objectives. The combination of what managers and their respective teams accomplish towards achieving these organisational objectives is what constitutes organisational performance.

Measurement of Organisational Performance

The measurement of organisational performance, which has generally been termed, “Performance Measurement (PM)” is a very critical aspect of strategic planning which guarantees organisational sustainability and growth. In strategic planning, organisations set objectives and Key Performance Indicators (KPIs), the latter being standards or yardsticks for measuring the extent to which organisational objectives have been achieved or otherwise.

Financial Measures of Performance

Financial measures are key indicators that are used to evaluate the financial health and performance of the firm. Financial performance of firms has largely been measured by four major variables; market valuation, profitability, productivity and return on equity (Laisasikorn, 2019; Yuniningsih, 2018). Real estate investment has in recent times been considered as another significant variable in measuring a firm’s financial performance (McAllister, 2020; Onyuma, 2020). In addition, variables such as revenue, liquidity, debt-to-equity ratio, and operating cash flow are also valuable metrics for evaluating a firm’s financial performance. The sections below discuss these measures for the financial performance of firms (Blessing, 2023; Nukala, Role of debt-to-equity ratio in project investment valuation, assessing risk and return in capital markets, 2021; Saleh, 2023).

Market Valuation

The market valuation is the systematic and analytical process of determining the price or value of an asset or firm at a given time, taking into account such factors as the capital structure composition, future earnings forecasts, the market value of its assets, and the firm's management, among other metrics. (Alshehhi, 2018; Tripathi, 2018). A firm's open market value is indicative of the extent to which it is performing well or not. Fundamental analysis is employed in market valuation of firms, while other different valuation models, for example, capital asset pricing model (CAPM), the dividend discount model (DDM), and economic value added (EVA) may be used (Alshehhi, 2018; Jordão, 2017; Tripathi, 2018; Vieira, 2019). The value of a firm can be measured in absolute terms, wherein we are considering its intrinsic value, or in relative terms, whereby we are comparing its value to the value of other firms. The higher the market value of a firm, the better it is perceived to be performing by its competitors.

Profitability

Profitability is the firm's capability to deploy its resources to generate revenue, which is in excess of its expenses (Yenni, 2021). A firm's profitability can be measured by computing a number of financial metrics, or profitability ratios, that are designed to evaluate the business' ability to generate earnings relative to its revenue, operating costs, balance sheet assets, and shareholders' equity over a specific period (Fatihudin, 2018; Nuhiu, 2017; Ozkan, 2017). Profitability ratios are broadly categorized into margin ratios and return ratios. Margin ratios, such as gross margin, operating margin, profit before tax margin, and net profit margin, measure a firm's capability to convert sales into profit, at different cost levels (Batchimeg, 2017; Durrah, 2016; Prentice, 2016). This is a performance metric that measures how well a firm is able to manage its production costs. Closely related is the net profit margin, a metric which measures the percentage of revenue retained after all business expenses have been paid, reflecting operational efficiency. Earnings before interest and tax is another profitability ratio, which evaluates a firm's profitability before paying interest and tax obligations (Nuridah, 2022). This is an important yardstick for measuring profitability internally, and for also comparing companies across industry, without regarding capital structure. Return ratios, for example, return on assets, return on equity, and return on investment, facilitate the measurement of the extent to which a firm generates returns for its shareholders (Ball, 2016; Martini, 2019; Naz, 2016). Profitability is closely associated with liquidity, the latter being commonly measured by liquidity ratios comprising current ratio, acid-test ratio and liquid ratio (Chokroborty, 2024).

Productivity

This refers to the firm's level of efficiency in converting production inputs, such as labour and capital, into outputs. It is a critical element of economic growth and competitiveness, which is utilized in measuring not only firm performance but also in making macro-economic assessments (Kurniawan, 2017; Lundgren, 2017; Müller, 2018). At a national level, productivity is measured as a ratio of the gross domestic product to national labour hours. At the firm level, it is computed by measuring the units of production relative to employee labour hours or by measuring the firm's net sales relative to employee labour hours (Bandiera, 2020; Bender, 2018; Tanaka, 2019). Productivity growth constitutes an important element for modelling a firm's productive capacity, facilitates the measurement of capacity utilisation,

determination of the firm's stage in the business cycle and becomes the basis for forecasting future economic growth (Jordão, 2013; Taouab, 2019; Xiu, 2017).

Return on Equity

The performance of the firm to an investor is measured by the return on equity, a ratio which measures the company's capability to earn returns on the shareholders' equity investments (Laisasikorn, 2019; Martini, 2019; Nuhiu, 2017). An increase in the company's asset base, coupled with the generation of more returns with higher margins translates into equity growth for stockholders (Ozkan, 2017; Tripathi, 2018; Yuniningsih, 2018). Various studies have evaluated the impact of a number of variables such as job satisfaction (Bakotić, 2016; Katou, 2017; Shiu, 2010), intellectual capital efficiency (Chowdhury, 2019; Yusuf, 2013; Uadiale, 2011), board structure (Kılıç, 2016; Yasser, 2017), capital structure (Salim, 2012; Siddik, 2017) and sustainability reporting (Domingues, 2017; Shad, 2018) on firm performance as measured by return on equity. The importance of the financial performance metric is that it reflects the effectiveness of management in optimizing equity for generating profit. Other authors (Iqbal, 2022; Manogna, 2021; Tasáryová, 2021) have, however, criticized the use of return on equity as a measure of firm performance as flawed citing a weak linear relationship between certain performance measures tested and the return on shareholders' equity.

Real Estate Investment

One of the indicators of good firm performance is its creation of capacity to invest in real estate. Acquisition of real estate has a number of financial benefits to the firm which include strengthening of the balance sheet, reduction in operational costs as rentals are eliminated from the firm's overheads and generation of rental income where the firm has excess space to let out to third parties (Abdul Mutalib, 2018). Generally, real estate is one of the few assets that appreciate in value over time, creating scope for an accumulation of revaluation reserves and growth of the shareholders' equity (Heywood, 2013; Onyuma, 2020; Zuñiga-Collazos, 2019). Other intangible benefits that accrue from real estate investment include good corporate image, goodwill, investor confidence, increased employee satisfaction, improved labour productivity, good market perception that has firm structures which are permanent. (Voordt, 2018; Waldron, 2018). Real estate investment has in recent times, invariably, become an important measure of an organisation's performance (McAllister, 2020; Sedeaq, 2018).

Revenue

This refers to the total income generated from the sale of goods and services prior to deducting any expenses (Cheah, 2023). This denotes the firm's scale of operation and its revenue generation capacity. High sales volumes signify demand for the firm's products and service, which translates to high revenue generation capacity, ultimately enhancing organisational performance (Balasubramanian, 2021; Cheah, 2023). On the contrary, low sales volumes may signify poor demand for the organisation's products and services, resulting in poor performance. Revenue generation is thus an important financial variable in measuring company performance.

Debt to Equity Ratio

Debt to equity ratio measures the proportion of the shareholders' equity in relation to debt used to finance a company's assets. This metric indicates financial leverage and the risk associated with it. A higher debt to equity ratio indicates that the business is relying more on borrowings than it is able to fund its assets from equity (Alwan, 2023). This poses a greater risk due to associated interest costs and the risk of default to lenders. The ability to manage the debt-to-equity ratio at optimal levels is a critical aspect of managing a firm's financial performance as there is need to balance the risk associated with debt, and the potential to generate more revenue and profit from debt-financed assets (Desmon, 2022; Nukala, 2021).

Operating Cash Flow

This is the cash that a firm generates from its operations, indicating the cash flow that it produces through regular business activities (Briones, 2024; Ding, 2022). This is a very important financial metric as it provides insights into the sustainability of earnings of a business performance. The more cash a business generates from its normal business activities, the more sustainable are its operations (Major, 2022; Nasimiyu, 2023). Financial performance measures are very important in assessing the firm's financial health, facilitating informed strategic decision making, and communicating the firm's performance to stakeholders. These financial metrics assist management, shareholders and other stakeholders to appreciate the firm's profitability, liquidity, and overall financial well-being, for sustainable organisational growth and development (Nasimiyu, 2023).

Non-Financial Measures of Performance

Non-financial performance measures are important when evaluating organisational aspects that may not necessarily have a direct relationship to financial outcomes though they are found critical for long term success. According to Kaplan and Norton (2010), non-financial measurement of a firm's performance can be achieved through analysis of three broad categories of variables; Customer Service, Customer Relationship Management, Internal Business Processes, and Organisational Learning Growth. Other authors (Galant, 2017) suggested that Corporate Social Responsibility (CSR), quality assurance metrics, operational efficiency, innovation rate, stakeholder engagement, employee engagement, employee turnover rate, brand awareness, market share and sustainability metrics may contribute as other variables usable for measuring the non-financial performance of a firm. These variables are discussed below.

Customer Service/ Customer Relationship Management

Customer relationship management is a qualitative variable for measuring firm performance that may translate into revenue and profitability growth if the company deploys its strategic capabilities to attract and retain customers (Rahimi, 2017; Soltani, 2018). In addition to attraction and retention of customers, strategic customer relationship management should translate into increased consumption of the firm's products and services by target customers hence, generating the desired revenues and profit margins (Jeong, 2014; Rodriguez, 2015; Wang, 2017). The quality of customer service and management of relationships can thus be an important variable in measuring organisational performance. Customers that are satisfied with the product quality and service are believed to communicate through repeat business transactions with evidence of referrals to customers to the firm, leading to growth in sales,

creating scope for greater profitability and sustainable organisational growth (Bhat, 2016; Navimipour, 2016; Osei, 2017; Valmohammadi, 2017). Through regular surveys, organisations are able to gather feedback on the extent to which their products and services are meeting or exceeding customer expectations. The performance of products and services in the market can be a reflection of the overall performance of the organisation.

Business Processes

Organisational performance can be measured through the efficiency, effectiveness and sustainability with which the firm delivers products or services to its customers (Gallotta, 2016; Khan, 2018; Maletič, 2016). Efficiency in the conversion of inputs into outputs, transaction completion time, delivery lead time, query resolution turnaround time, responsiveness to inquiries, and effectiveness of communication to customers are some of the business process variables against which organisational performance can be measured (Pradabwong, 2017; Schönig, 2016). Customers ordinarily need efficiency, convenience, security, and a conducive ambience for business, which are all facets of how an organisation delivers goods and services to its customers (Beneke, 2016; Kalinowski, 2016; Salehzadeh, 2017). Standardisation and certification of business processes were found to have a positive and significant effect on organisational performance, where the implementation thereof has been executed with sincerity and deliberate intent to improve the customer experience (Alsyounf, 2018; Kamble, 2020; Meduoye, 2019). In this digital age, some organisations have successfully deployed information communication technologies to improve business processes and create a sustainable competitive advantage (Shah, 2020).

Organisational Learning and Growth.

In this information and technological age, learning organisations are growing organisations (Beneke, 2016; Kuo, 2019; Tibbs, 2016; Zand, 2019). Organisations encourage and support their employees to engage in continuous professional development. That is done in terms of the acquisition and management of new knowledge, effective deployment of skills, competencies and demonstration of requisite attitudes. Beneficiaries of lifelong learning skills are bound to perform better than those that remain indifferent or those who stifle the learning and growth of employees (Ngoc-Tan, 2019; Owusu, 2017). Promotion and support of employee learning translate not only into the employees' growth and development but also into organisational growth and development (Zuñiga-Collazos, 2020). Empowered employees tend to be more proactive, innovative, continuously engage in research and development of new products and are prone to offer quality service to customers, with a better knowledge of the value of a customer to the organisation (Baird, 2018; Jyoti, 2017; Khalique, 2017; Meduoye, 2019). Learning and growth are critical not only for lower-level employees but also for middle and senior management, so that the learning culture permeates throughout the whole organisational structures in order to achieve performance (Akrofi, 2016; Jaoua, 2016).

Corporate Social Responsibility (CSR)

Organisations exist in and are supported by communities and it has become almost a natural requirement that these organisations give back to the communities that support their sustainable existence (Galant, 2017; Loosemore, 2017; Mahmoud, 2017; Moneva, 2020). Communities normally have needs, which range from schools, health facilities, road infrastructure, disadvantaged families, and are sometimes struck by disasters that need rehabilitation of destroyed infrastructure and/or relief in the form of food and other basic requirements.

Organisations that practice good corporate social responsibility are active in satisfying some of these community needs as and when extreme weather events arise (Blasi, 2018; Loosemore, 2016; Petrenko, 2016; Yuen, 2018).

Quality Assurance Metrics

This relates to interventions that an organisation may put in place to evaluate the quality of its products and services. Some organisations have gone to the extent of getting ISO Certification for their products and services, and commit themselves to continuous adherence to the ISO Standards (Kuwornu, 2023; Tambare, 2021). The quality of products can be evaluated through defect rates, customer complaints, product returns, and product call backs. Poor quality products and services negatively affects organisational performance as they may result in revenue decline, as customers shun the organisation's products and services in preference to competitors. On the other hand, high quality products and services attract more customers, leading to growth in the market share that enhances customer satisfaction concurrently contributing towards customer retention, reduction of costs associated with returns and reworks. This inadvertently contributes to improvement in organisational performance as growth in market share enhances revenue generation, which may translate to profitability and sustainable organisational growth (Antony, 2022; Tambare, 2021).

Operational Efficiency

Operational efficiency measures an organisation's capability to optimize resources in the production process. This could be measured through production cycle time, throughput, material and time wastage, and resource utilisation rates. Operational efficiency can lead to cost savings and improved profit margins, which contributes towards an improvement in organisational performance. On the contrary low operational efficiency may result in wastages that may translate to financial losses to the organisation (Chiarini, 2021; Obiki-Osafiele, 2024).

Innovation Rate

Innovation rate is an evaluation of the firm's capacity to develop new products, services or combinations of product and service offerings. The number of new products and/or services launched, investment in research and development, patents filed and innovations that are commercialized are some of the factors considered when evaluating an organisation's innovation rate (Nani, 2021; Soomro, 2021). Innovation is very important for creating sustainable competitive advantage, always developing new cutting-edge products and services that both satisfy and exceed the customers' dynamic needs. Low levels of innovation may result in product redundancy and obsolescence, loss of market share and decline in revenue and profitability. In a market that is dynamic with customers' needs evolving, innovation becomes a critical strategic measure of organisational performance (Naveed, 2022; Soomro, 2021).

Market Share

This represents the percentage or fraction of the total market that a particular firm controls, measured by the total sales volume in comparison to the total industry sales (Bhattacharya, 2022). Growth in market share signifies a firm's competitive strength, customer preference for its products and services, and is an indicator of the firm's performance in its chosen market or industry. A decline in the organisation's market share may indicate that there is waning demand for the firm's products and services, leading to poor organisational performance. Thus, tracking

and regularly monitoring and evaluating a firm's market share is a critical aspect of measuring organisational performance (Ghasemi, 2022; Nani, 2021).

Brand Awareness

Brand awareness entails an evaluation of the extent to which customers recognize and recall a firm's brand and prefer it over other competing brands (Bergkvist, 2022). Through regular surveys, monitoring social media metrics and web traffic analysis, organisations are able to evaluate their brand awareness among their customers. Strong brand awareness has the potential to drive customer loyalty, which may translate into growth in market share through continuous attraction and retention of customers, referrals and revenue growth. It is therefore important for organisations to constantly monitor their brand awareness and implement strategies that enhances their brand on the market (Abou-Shouk, 2021; Alamsyah, 2021).

Employee Engagement

Employee engagement is a non-financial performance measure which focuses on the evaluation of the sense of commitment and motivation among employees in their respective roles (Ghumiem, 2022). This is usually assessed through employee satisfaction surveys, retention rates, and the extent to which employees participate in organisational decision-making structures. Engaged employees are ordinarily more productive, innovative and positively contribute to the organisation's efforts to achieve its goals. On the contrary, low employee engagement may translate into ineffective productivity, which negatively impacts organisational performance. Keeping a pulse on employee engagement becomes a crucial strategic measure of organisational performance (Heslina, 2021; Susanto, 2023).

Employee Turnover Rate

The employee turnover rate is the rate at which employees the organization resign. High percentages of employee turnover communicate employee dissatisfaction and can lead to increased recruitment and induction costs (Michael, 2022). Organisations need to conduct exit interviews as and when employees resign, so that they may gather some of the reasons that force employees to leave employment. This may inform the firm's retention and motivation strategies (Yan, 2021). Employee satisfaction surveys are a proactive measure for gathering the levels of morale among employees, so that where there are indications of dissatisfaction, strategies may be implemented to address those and avert high staff turnover. Therefore, regular monitoring of the firm's employee turnover rate is an important intervention in organisational performance measurement (Li et al, 2022; Michael, 2022).

Stakeholder Engagement

Stakeholder engagement focuses on the interactions and relationships that a firm has with its various stakeholders which include customers, suppliers, regulators, investors, employees and communities. Some of the qualitative variables that would contribute to a firm's overall success and sustainability include reputation management, which may contribute to increased brand loyalty, if well-managed (Hristov et al, 2022; Khan, 2021). Effective stakeholder engagement assists in risk management through continuous engagement that creates rapport. The firm provides space to mitigate on stakeholder concerns, which may if not addressed pose certain

risks. Through stakeholder engagement, the firm can foster collaborative relationships that facilitates research, innovation and new product development (Khan, 2021; Mio, 2022).

Sustainability Metrics

These are metrics that measure an organisation's environmental and social impacts through such variables as carbon footprint, effective waste management, and social impact initiatives that are designed to give back to the communities that support the firm (Mio, 2022). The concept of sustainability is increasingly valued by customers, investors, and organisations perceived to be actively pursuing the sustainability agenda. Again, sustainability creates scope for improved organisational performance by way of growth in revenue and profitability which instills investor confidence leading to some injection of more capital into the business (Asiaei, 2021; Mio, 2022; Zharfpeykan, 2022).

Non-financial performance measures are, therefore essential for evaluating facets of organisational functionality that may not directly relate to financial outcomes, but are critical for sustainable growth and development (Alves, 2022; Bénet, 2022; Zarzycka, 2022). They are also important in complementing financial measures in evaluating a firm's performance as their inclusion provides a holistic view of the firm's well-being. Through effective management of these metrics, companies stand to enhance customer satisfaction, stakeholder support, employee engagement, and overall operation performance, that result with sustainable organisational growth and profitability.

The blended approach; integrating financial and non-financial metrics in performance measurement

Contemporary approaches to performance measurement now advocate the departure from the traditional dependence on financial metrics to measure organisational performance, adopting the integration of non-financial measures in performance evaluation. Blending financial and non-financial measures has the potential to significantly enhance strategic decision making, drive organisation performance, and foster sustainable growth (Abdullahi, 2021; Beneke, 2016; Heslina, 2021). Integrating both types of measures provides a robust and holistic understanding of the organisation's well-being, facilitating sound decision-making, based on comprehensive performance insights beyond short-term financial results (Beneke, 2016; Nuhui, 2017; Omran, 2019). One framework that has successfully blended financial and non-financial metrics in measuring performance is the Balanced Score Card, which has four broad dimensions; financial, customer relationship management, internal business processes and, learning and growth (Beneke, 2016; Meduoye, 2019; Ngoc-Tan, 2019). The blended approach improves resource allocation in the utilization of non-financial measures such as customer satisfaction and employee engagement. This guide investments in areas that drive long term value, rather than focusing on short term profitability (Nuhu, 2022; Oudgou, 2021; Prentice, 2016). In addition, organisations have scope to strengthen strategic focus as they are able to prioritize on interventions that enhance both financial outcomes and stakeholder value ensures that resources are allocated where greatest value can be generated.

Through the integration of financial and non-financial measures, risk management is enhanced. For example, non-financial indicators such as employee turnover and reputational damage may be good indicators for potential risks that prompts proactive corrective action and robust decision making, before the risks negatively impact financial performance (Bracci, 2022). The continuous evaluation of non-financial metrics such as customer feedback and market trends

enables firms to align their product and service offerings with customers' evolving needs and expectations which guarantees customer satisfaction and loyalty. Through monitoring non-financial market indicators, organisations can be agile in decision making, swift in adapting to market trends and customer preferences that create sustainable competitive advantage in the value chain (Navimipour, 2016; Rahimi, 2017).

Non-financial performance metrics which relate to employee engagement and job satisfaction may stimulate motivation, enhance employee retention, reduce turnover, and improve productivity. Organisations can also inculcate a culture of performance that align with employee goals and organisational strategic objectives., (Akpa, 2021; Akrofi, 2016; Hallencreutz, 2021).

Focusing on both financial and non-financial performance variables can lead to organisations creating long term value through the implementation of robust sustainable growth strategies that accommodate environmental, social and governance (ESG) factors. Continuous stakeholder engagement and transparent reporting of both financial and non-financial performance fosters trust and loyalty from the firm's key stakeholders, which is critical for sustainable growth and development (Hristov, 2022; Khan, 2021; Zharfpeykan, 2022). The measurement of non-financial metrics like innovation rate can inspire creativity among employees and lead to the development of new innovative products and services, continuous improvement of existing products and services, which all drive growth. The regular monitoring of performance indicators creates feedback loops that facilitate continuous improvement and adaptability (Mio, 2022; Zharfpeykan, 2022).

Overall, blending financial and non-financial performance measures, firms may enhance strategic decision making, increase productivity, improve overall performance, create competitive advantage, and foster sustainable growth. The integrated approach ensures that organisations are not only focused on short-term profitability but also on building long-term value for all stakeholders.

Empirical Evidence – Integrating Financial and Non-Financial metrics in Performance Measurement

Various organisations have successfully implemented the blended approach to performance measurement that integrates both financial and non-financial metrics. However, findings from some empirical studies (Abdullahi, etal, 2021; Abdallah and Alnamri, 2015; Nuhu, Baird and Su, 2022; Omran, etal, 2019; Oudgou, 2021) indicate that the integration of non-financial measures into organisational performance measurement systems is yet to be adopted in a nuanced manner in certain economies.

Nuhu, Baird and Su (2022) studied the integration of financial and non-financial performance measures in some Australian companies. Using data from 220 middle and lower level managers from these companies, the findings revealed direct positive correlation between diagnostic use of financial performance metrics and the interactive use of non-financial performance metrics with individual manager creativity. In addition, the findings also revealed that the relationship between these variables was mediated by distributive, interpersonal and informational fairness. These findings have significant implications for practice in demonstrating the importance of the interactive and diagnostic use of financial and non-financial performance measures as a mechanism through which individual manager's creativity can be enhanced.

In a study by Abdullahi, etal (2021) involving small to medium enterprises in the construction industry in Nigeria, findings from the analysis of data collected from one hundred and thirty

nine(139) owners, CEOs and senior managers revealed that there was significant awareness, among these level of leaders, on the importance of both financial and non-financial metrics in evaluating organisational performance. The widely used financial measures were return on investment, profitability, revenue growth and growth in assets, while product and service quality, customer satisfaction, employee competency, customer retention and product and service delivery performance were the most prevalent non-financial indicators. While there was a general appreciation of the integration of both financial and non-financial measures among these SME leaders, the level of the actual implementation was moderate, hence the recommendation for an improved implementation of the blended approach to enhance performance of the SMEs in the construction sector.

Omran, et al (2019) studied the relationship between internal performance evaluation and the capacity of external market participants in evaluating the effectiveness of management's quality strategy. The study involved one hundred and fifty six(156)participants drawn from Australian manufacturing companies, which linked the remuneration for executives to non-financial performance metrics. The findings revealed that, where executive compensation was linked to non-financial performance measures, financial performance, as measured by return on investment, had no significant direct association with the level of non-financial performance disclosures in the financial statements. The study, however, revealed that the origination of a firm's non-financial performance measures had an indirect but significant positive impact on financial performance through an organisation's implementation of quality-based strategy. The study further exposed that manufacturing firms that emphasised on quality strategy disclosed information on non-financial performance metrics in their annual reports., , The disclosure of non-financial performance measures positively impacted operating financial performance.

Oudgou (2021) studied the impact of financial and non-financial obstacles on product and process innovation in firms in the Middle East and North African (MENA) region. Through analysis of empirical data that was collected by the World Bank between 2013 and 2020 in ten (10) MENA countries.,The findings showed that women's participation in ownership, and investment in research and development had a positive impact on all types of innovations. The results further reflected that the variable measuring financial obstacles to innovation was endogenous and negatively affected all types of innovation. Study findings also revealed that the non-financial obstacles, which negatively affected innovation were business licencing ,award of permits, corruption, access to electricity, labour regulations, political instability, and competitor activity, by the informal sector.

In a study of multinational companies (MNCs) with subsidiaries in Saudi Arabia by Abdallah and Alnamri (2015) investigated the use of financial and non-financial performance measurement practices that included the use of the balanced scorecard (BSC)., The findings were that financial performance measures were more widely used as they were deemed to be common, and had more standardised measures which could be easily comprehended, implemented, and quantified. The study further revealed that the use of non-financial measures was very subdued owing to the fact that it was difficult to find objective measures for some of the variables. These findings imply that MNCs in the Middle East had not yet fully embraced the value of non-financial performance measure at the time of the study and as such, they needed some orientation on the value of using the blended approach.

Methodology

The study took a qualitative approach and followed a systematic literature review methodology informed by the Preferred Reporting Items for Systematic Reviews and Meta-Analysis

(PRISMA) guidelines to ensure a robust and transparent process (Page, 2021; Sarkis-Onofre, 2021). The review aimed at synthesizing extant literature on the strategic importance of performance measurement in business organisations, particularly focusing on the integration of financial and non-financial performance measures. The study focused on peer reviewed articles, conference papers, and relevant grey literature published from 2015 to 2025. Literature published before 2015 was only in relation to theories, models and frameworks that made reference to their origin. The inclusion criteria were as follows: studies that focused on performance measurement in business organisations, research on both financial and non-financial performance measures, and empirical studies, theoretical papers and case studies on the strategic importance of organisational performance measurement. The exclusion criteria included studies that were available in other languages other than English, articles that did not address the integration of financial and non-financial performance measures, and non-peer reviewed literature. A comprehensive literature search was conducted across several academic databases, including Scopus, Web of Science, Google Scholar and JSTOR. Search terms included combinations of key search words and phrases such as performance measurement, financial performance, non-financial performance, performance measurement models, performance measurement frameworks, performance measurement theories, strategic importance, and business organisations. The Boolean operators AND, OR, NOT were used to refine the search results. Data from the selected studies were extracted using a standardized form that captured author(s) and year of publication, study context and methodology, key findings related to financial and non-financial performance measures with implications for strategic management. The extracted data were synthesized thematically to identify patterns, gaps, and future research directions. The analysis focused on comparing and contrasting the findings across studies in order to derive insights into the strategic importance of blending financial and non-financial metrics in organisational performance measurement. Each study was evaluated for clarity of research questions, appropriateness of methodology, and relevance of findings to the topic under study. This structured approach provided a robust methodology for systematically reviewing relevant literature that ensured transparency and replicability (Fan, 2022; Gunnell, 2022; López-Nicolás, 2022).

Results / Discussion

An analysis of the literature reveals valuable insights on the strategic importance of performance measurement. Various themes emerged from the discourse on organisational performance measurement. A discovery of themes included organisational goal achievement, factors influencing organisational performance, organisational performance measurement, financial performance measures, non-financial performance measures, and the blended approach to performance measurement. These themes are briefly discussed below.

Organisational Goal Achievement

Organisational performance is primarily concerned with evaluating the extent to which an organisation has been able, or not, to achieve its set goals. While there is no universally accepted definition, performance measurement typically compares actual performance with established performance standards (Jayadatta, 2023; Shi, 2024; Shrestha, 2022). In terms of scope, goal achievement encompasses the achievement of both financial and non-financial goals, though traditionally, organisations have predominantly used financial performance metrics (Abdallah & Alnamri, 2015).

Factors influencing Organisational Performance

Organisational performance is influenced by factors that are both internal and external to the organisation. Internal factors that impinge on organisational performance include organisational culture, human/ financial resources, information technology and organisational structure (Akpa, 2021; Alsafadi, 2021; Bakotić, 2016; Kuo, 2019). Externally there are variables in the wake of competition, regulatory control, macroeconomic forces and socio-cultural factors on organisational performance (Müller, 2018; Tambare, 2021). A comprehensive understanding of the factors that influence organisational performance equips managers with requisite knowledge to formulate and implement strategic interventions that mitigate the negative impact of these factors, facilitates creation of sustainable competitive advantage, and enhances organisational performance (Abdallah, 2015; Akpa, 2021; Meduoye, 2019).

Organisational Performance Measurement

Central to strategic management is performance measurement, which involved the establishment of key result areas, and the key performance indicators (KPIs) that were used to measure the actual performance against set performance standards. These metrics could either be financial or non-financial in nature. Measuring performance is critical in evaluating organisational progress, or the absence thereof, in achieving the set goals and objectives (Gartner, 2022; Mtau, 2024). Where performance standards are being met, organisational leadership needs to ensure that there is reinforcement of the actions that are contributing towards goal achievement. On the contrary, where performance is below standard, there is need for formulating and implementing interventions that ensure performance improvement going forward (Mtau, 2024; Sultan, 2022).

Financial Performance Measures

Traditionally organisational performance has been measured in financial terms. Key financial metrics include productivity, revenue generation, profitability, return on equity, debt-to-equity ratio, market valuation, real estate investment, and operating cash flow. Productivity measures the firm's efficiency in converting inputs into output, which impacts overall performance. Profitability is evaluated through the computation of various ratios, also indicating the financial health of the organisation (Al-Busaidi, 2021; Orichom, 2021). Revenue generation denotes the total income from operations that indicate the demand for the firm's products and services, demonstrating its capacity to convert stock into cash. Market valuation reflects the firm's total value based on various financial metrics and models. Return on equity is another very important financial metric, particularly to shareholders as it reflects the firm's capacity to generate return on their invested capital (Rahiminezhad Galankashi, 2022). The other financial metric is the debt-to-equity ratio, which indicates the firm's financial leverage and associated risks. Real estate investment, an emerging financial metric, is another important measure of the firm's efficiency as it generates capacity to acquire fixed assets in the form of real estate. The operating cash flow also measures the organisation's financial health, providing insights into the sustainability of earnings (Nukala, 2021; Orichom, 2021). All these financial metrics are critical measures of an organisation's performance.

Non-Financial Performance Measures

The integration of non-financial measures in evaluating organisational performance is a contemporary approach, which brings robustness to performance measurement. Variables such as customer relationship management, internal business processes, organisational learning and growth, corporate social responsibility, quality assurance, and operational efficiency offer valuable qualitative insights on how the business is performing (Abdallah, 2015; Akrofi, 2016; Bhat, 2016; Beneke, 2016; Tambare, 2021). Other non-financial measures include innovation rate, brand awareness, market share, employee engagement, employee turnover, stakeholder engagement and sustainability. Customer relationship is important as a non-financial performance measure as it has a bearing on customer satisfaction, which leads to loyalty and revenue growth (Naveed, 2022; Obiki-Osafiele, 2024; Tambare, 2021). A firm's internal business processes is a valuable non-financial measure as the evaluation of these processes ensures efficiency and effectiveness in delivering products and services to the target market, impacting overall business performance. Learning organisations are growing. Continuous employee development correlates with improved organisational performance as empowered employees tend to perform better (Bhat, 2016; Beneke, 2016; Navimipour, 2016).

Corporate Social Responsibility (CSR) is increasingly being viewed as an important performance measure as active community engagement positively contributes to corporate image and brand building, which are also critical for organisational performance, as strong brand recognition can enhance customer loyalty and drive revenue growth (Abbas, 2020; Mahmoud, 2017; Reverte, 2016). Measuring a firm's market share is also important in evaluating performance as it indicates the firm's competitive position and general performance in the market (Ghasemi, 2022; Nani, 2021). Operational efficiency, which reflects resource optimisation is another valuable non-financial measure as it can lead to cost savings and improved profit margins. High product and service quality have great scope for enhancing customer satisfaction and retention, hence the utilisation of quality assurance metrics in evaluating performance is also critical (Chiarini, 2021; Obiki-Osafiele, 2024). Innovation rate, which is measured through research and development output, new product development and service delivery innovations, is critical for maintaining the firm's competitiveness and increasing capacity to meet customers' evolving needs (Naveed, 2022; Soomro, 2021). High levels of employee engagement contribute towards the enhancement of productivity and organisational success. The evaluation of employee turnover rate assists the firm in identifying causes for dissatisfaction and inform retention strategies. Employee engagement and employee turnover rate are, therefore, important non-financial performance measures (Heslina, 2021; Susanto, 2023). Stakeholder engagement ensures effective relationship management with the organisation's key stakeholders, which is bound to enhance sustainability and risk management. The measurement of social and environmental impacts has become important sustainability metrics, through which organisational performance can be measured (Asiaei, 2021; Hristov, 2022; Mio, 2022; Zharfpeykan, 2022).

Blended Approach to Performance Measurement

The integration of financial and non-financial metrics in measuring organisational performance provides a holistic view of the organisation's health. The blended approach enhances optimal resource allocation, improved productivity, effective risk management and long-term value creation productivity (Bracci, 2022; Laisasikorn, 2019; Yuniningsih, 2018). The latter is attained through emphasis on sustainable growth strategies, which incorporate environmental, social and governance (ESG) factors in performance measurement (Hristov, 2022; Mio, 2022;

Zharfpeykan, 2022). Through the effective integration of financial and non-financial metrics in organisational performance measurement, there is scope to create a robust and comprehensive information management system, which facilitates informed strategic decision making. The continuous concurrent monitoring of both metrics fosters innovation, adaptability and continuous improvement of the organisation's performance (Abdullahi, 2021; Meduoye, 2019; Sarigül, 2021; Zharfpeykan, 2022).

The findings suggest that high-performance organisations do not only excel in achieving financial outcomes but also foster a culture of endeavouring to achieve significant performance improvement in non-financial aspects such as innovation, continuous learning and growth, brand awareness and sustainability. These findings are corroborated with results from various empirical studies on the integration of financial and non-financial metrics in organisational performance measurement. Through the integration of both financial and non-financial measures in typical frameworks like the Balanced Scorecard, organisational leaders can gain a robust and holistic understanding of their firms' overall well-being. This blended approach facilitates informed strategic decision making that aligns the organisation's immediate financial goals and long-term sustainability. In addition, the integration of both financial and non-financial measures supports effective and efficient resource allocation, risk management and enhances adaptability in a dynamic business environment with rapidly changing market conditions. The emphasis on customer satisfaction, sustainability and stakeholder engagement, intertwined with social and environmental responsibility, further reinforces the value of long-term sustainability.

Overall, an analysis of the extant literature reveals that a comprehensive approach to measuring organisation performance, integrating both financial and non-financial metrics, is crucial for enhancing strategic decision-making, fostering sustainable growth, and creating long-term value for all stakeholders.

Conclusions

This study underscores the strategic importance of organisational performance measurement through a comprehensive lens that integrates both financial and non-financial performance metrics. As organisations embark on the strategic planning mission, formulating their key result areas, key performance indicators and attendant actions, the measurement of their performance gives a critical reflection of their ability or otherwise, to achieve these set targets and performance standards. While traditionally, performance has been measured through financial metrics such as revenue generation, return on equity, profitability, and market valuation (Cheah, 2023; Chokroborty, 2024; Laisasikorn, 2019; Nuridah, 2022), this research highlights the growing significance of integrating non-financial metrics such as customer satisfaction, employee engagement, corporate social responsibility, and sustainability in measuring organisational performance (Bhat, 2016; Kuo, 2019; Mio, 2022; Moneva, 2020; Zharfpeykan, 2022). In conclusion, the integration of financial and non-financial metrics in performance measurement represents a paradigm shift towards a more pragmatic approach in assessing organisational effectiveness and efficiency. Through embracing this comprehensive approach, business organisations can cultivate sustainable competitive advantage, ensure stakeholder alignment and the creating of lasting value for all parties involved.

Implications for Theory, Policy and Practice

The study gives a broader scope of the concept of organisational performance measurement, highlighting the need for more robust theoretical frameworks that encompass both financial and non-financial metrics, challenging the traditional definitions of organisational performance that focus more on financial metrics only. The integration of non-financial metrics calls for the incorporation of more diverse variables such as customer satisfaction, employee engagement, and sustainability metrics into the performance evaluation frameworks. Policy makers should encourage organisations to adopt integrated performance measurement systems, which blend both financial and non-financial performance metrics to foster long-term sustainability. There is need for regulatory frameworks that require organisations to disclose both financial and non-financial performance measures, ensuring transparency and accountability in their reporting. The adoption of comprehensive performance measurement systems, that integrate both financial and non-financial measures is a critical strategy for enhancing organisational performance as it gives a holistic view of their operational effectiveness and efficiency. Performance management practitioners should also prioritise employee engagement and satisfaction as vital elements of performance measurement, in recognition of their impact on employee retention, motivation, productivity and profitability. Organisations should also incorporate continuous feedback mechanisms through such interventions as surveys and performance evaluations that can help them adapt to changing market conditions and stakeholder expectations. The incorporation of sustainability metrics, such as the ESG principles, into performance evaluations assists organisations in aligning their operational practices with the sustainability agenda.

Recommendations for Further Studies

Future studies could continue exploring the various dynamics of these performance measures and their impact on organisational outcomes, particularly in diverse industry contexts. In addition, empirical studies could also be undertaken to evaluate the application of various frameworks that support the integration of financial and non-financial metrics in organisational performance measurement.

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Informal Communication Signals Among Drivers: A Behavioural and Technological Assessment of Road Safety in Zimbabwe

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Abstract

This study explores the informal communication signals among drivers in Zimbabwe, focusing on their behavioural patterns and compatibility with emerging vehicle-to-vehicle (V2V) technologies. Using a mixed-methods approach, the study surveyed 400 licensed drivers and conducted 30 in-depth interviews with traffic police officers, road safety experts, and experienced drivers. Field observations were also analysed thematically. Quantitative data were processed using SPSS to test hypotheses on demographic differences, safety outcomes, and signalling patterns. Chi-square tests and logistic regression revealed significant relationships between informal signal use and near-miss incidents, particularly among younger and peri-urban drivers. Qualitative findings confirmed that stress, cultural learning, and experiential factors drive signalling practices, which are largely incompatible with automated communication systems. Results highlight a disconnect between human behaviour and technological standardisation. The study recommends an integrated strategy combining culturally sensitive driver training and adaptive AI systems. These findings contribute to behavioural transport theory and offer practical insights for policy, driver education, and smart mobility design in low- and middle-income countries.

Keywords: Informal Driver Communication, Road Safety, Mixed Methods, Zimbabwe, Non-verbal Signalling

Introduction

Background: The Global Burden of Road Safety and Human Behavioural Factors

Road safety remains a critical public health issue globally, with over 1.3 million people dying annually due to road traffic accidents (World Health Organization, 2022). In African countries like Zimbabwe, the situation is worsened by rapid motorisation, poor road infrastructure, and limited law enforcement capacity. However, while infrastructure and regulatory issues have received significant attention, less focus has been placed on the behavioural dimensions of driver communication, particularly informal signalling, which is common in everyday driving scenarios (Adedeji et al., 2024; Mohamed et al., 2024).

In contexts where formal road signs, traffic lights, and enforcement systems are either weak or inconsistently available, drivers develop and rely on informal ways to communicate. These include hand gestures, flashing headlights, short horn beeps, and subtle movements like slowing down or shifting slightly towards one side. These are intended to signal intentions, warn other road users, or request cooperation where there are no official signals (Zhou et al., 2023; Dong et al., 2024). While such types of behaviour can help drivers cope with chaotic traffic conditions, they have a tendency to be imprecise, inconsistent, and are not taught in formal driver education systems, leading to miscommunication, confusion, and accidents (Liu et al., 2023; Zhang et al., 2023).

Furthermore, informal signals will be subject to peer education, cultural beliefs, driver's experience, stress reaction, and driving record. Their interpretation will vary with drivers from different geographical locations, driving records, or age. For instance, a flash of headlights for a short period may indicate a warning in a particular city but a right-of-way indication elsewhere. This heterogeneity presents a key challenge, especially with the increasing urbanisation of Zimbabwe and the onset of vehicle-to-vehicle (V2V) and AI technologies beginning to infiltrate the transport network. Both of these technologies are dependent on interoperable communication standards and may therefore find it difficult to interact with the dynamic and context-dependent character of informal signalling (Gould & Brown, 2023; Schumann et al., 2023).

Despite the ubiquity of informal driver communication and its potential effect, it remains inadequately captured in national road statistics, under-theorised by the African academic literature, and overlooked in policy and drivers' training curricula (Chibaro & Foya, 2024; Suryana et al., 2024). As a result, current Zimbabwean road safety models fail to account for a significant behavioural dimension of road users' communication and on-the-spot decision-making. The present study, hence, aims to fill this gap.

Research Gap: Under-examined Informal Signalling in African Contexts

Informal driver communication is, in most instances, seen as an adaptation tactic to infrastructural and systemic failings (Mohamed et al., 2024). However, current researches in Zimbabwe, South Africa, and other Sub-Saharan countries recognise that such conduct, though seemingly cooperative, promotes misinterpretation and unsafe driving actions (Adedeji et al., 2024; Chibaro & Fowa, 2024). Researchers have increasingly looked into cultural norms and stressors' effects on informal driver signals as situational awareness mechanisms of possible miscommunication causes. For instance, Dong et al. (2024) emphasise that cultural variability can significantly alter

the manner in which drivers receive non-verbal signals and behave differently in response. Liu et al. (2023) demonstrate how stress-susceptible and sensation-seeking drivers have a higher probability of using ambiguous informal signs, which augments the prospects for dangerous interactions. Similarly, Zhang et al. (2023) discovered that a significant percentage of Chinese urban traffic accidents trace their origin to misinterpreted informal cues and exhibit how psychological and situational stress could distort the communicative function of such signs. The dual nature of informal signalling, protective yet potentially perilous, raises critical questions about its role in behaviour formation and accident causation.

Objectives of the study: Investigating Informal Driver Communication in Zimbabwe

Despite its ubiquity, informal signalling remains on the periphery of policy reports and driver education programs, particularly in African contexts in which formal systems fail to recognise or learn from local practices (Adedeji et al., 2024). Furthermore, the lack of harmonisation between the informal and formal signalling systems has become increasingly relevant with the introduction of vehicle-to-vehicle (V2V) communication technologies. While these technologies hold promise for improving road safety in high-income countries, they rely on standardised communication protocols that may clash with context-specific informal behaviours (Gould & Brown, 2022).

Against this background, the study seeks to investigate the nature, prevalence, and implications of informal driver communication signals in Zimbabwe, thereby addressing a critical gap in both academic literature and practical road safety interventions. The specific objectives are to:

1. Classify the dominant types of informal communication signals used by drivers in Zimbabwe.
2. Examine the relationship between informal signalling practices and road safety outcomes across different driver groups.
3. Evaluate the compatibility of informal driver communication with emerging vehicle-to-vehicle technologies.

Literature Review

The Role of Informal Communication in Road Safety

Informal communication among drivers, such as headlight flashing, horn blowing, and hand signals, plays a pivotal role in ensuring road safety, especially in contexts where formal traffic systems are underdeveloped or irregularly enforced. In South Africa, Adedeji et al. (2024) noted that 81% of road users use informal cues such as headlight flashing to signal intent, but different interpretations of such signals can lead to potential misunderstandings and conflicts on the road. Chibaro and Foya (2024) observed that in Zimbabwe, gestures and non-verbal signals are widely used to manage traffic, at times as a replacement for inadequate infrastructure and signage.

Globally, the importance of these non-formal signals is profoundly diverse. For example, flashing lights in Russia may either be a warning or of disapproval, while the same signal in Italy expresses thankfulness or a greeting (Dong et al., 2024). Moreover, the universality of their perception increases the level of accidents. Zhang et al. (2023) explored and confirmed that 15% of Chinese city accidents were caused by the misunderstanding of non-verbal communication. In African

nations where informal communication is most prevalent, the level of miscommunication is particularly risky for road usage.

Behavioural and Psychological Frameworks

Psychology theories provide an adequate explanation regarding how motorists comprehend and utilise non-formal communication while driving. Theory of Planned Behaviour (TPB) elucidates that the behaviour of an individual is driven by behavioural intentions, which are induced by attitudes, subjective norms, and perceived behavioural control of the behaviour (Ajzen, 1991). In driving, TPB assumes that the application of informal signals by a driver is an outcome of their attitude toward whether the signal is helpful, social norms, and their perceived control over effectively utilising the signals. TPB has since been elaborated further in recent research to include other psychological concepts such as risk perception and sensation seeking.

For example, Liu et al. (2023) integrated TPB with sensation-seeking theory and concluded that highly sensation-seeking drivers will be more prone to exhibit riskier driving behaviour, i.e., to utilise informal signals. Similarly, the Vulnerability-Stress-Adaptation (VSA) model (Langer et al., 2008) implies that psychologically stressed drivers will tend to adjust their communication style, and informal signals will become unpredictable and riskier. Furthermore, risk compensation theory also anticipates that drivers will behave in self-initiated ways that align with perceptions of safety. For example, drivers take greater risks as they believe their informal signals make their intentions clear and other drivers will be able to respond accordingly (Elvik & Vaa, 2004). These theoretical considerations highlight the significance of underlying psychological dynamics underpinning off-duty communication on highways, particularly in cases of poor formal regulation.

Technology and Informal Signalling: Conflict or Convergence?

The use of vehicle-to-vehicle (V2V) communication and automated car technology brings new dynamics to car communication. Autonomous technologies are based on standardised protocols to read and respond to signals, a format that can be at odds with the multi-layered and context-dependent nature of spontaneous human communication. Schumann et al. (2023) argue that most automated systems lack the cognitive flexibility to decipher causal clues in adaptive road environments. Similarly, Suryana et al. (2024) highlight the failure of autonomous cars to recognise unstandardised driver behaviour, warning that this mismatch will lead to disastrous safety malfunctions in unstructured road infrastructure. For instance, autonomous vehicles might be given a flash of a headlight by a driver as something open to more than one interpretation based on circumstances (Lee & See, 2021; Liao et al., 2023; Frerichs, 2016).

Kettle et al. (2023) maintain that machine-like communication attributes should be integrated into autonomous systems to develop situation awareness and trust. Their study illustrates how the integration of adaptive communication methods, i.e., augmented reality visualisations and driver assistance systems, has the potential to bridge the gap between the interpretability of machines and human informal cues. In addition, the incorporation of cognitive models into autonomous vehicles can improve the detection of informal signs. Schumann et al. (2023) inferred a cognitive-theory-

based model to forecast human driving behaviour and demonstrated that such models can enable automated vehicles to focus more on human drivers' informal signals.

Cultural and Regional Variations

Cultural norms and regional practices significantly shape informal road communication. In Zimbabwe, to drive in traffic, drivers employ hand signals and horn honking, and it is a common practice deeply rooted in indigenous driving culture (Chibaro & Foya, 2024). In India and the Philippines, flashing and horn honking carry culturally distinct meanings, reflecting wider variation in non-verbal communication (Zhou et al., 2023).

Cross-cultural studies highlight the importance of grasping these differences in terms of improving road safety. For example, Zhou et al. (2023) investigated country differences in implicit driving cues and reported substantial variation in the use and understanding of informal signals. The implications are that interventions for improving road safety must be contextualised within the specific cultural environment to be impactful. Also, the lack of instruction on informal communication in driving schools exacerbates the problem. In South Africa, although the K53 driver's manual is packed with information on formal communication, it lacks information on informal signs, thus inconsistencies in road behaviour (Adedeji et al., 2024).

Gaps and Hypotheses

Despite the universality of informal signalling in driving, there is a notable lack of comprehensive studies addressing the road safety implications generally and particularly in African settings. While existing researches often focus on specific fields or isolated aspects of informal signalling, there is still insufficient general knowledge on their implications for broader road safety outcomes.

To address this gap, this study proposes the following hypotheses:

H1: There are statistically significant differences in the types of informal communication signals used by drivers based on age, driving experience, and location.

H2: Increased frequency of informal signalling is positively associated with the incidence of near-miss road safety events among Zimbabwean drivers.

H3: Informal driver communication practices show low compatibility with standardised vehicle-to-vehicle communication protocols.

Methodology

The study utilised a mixed-methods approach, which combines the qualitative and the quantitative methods to gather extensive information on informal driver communication and its contribution to improving road safety in Zimbabwe. The mixed-methods design best suits the study of complex social phenomena because it facilitates data triangulation and verification of findings from multiple sources of data (Creswell & Clark, 2023). Through combining qualitative insight with quantitative information, the study sought to determine the tacit behaviour and attitudes of drivers, as well as quantitative patterns of road safety accidents. Fetter et al. (2021) emphasise the value of mixed-methods design in health and social sciences because it facilitates a more detailed exploration by integrating quantitative data with contextual information.

Study Area and Participants

The research was conducted in Zimbabwe, covering major urban centres such as Harare and Bulawayo, peri-urban and rural communities, to provide a spectrum of diverse driving environments. Roads in Zimbabwe are approximately 88,100 kilometres long and have varying infrastructural and maintenance standards (Zimbabwe National Road Administration, 2023). Urbanisation and expansion in the number of motor vehicles have led to increased concerns about road safety and driver behaviour.

The target population for this study comprises licensed drivers, traffic police officers, and road safety experts operating within Zimbabwe's major urban centres (Harare and Bulawayo), peri-urban areas, and select rural districts. According to the Zimbabwe National Road Administration (ZINARA, 2023), there are approximately 1.2 million registered drivers across the country, with an estimated 450,000 based in the study regions. The number of traffic police officers assigned to urban and peri-urban transport departments is approximately 3,500, while road safety experts and regulatory officials are drawn from institutions such as the Traffic Safety Council of Zimbabwe (TSCZ), urban transport planners, and academia.

A stratified random sampling technique was employed for the quantitative component, focusing exclusively on licensed drivers. The total sample size was 400 drivers, determined using Cochran's formula to ensure statistical representativeness. Stratification was based on age group, gender, driving experience, and geographic location (urban vs. peri-urban), allowing the analysis of informal signalling patterns across key demographic groups.

For the qualitative component, 30 purposively selected stakeholders participated in in-depth interviews. These included: - 10 traffic police officers, - 10 road safety experts (from the Traffic Safety Council of Zimbabwe and local universities), and - 10 experienced drivers selected based on their exposure to diverse traffic environments. These stakeholders were selected to provide rich, contextual insights on how informal communication signals are used, interpreted, and regulated in Zimbabwe.

Data Collection Methods

The study utilises a variety of data collection methods for robust and rigorous analysis:

Field Observations: Systematic observations at major intersections and busy areas were conducted to capture instances of informal communication, such as hand signals, flashing headlamps, and horn honking.

Surveys: Structured questionnaires were administered to collect quantitative data on the frequency, context, and perceived effectiveness of informal communication methods among drivers. The questionnaires were personally distributed at strategic transport nodes such as bus ranks, junctions, and taxi parks in Harare, Bulawayo, and the surrounding peri-urban areas. Data were gathered over the course of three weeks, and questionnaires were disseminated by trained enumerators on an intercept face-to-face basis, an approach shown to be effective in gathering valid transport behaviour data in middle- and low-income contexts (Mohamed et al., 2024; Zhou et al., 2023). All the participants were screened for eligibility before the administration of the

surveys by ensuring that they had a valid Zimbabwean driver's licence. The respondents were then told about the study purpose, assured of confidentiality, and provided with informed consent forms. Enumerators were also available to clarify survey questions and standardise responses, minimise data entry mistakes, and address comprehension challenges. This method is promoted by recent field surveys of driver attitude in Africa (Adedeji et al., 2024; Chibaro & Foya, 2024).

Questionnaire items were developed with the assistance of extant behavioural road safety research and pilot-tested on a small sample of drivers before being fully administered. The survey instrument covered four general areas: types of informal signals used, contextual conditions (e.g., congestion, overtaking), how often they were used, and how effective they were perceived to be in accident or conflict avoidance. This strategy enabled the researchers to collect both behavioural and perceptual data required to study road safety implications in a culturally embedded signalling space (Liu et al., 2023; Zhang et al., 2023).

Semi-structured interviews were conducted with a purposive sample of 30 participants comprising road safety experts, traffic police officers, and experienced drivers to gather rich qualitative data on why, how, and with what effects informal signalling is occurring in Zimbabwe. Data gathering was conducted within four weeks in 2024 and was done face-to-face in a location convenient to the informants. Interviews lasted on average between 30 and 45 minutes. Participants were sampled through purposive sampling, which is particularly strong in qualitative transport research when attempting to gather expert and experience-based opinions (Liu et al., 2023; Mohamed et al., 2024). The sample included: - 10 frontline enforcement traffic police officers, - 10 road safety officials from organizations such as the Traffic Safety Council of Zimbabwe (TSCZ), and - 10 long-distance and commuter drivers with a minimum of 10 years' driving experience.

All interviews used a semi-structured guide with uniformity between key topics (e.g., frequency, meaning, and control of informal signals), but with the scope for variation for participants to give examples from personal experience and setting (Dong et al., 2024). Interviews were conducted in English, Shona, or Ndebele, subject preference, and were tape-recorded with consent. Field notes were also gathered to capture non-verbal data and set context. Following data collection, the interview recordings were transcribed verbatim and imported into NVivo software for thematic analysis, which enabled systematic coding and identification of recurring patterns (Braun & Clarke, 2023) and was widely applied in qualitative transport behaviour studies (Zhou et al., 2023).

Accident Report Analysis: Traffic accident reports were analysed within the past five years to determine patterns and correlations between accident occurrence and informal communication behaviour. The blending of these methodologies enhances the validity of the results and yields a more sensitive understanding of the research problem (Creswell & Creswell, 2022).

Data Analysis

Quantitative data collected through surveys were analysed using statistical software tools such as SPSS (v26) and R (v4.3). Descriptive statistics, including frequency distributions and cross-tabulations, were used to summarise the types and frequency of informal communication signals. Inferential statistical techniques, including chi-square tests and binary logistic regression, were applied to examine relationships between demographic variables (e.g., age, experience) and self-

reported safety outcomes such as near-miss incidents. This is in accordance with best practice in transport behaviour analysis using large-scale driver surveys (Zhou et al., 2023; Liu et al., 2023). For qualitative data, thematic analysis was conducted using NVivo 14 software. Field observation notes and interview transcripts were first transcribed and imported into the software. Deductive and inductive coding were used to identify repetitive patterns, themes, and categories of non-formal signalling behaviour. Repetitive themes like perception of safety, cultural learning, and communication breakdowns were worked through iteratively, and cross-data sources were checked (Braun & Clarke, 2023).

Specifically, field observation reports served as independent qualitative data sources. Observation checklists and descriptive remarks, collected at intersections, roundabouts, and taxi stands, were coded independently of interview data for richness of context. Field observation reports had naturalistic descriptions of actual-time informal signalling behaviour, including spontaneous gestures, horn use, and driver-to-driver communication. Patterns found between sites were triangulated with interview responses to enhance thematic validity and confirm behaviour consistencies across different traffic conditions (Mohamed et al., 2024; Dong et al., 2024). By integrating several qualitative and quantitative sources of data, the analysis offered an integrated technological and behavioural analysis of the role of informal signalling in road safety in Zimbabwe.

Ethical Considerations

The research received ethical clearance from the Zimbabwe Medical Research Council. There was adequate informed consent gathered from all respondents, and anonymity and confidentiality were provided. Participants were informed of their right to drop out of the study at any time without penalty. The research took the ethical guidelines for researching human participants as outlined in the Declaration of Helsinki and local regulatory bodies (Man & Schaefer, 2023; Braun & Larke, 2023).

Results

Response Rate

For the quantitative component of the study, 500 standardised questionnaires were distributed to Harare, Bulawayo, and selected peri-urban locations' licensed vehicle drivers. Of these, 400 completed and usable questionnaires were returned, and the response rate was 80%. The questionnaires were distributed face-to-face at transportation hubs like taxi ranks, bus stops, and intersections.

This response rate is typical for individuals working on low- and middle-income country transport behaviour research, which enables one to utilise a 70–80% response rate for statistical analysis and generalisation (Mohamed et al., 2024; Zhou et al., 2023). The high response rate was facilitated by the employment of trained enumerators, face-to-face interviewing, and convenient locations for administering surveys.

For the qualitative component, 30 in-depth interviews were planned and successfully achieved with a 100% response rate. Participants included 10 traffic police officers, 10 road safety experts,

and 10 experienced drivers. The interviews were made possible with pre-planning and purposive recruitment, making sure they achieved 100% participation. Interviews were conducted in secure and accessible venues such as municipal offices, driver resting areas, and safety council offices. The excellent response rates in both data streams enhanced the validity and reliability of results through demographic variety and fair representation across groups of stakeholders. Dual-method response also provided an excellent foundation for effective data triangulation, consistent with mixed-method best practice (Liu et al., 2023; Braun & Clarke, 2023).

Table 1: Participant Demographics

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	230	57.5%
	Female	170	42.5%
Age Group	18–25	80	20.0%
	26–35	120	30.0%
	36–50	130	32.5%
	51 and above	70	17.5%
Driving Experience	< 5 years	95	23.8%
	5–10 years	140	35.0%
	10–20 years	110	27.5%
	> 20 years	55	13.8%

Descriptive Findings

Survey data and field observation revealed many common types of informal communication used by Zimbabwean drivers. These included hand signals (e.g., hand waving or finger signals), flashing, short horn taps, and subtle vehicle movements like minor deviation to indicate passing intention. Among the 400 surveyed drivers, 71% admitted to using at least one informal signal quite often, where formal signals were not sufficient or visible.

Hand signals were utilised most often within city traffic or at uncontrolled intersections. Headlight flashing was typically employed on highways or rural roads, generally to indicate police roadblocks or checkpoints. Horn beeps, short toots, or long horns were used to show impatience, caution pedestrians, or request right-of-way. Usage was highest among male drivers aged 25–40 and among those driving in Harare and Bulawayo.

Table 2: Informal Signal Types, Contexts, and Frequencies

Signal Type	Common Meaning	Usage Context	Frequency Reported (%)
Hand Gestures	“Proceed” or “Wait”	Intersections, overtaking	68%
Headlight Flashing	Warning / Permission to go	Highways, night driving	52%
Horn Beeping (short)	Alert or acknowledgment	Urban traffic	73%
Horn Beeping (long)	Aggression or urgency	Congestion, emergencies	39%

Signal Type	Common Meaning	Usage Context	Frequency Reported (%)
Vehicle Positioning	Intention to yield or overtake	Two-lane roads	48%

Thematic Analysis

Thematic analysis of thirty in-depth interviews revealed five interconnected themes: safety perceptions, stress responses, miscommunication, cultural norms, and adaptive learning. These themes illustrate the practical, emotional, and social dimensions of informal driver communication in Zimbabwe and are supported by rich, first-hand narratives from participants.

Safety Perceptions

Informal communication among drivers is a vital safety mechanism while driving. In situations where there is a shortage of formal signals or they are inadequate, the participants consistently highlighted the safety role played by informal signals. As one driver elaborates, *"When I flash my headlights, I'm warning the driver in front of the hazard. It's faster than waiting for them to see a road sign."* The same sense of urgency was echoed by another interviewee who stated, *"Tapping my hand to warn a car behind me to stop is sometimes the only thing that works."* A third interviewee pointed out the inadequacy of official signals in high-reactive environments: *"In traffic congestion, the use of indicators can be too slow. I just wave my hand so the other driver understands immediately."* These comments attest that informal communication is not merely an addition but, at times, a necessary substitute for official communication in hazardous situations.

Stress Responses

Informal signalling frequently emerges as a spontaneous reaction for drivers under high-stress situations. Instead of using cautious, rule-governed communication, most informal gestures are affective displays in times of stress. *"When somebody cuts me off, my reaction is to honk, not to think,"* remarked one driver. Another said, *"It's stressful during rush hours. You just start flashing your lights or honking out of habit."* A third participant described the sensory overload of peak-hour driving: *"Friday nights, everybody's in a hurry. Signals are loud and quick horns and flashing lights; it's like driving through noise at high speed."* These accounts draw attention to the psychological stress undergone by drivers in panicked contexts and reveal how informal signals are both employed as communicative devices and emotional releases.

Miscommunication

The informality of driver signals can generate very substantial miscommunication on the road. Respondents gave several examples in which the ambiguity of informal signals resulted in near-accidents or confusion. One driver admitted, *"I once flashed my lights to let someone pass, but he thought I was signalling him to stop. We almost collided."* The lack of conventional meanings invites dangerous confusion, as one participant clarified: *"You don't know what a short beep means to each driver. To me, it's 'thanks.' To someone else, it's 'get out of the way.'"* Others noted that the

origin of this is that there is no formal training: *"There's no instruction on this. So, we all do our own thing. It works until it doesn't."*

Cultural Norms

Informal communication among drivers is influenced by cultural norms. Not only does this form of communication function, but it is also culturally ingrained. One respondent remarked, *"Here in Zimbabwe, hand signals are common sense. It's how our fathers drove."* Regional differences further complicate understanding: *"Flashing lights mean different things in different areas. In Harare, it means 'I'm going first.' In Masvingo, it can mean 'slow down.'"* Participants pointed out that cultural reliance on informal norms often overrides official procedures, especially when institutional trust is low: *"We don't wait for traffic lights to work. If they're not functioning, drivers just use their own judgment and signals."*

Adaptive Learning

Adaptive learning is the process by which drivers learn informal communication skills through experiential learning and not formal learning. As one other driver explained, *"No one ever taught me to flash headlights. I picked it up by copying other drivers when I was learning."* Others mentioned the implicit nature of this learning process: *"You learn by the process of time. The more you drive, the more you learn the 'hidden language' of the road."* One of the actual-world incentives arose from participant observation: *"Sometimes your car indicator is not working. So, you pick up other forms of quick communication."* This illustrates the ingenuity of drivers in managing faulty infrastructure or vehicle capacity through socialised practice.

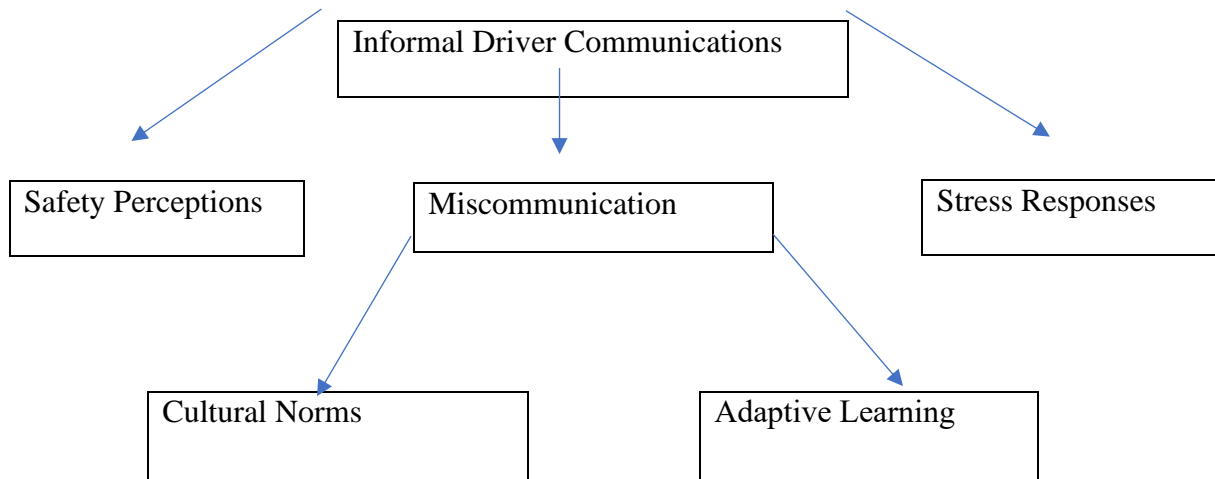


Figure 1: Hematic Map of Informal Driver Communication

Source: Authors (2025)

Quantitative Associations (Summary)

Though qualitative depth was the priority in this research, supporting survey data illuminated broader trends that are in agreement with the themes. Informal signal use was discovered to be much greater in city drivers, thanks to dense traffic and the need for instant communication. Cross-tabulation analysis revealed that less experienced drivers were more likely to misinterpret informal cues, which reported a greater rate of near-miss incidents. Drivers who depended more on horn beeps as a primary cue reported more near-miss incidents that nearly resulted in accidents. These findings lend empirical credence to qualitative observations of participants, reinforcing the position that while informal communication is a deeply rooted cultural survival strategy, it also creates systemic vulnerabilities when left unregulated and misunderstood.

Hypothesis Testing Results

This section presents the results of statistical tests conducted to assess the research hypotheses outlined earlier. Hypotheses were tested using SPSS (v26), employing chi-square tests for categorical variables and binary logistic regression where applicable.

H1: There are statistically significant differences in the types of informal communication signals used by drivers based on age, driving experience, and location.

A chi-square test of independence was conducted to examine the relationship between driver age group and the use of hand gestures, headlight flashing, and horn beeping.

- Hand gestures were significantly associated with age group: $\chi^2 (3, N = 400) = 14.82, p = 0.002$
- Horn use showed a significant difference by driving experience: $\chi^2 (3, N = 400) = 18.44, p = 0.001$
- Headlight flashing was more common in peri-urban drivers than urban: $\chi^2 (1, N = 400) = 6.75, p = 0.009$

These findings support H1, indicating that informal signal usage differs across demographic subgroups.

H2: Increased frequency of informal signalling is positively associated with the incidence of near-miss road safety events among Zimbabwean drivers.

A binary logistic regression was conducted with self-reported near-miss incidents as the dependent variable (Yes = 1, No = 0) and frequency of horn use, headlight flashing, and hand gestures as predictors.

- Frequent horn use (>5 times/day) significantly increased the odds of near-misses: OR = 2.42, 95% CI [1.52, 3.87], $p < 0.001$
- Headlight flashing was moderately associated with near-misses: OR = 1.61, 95% CI [1.03, 2.54], $p = 0.037$
- Hand gestures showed no statistically significant effect: $p = 0.087$

These results partially support H2, particularly highlighting horn use as a predictor of risky encounters on the road.

H3: Informal driver communication practices show low compatibility with standardised vehicle-to-vehicle communication protocols.

While this hypothesis was assessed qualitatively, drivers and road safety experts overwhelmingly expressed scepticism about the compatibility of informal gestures with V2V systems. However, a supplementary survey item asked:

“Do you think current informal signals (e.g., hand waves, headlight flashes) could be recognised by smart vehicles or autonomous systems?”

- Only 16% (n = 64) responded “Yes”
- 58% (n = 232) said “No”
- 26% (n = 104) were “Unsure”

A one-sample chi-square goodness-of-fit test showed a significant skew in distribution: $\chi^2 (2, N = 400) = 129.36, p < 0.001$

This supports H3, indicating that most drivers perceive a disconnect between informal signals and technological systems, reinforcing concerns about system-human integration.

Table 3: Summary of Hypothesis Testing

Hypothesis	Test Used	p-value	Result
H1	Chi-square	$p < 0.01$	Supported
H2	Logistic regression	$p < 0.001$ (horn use)	Partially supported
H3	Chi-square	$p < 0.001$	Supported

Table 4: Signal Use and Self-Reported Accident Frequency

Signal Use Type	Low Use (0–2 times/day)	High Use (>5 times/day)	Near-Miss Reports (%)
Hand Gestures	20%	38%	28%
Headlight Flashing	12%	26%	19%
Horn Beeping (general)	30%	60%	42%

Source: Authors (2025)

Discussion

Interpretation of Key Findings

The results of this study confirm the behavioural and technological complexity of informal communication among drivers in Zimbabwe. Quantitative analysis revealed that informal signal usage significantly varies across driver demographics, particularly age, experience, and location. For instance, younger and less experienced drivers were more likely to rely on gestures and horn beeps, while peri-urban drivers frequently employed headlight flashing. This supports Hypothesis 1 (H1), which proposed statistically significant differences in informal signalling practices based on socio-demographic characteristics. These findings align with Zhou et al. (2023) and Dong et al. (2024), who noted that age, regional driving culture, and accumulated experience influence non-verbal driver communication patterns. Similarly, Chikodzi (2023) observed that informal occupational behaviours among transport workers in Southern Africa often vary by generational and locational subcultures, making them difficult to regulate uniformly.

Furthermore, the study established a statistically significant association between the frequency of informal signalling, particularly horn use, and the incidence of near-miss events, as confirmed by logistic regression analysis. Drivers who utilised horns more than five times per day had a 2.42-times higher likelihood of experiencing near-misses ($p < 0.001$). The finding is partly in support of Hypothesis 2 (H2) and is consistent with earlier research by Adedeji et al. (2024) and Zhang et al. (2023), who argued that informal signals are adaptive, but their ambiguity creates dangerous misinterpretation. Kumar and Wamala (2023) also support this by revealing that horn utilisation in urban cities of East Africa often serves as a substitute for deteriorated formal infrastructure, but could escalate rather than reduce conflict. Likewise, Kim and Heerden (2024) demonstrated that excessive reliance on horn signals among high-capacity urban corridors in South Africa led to higher tension, poor driver judgment, and rising incident frequency. Interestingly, gestures of the hand, while widespread, failed to consistently forecast near-miss incidents ($p = 0.087$), suggesting risk variance by type of informal signal used. This complements Frerichs (2016), who explained the way in which some non-verbal signs are more interpretable and low-risk in that they are part of local driver norms, while others, e.g., horn beeps, are meaning non-standardised and open to a range of interpretations.

Qualitative research outcomes show increased sensitivity to the adaptive and psychological underpinnings of informal signalling. Interview narratives found themes including signalling under stress, cultural embeddedness, and learning through experience. These support findings presented by Liu et al. (2023) on how sensation-seeking and risk-perception variables underpin informal driving conduct in poorly regulated environments. Additionally, Kim and Mwale (2023) and Mujuru and Merwe (2024) suggest that anxious drivers will tend to resort to informal and intuitive signals, typically overestimating others' communicative intent, particularly in circumstances of weak regulatory enforcement or institutional mistrust. Kettle et al. (2023) also argue that stress-exacerbated informal driving responses are forms of emotional signalling that render traffic less predictable.

Technologically, the research investigated attitudes towards the compatibility of informal communication with new systems such as Vehicle-to-Vehicle (V2V) communication and AI-driven platforms. More than half (58%) of the respondents to the survey were of the view that informal gestures like hand waves or horn taps cannot be trustworthily interpreted by smart systems, while a mere 16% were confident about such compatibility. One-sample chi-square goodness-of-fit test ($p < 0.001$) revealed statistically significant scepticism, thus confirming Hypothesis 3 (H3). This is in line with the arguments of Schumann et al. (2023) and Suryana et al. (2024), who argue that the formal, standardised nature of V2V systems is not harmonious with spontaneous, culturally embedded human signals. Reflecting on this, Liao et al. (2023) recommend that AI systems in mobility contexts be trained on locally gathered behavioural datasets so that the human nuance can really be captured.

Apart from this, Kettle et al. (2023) found that systems that do not possess human-like communicative properties are not capable of developing trust among drivers in mixed traffic, particularly in Africa and Southeast Asia. This emphasises the need for systems that can interpret social and cultural cues, not mechanical inputs.

This twin discovery, that informal signalling is technologically incompatible and culturally influential, reveals a central flaw in the African smart mobility transition. Informal signals are

essential to survival within communication on the under-regulated roads, but they become significant barriers to automation. The findings support arguments made by Chibaro and Foya (2024), who promote policy regimes that recognise, rather than deny, indigenous traffic ways of being in framing intelligent transport systems.

Behavioural Implications

Psychological stressors and societal values have a significant role in influencing behaviour and the use of informal cues. The driving culture in most African nations still relies to a great extent on informal cues such as hand signals or flashing lights (Adedeji et al., 2024). While in some environments such systems work, they lead to misinterpretation, especially among inexperienced drivers. Psychological stressors like time pressure and traffic density are also responsible for informal signal use. Under pressure, drivers might react with automatic reactions like honking or hostile hand gestures that could be misinterpreted by other drivers and escalate into conflict or an accident (Kettle et al., 2023). Peer influence is also significant; novice drivers learn from experienced drivers and are therefore inducted into the informal communication loop without formal training or knowledge.

Technological Integration Challenges

The use of technology like V2V communication and AI systems is helpful and detrimental. Although these systems are intended for road safety through the visibility of communication between the vehicles, their success depends upon the belief and perception of the drivers. Experimental evidence indicates that the automated systems can be misjudged or distrusted by the drivers, and these can be potential safety hazards (Suryana et al., 2024).

Furthermore, system development needs to consider how individuals act and the cultural factors that are a part of human lives. For instance, autonomous vehicle anthropomorphism, or the ability to mimic human-like interaction, shapes driver behaviour and acceptance (Kettle et al., 2023). Therefore, developers need to make technology solutions more human-oriented, culture-sensitive, and backed by widespread driver training programs.

Policy Relevance

There are both drawbacks and advantages to informal signalling in low-regulation environments. The drawbacks are that the lack of formalised communication channels may lead to miscommunication and accidents. The advantages are that such informal sources are evidence of drivers' ability to fill infrastructural and regulative gaps. Policymakers must incorporate informal communication practices within formal driving schools to educate drivers in situational and standardised communication skills. The legislation must be changed to keep up with the evolving face of road communication, merging technological advancements without sacrificing cultural identity. Governments, technology, and societies must harmoniously support each other in having an integrated and successful road safety program. Such a breakdown emphasises the informal nature of driver engagement and the wide-ranging implications for road safety, technology incorporation, and policy-making. Addressing these challenges demands an integrated solution balancing cultural understanding, technological innovation, and regulatory reform.

Conclusion

This study examined the nature, scope, and importance of informal driver communication in Zimbabwe and determined that it is both a widespread cultural practice and an operational adjustment to the nation's challenging road network. Utilising a mixed-methods design, the study identified common informal signalling practices, hand signs, flashing headlights, and horn use, and examined usage patterns, situational meaning, and accompanying safety risks. The qualitative narratives emphasised the adaptive and intuitive nature of such signals, while the quantitative reports revealed high correlations between informal communication and road safety outcomes and driver experience levels.

The conclusions are an important contribution to road safety discussions in low- and middle-income nations, where formal traffic control practices are poor or patchily enforced. By highlighting the ambivalence of the informal signals, as lifesaving but equally risk-causing, this study problematises traditional road safety models that are usually indifferent to behavioural and cultural processes.

Policy and Practice Recommendations

Drawing directly from the findings of this study, the following recommendations are proposed to address the behavioural and technological challenges posed by informal communication among drivers in Zimbabwe. These recommendations aim to enhance road safety through evidence-based interventions grounded in local driving practices.

Public Awareness and Safety Campaigns

The study revealed widespread reliance on informal signals such as hand gestures, horn use, and headlight flashing, many of which are ambiguous and prone to misinterpretation. Targeted public education campaigns should focus on raising awareness about the risks associated with inconsistent signalling. Messaging should emphasise safer signalling habits, promote mutual understanding among drivers, and reduce miscommunication, particularly in high-traffic zones.

Culturally-Informed Driver Training

Driver training programs should be revised to include informal communication practices observed in local road environments. Current curricula are often limited to formal traffic rules and ignore the nuanced, adaptive behaviours that drivers develop in practice. By integrating these behavioural realities into official training, instructors can better prepare drivers to interpret and respond to informal signals safely and consistently.

Adaptive Technology Design

The study found that most drivers perceive low compatibility between informal signals and V2V or AI-driven systems. As Zimbabwe gradually moves towards smart mobility integration, there is a need for adaptive technology that can operate effectively in non-standard environments. Sensor systems, AI algorithms, and communication protocols should be tested and adapted to recognise

informal cues common on Zimbabwean roads, ensuring both human and machine drivers can coexist safely.

Regulatory Strengthening and Stakeholder Engagement

While driver behaviour plays a central role in road safety, regulatory frameworks must support behavioural change. Enforcement of signalling-related traffic rules should be enhanced, and penalties for negligent communication practices must be clarified and applied consistently. Simultaneously, partnerships among regulatory authorities, transport operators, and driver associations should be established to co-develop practical, enforceable guidelines for safe informal signalling.

Integrated Multi-Sectoral Approach

Improving road safety in Zimbabwe requires collaboration across government agencies, driver training institutions, technology developers, and civil society. This study demonstrates that addressing informal signalling is not just a behavioural issue but also technological and institutional. Therefore, multi-stakeholder coordination is essential for designing education campaigns, adapting intelligent systems, and developing responsive policy frameworks that reflect the realities of Zimbabwe's transport ecosystem.

Limitations and Future Research

Despite its virtues, there are several significant limitations to this research. First, the geographical scope of the study was limited to selected urban and peri-urban spaces in Zimbabwe, e.g., Harare and Bulawayo. Although these are busy locations, they fail to represent rural driving behaviour, whose road conditions, traffic flow, and unofficial communication habits may be vastly dissimilar. Thus, the findings might not be fully applicable to the national context or to neighbouring rural areas with diverging mobility patterns.

Second, the study relied on self-reported data collected through surveys and interviews. Although efforts were made to reduce social desirability bias (i.e., ensuring anonymity and confidentiality), there remains the possibility that respondents underreported or exaggerated their signalling behaviour or histories of accidents. Self-reports are necessarily susceptible to recall error and subjective memory of past events.

Third, non-driver road users were not included. Excluding these populations narrows the scope of the research because these populations may differently interpret informal signals or may be more exposed to miscommunication. Incorporating their perspectives into future research could provide an integral picture of road safety in Zimbabwe.

Further research would be well advised to extend this foundation through the utilisation of longitudinal designs to track driver behaviour change and informal signalling practice development over time. Cyclists and pedestrians should also be incorporated into the samples, since these individuals often utilise the same informal communication spaces as drivers and can serve to key into cross-modal interaction and road safety flaws.

Additionally, experiments and simulations can be employed to study informal signal interpretation in controlled environments and how miscommunication can be mitigated. Merging virtual reality software or traffic micro-simulators can enable further understanding of risk dynamics and aid in AI system development that reacts to localised informal signals. In short, future scholarship must bridge the gap between informal roadside practices and formal safety models, pursuing more equitable, responsive, and efficacious interventions into transport safety planning.

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Exploring responsible AI Integration in management education: A case study of Southern African Universities

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Abstract

The integration of responsible Artificial Intelligence (AI) in higher education has emerged as a transformative yet complex process, particularly in the Global South. This study investigates the challenges and opportunities associated with responsible AI adoption in management education within selected Southern African state universities. Despite growing interest in AI-enhanced learning, these institutions face structural and institutional barriers that hinder ethical and effective integration. Guided by Institutional Theory, this research employs a qualitative multiple case study design to derive insights from 30 purposively selected participants, including academic staff, policymakers, and ICT administrators, across various public universities in Zimbabwe and South Africa. Data were collected through in-depth interviews and focus group discussions and analysed using thematic analysis. Findings reveal four major challenges: infrastructural deficits, low digital literacy, institutional resistance, and the absence of AI-specific education policies. Nonetheless, participants identified promising opportunities in curriculum innovation, faculty development, and regional collaboration. The study extends Institutional Theory by demonstrating how organisational norms and cultural inertia influence AI adoption in under-resourced educational contexts. Practically, it offers policy-level and institutional recommendations for ethical AI deployment, including the need for national frameworks, digital infrastructure investment, and structured AI training programmes. This research contributes to the growing discourse on ethical AI in African education by highlighting both systemic constraints and pathways for transformative change in management education.

Keywords: Responsible Artificial Intelligence, management education, Institutional Theory, digital transformation, higher education, Southern Africa.

Introduction

Contextual Background

The use of Artificial Intelligence (AI) in higher learning has emerged as a landmark development in global pedagogical innovation. Responsible AI, which incorporates ethical considerations such as transparency, fairness, accountability, and inclusivity, has become an urgent priority for universities globally (Fjeld et al., 2023; Binns et al., 2023). Higher education institutions in Europe, North America, and Asia are increasingly adopting artificial intelligence technologies to enhance personalised learning, automate administrative functions, and improve student outcomes (Chen et al., 2023; Zhang & Kim, 2024). However, researchers caution that AI adoption must be ethically grounded to avoid entrenching biases, invading privacy, and exacerbating digital divides (Prates et al., 2024; Asare & Boateng, 2024).

In the context of management education, responsible AI presents both a tool and a challenge. Given that management education is responsible for preparing future business leaders and policy makers, it must integrate emerging technologies in a way that aligns with values such as accountability, critical thinking, and fairness (Brewer, 2025; Hancock & Miller, 2025). Scholars like Mhlanga (2024) and Banda and Dube (2025) highlight that AI can support case-based teaching, intelligent tutoring, and real-time feedback mechanisms, all of which are particularly beneficial in resource-constrained environments. Moreover, AI-enabled curriculum design tools are increasingly employed to tailor content delivery, foster learner engagement, and align learning objectives with dynamic labour market needs (Dlamini & Sibanda, 2023; Maree et al., 2023).

Despite this global progress, Southern African state universities face unique challenges. These include inadequate digital infrastructure, inconsistent policy guidance, and institutional inertia (Lubinga et al., 2023; Ndlovu & Makoni, 2023). Limited fiscal capacity, digital illiteracy, and leadership resistance further inhibit AI adoption in management faculties (Mutanga & Chigona, 2024; Mlambo & Dube, 2025). In this context, understanding how responsible artificial intelligence can be integrated into management education necessitates a localised and institutionally grounded analysis that considers not only technical constraints but also organizational and socio-cultural factors.

Problem Statement

While significant attention was given to AI adoption in education globally, existing literature generalises the education sector without disaggregating it by discipline or institutional context. This study narrows the focus specifically to management education, as a distinct pedagogical and disciplinary field, within state-owned higher education institutions in Southern Africa. Previous studies have not adequately addressed how responsible AI practices are conceptualised and operationalised within the unique mandates of management education, particularly in public universities facing financial and administrative problems.

Furthermore, while international universities are increasingly guided by AI ethical policies and institutional AI governance frameworks (Zhao et al., 2024; Fjeld et al., 2024), state universities in Southern Africa largely lack structured guidelines for responsible AI adoption. There remains a critical knowledge gap regarding how institutional, cultural, and regulatory dynamics influence

responsible AI integration in these contexts (Mpofu & Gondo, 2024). This study, therefore, explores how responsible AI is perceived, implemented, and resisted within selected public institutions, with a particular lens on management education.

Research Gap

Although emerging literature recognises the importance of ethical AI in education (Nyathi & Dube, 2024; Zimba et al., 2024), few studies focus specifically on the institutional dynamics shaping responsible AI adoption in management education. Moreover, while Institutional Theory has been applied in studies of organisational change and innovation, its contextual application in AI adoption within African higher education institutions remains under-explored (DiMaggio & Powell, 2023; Scott & Meyer, 2024). Most empirical studies concentrate on the Global North, with limited investigation into how African universities, particularly state-owned institutions, are responding to the pressures of technological innovation amidst systemic constraints (Becker & Erasmus, 2025; Kalema & Ncube, 2024). This study addresses this lacuna by applying Institutional Theory to examine how formal structures, normative expectations, and cultural-cognitive elements shape AI integration in management education across selected Southern African state universities.

Objectives and Research Questions

This study is guided by the following research objectives:

- 1 To examine the challenges associated with integrating responsible AI into management education in selected state universities.
- 2 To explore opportunities for adopting responsible AI tools and frameworks in management education.
- 3 To analyse how institutional factors (e.g., policy, norms, resistance) influence the integration of responsible AI in management education.

Based on these objectives, the study seeks to answer the following research questions:

1. What are the key enablers of responsible AI integration in management education within selected Southern African state universities?
2. What are the key barriers to responsible AI integration in management education within selected Southern African state universities?
3. How do institutional structures and norms shape the adoption of responsible AI in these contexts?

Scope and Justification

This research focuses exclusively on state-owned universities in Southern Africa, specifically institutions in Zimbabwe and South Africa. These universities were selected due to their public mandates, regulatory environments, and administrative structures, which often differ significantly from those of private institutions. The selection also reflects regional diversity while allowing for comparability of institutional characteristics. The focus on management education is intentional,

given its critical role in preparing graduates to lead digital transformation and address ethical dilemmas in organisations.

The study adopts a qualitative multiple case study design, engaging 30 purposefully selected participants drawn from academic staff, policymakers, and administrators involved in AI-related education and management. While the sample size may appear limited, it aligns with the study's interpretivist paradigm and exploratory nature, prioritising depth of insight over breadth of generalisation. Small, targeted qualitative samples, as argued by Creswell and Poth (2023), enable in-depth understanding of complex social phenomena, especially in under-researched contexts like responsible AI in African tertiary education.

Literature Review

Defining Responsible AI in Higher Education

The narrative surrounding Artificial Intelligence (AI) in education is becoming more anchored in core ethical values such as transparency, accountability, justice, and fairness. Fjeld et al. (2024) define accountable AI as the use of machine learning systems under ethical and regulatory oversight that prioritise society's well-being and the integrity of institutions. This issue is particularly critical in educational environments, where decision-making processes by AI systems have immediate implications on learning outcomes and academic equity (Binns et al., 2023). Hancock and Miller (2025) argue that reliable AI systems must present explainable and auditable decision-making processes in order to be capable of maintaining trust in educational environments. Similarly, Asare and Boateng (2024) observe that culturally biased algorithms and opaque "black box" systems pose a risk to pedagogical integrity, particularly in underrepresented and diverse learning environments.

In the context of management education, ethical AI intersects with the growing demand for critical thinking, ethical decision-making, and evidence-based reasoning (Brewer, 2025; Mhlanga, 2024). Prates et al. (2024) argue that AI technologies should not only automate instructional and administrative functions but also be focused on educational values that prioritise cognitive development over the displacement of human judgment. Zimba et al. (2024) caution against the unregulated use of AI grading systems, which can unfairly disadvantage some students on socio-economic or linguistic grounds. Additionally, Fjeld et al. (2023) advocate for the implementation of mechanisms such as algorithmic audits, fairness metrics, and user-informed consent to ensure that AI implementation is within ethical and regulatory requirements.

In addition, Zhao et al. (2024) and Kim and Zhang (2024) assert that ethical AI must be embedded within institutional policies and curriculum design to prevent ethical lapses. Nyathi and Dube (2024) highlight the importance of inclusive data sets and contextually adapted algorithms to reconcile African education values with AI integration. In summary, both management and general higher education must ensure that ethical AI practices adhere to global ethical standards while remaining sensitive to local pedagogical context so that innovation does not further widen existing inequalities.

Conceptual Lens: Institutional Theory

Institutional Theory can serve as an effective framework for analysing the introduction and adoption of responsible AI in higher education. DiMaggio and Powell (1983) originally theorised that institutional action is conditioned by organisational structures, norms, and values. Within the perspective of AI adoption, Institutional Theory explains how universities conform to prevailing technology and ethical requirements through coercive, mimetic, and normative isomorphism (DiMaggio & Powell, 2023; Scott & Meyer, 2024). Coercive isomorphism reflects the influence of funding bodies and regulatory authorities, while mimetic isomorphism refers to the tendency of institutions to emulate peer organisations perceived as successful; normative pressures isomorphism arises from professional norms and accreditation standards.

Several scholars have applied Institutional Theory to digital transformation. For instance, Suchman and Edelman (2025) argue that the perceived legitimacy of AI applications determines their acceptance, regardless of whether they are functioning effectively. North (2023) criticises Institutional Theory for downplaying the role of agency and resistance, especially in situations where bureaucratic inertia obstructs decision-making on technology. Mpofo and Gondo (2024) observe that institutional resistance to AI in Southern African universities had the effect of entrenching administrative culture and anxieties about job losses.

Kalema and Ncube (2024) identify structural fragmentation and leadership inertia as key institutional hurdles to AI reform in public universities. Banda and Sibanda (2025), however, note that institutions adopt AI to keep up-to-date with global trends, yet without the internal capacity necessary for ethical governance of such systems. Mlambo and Dube (2025) add to this by demonstrating that schools of management education do not leave space for pedagogies facilitated by AI due to highly regimented academia.

In general, Institutional Theory provides a valuable framework to examine responsible AI adoption in socio-political contexts. Institutional Theory makes it possible to identify formal and informal institutional drivers that can facilitate or hinder the adoption of AI in ethics management education.

Global Trends in Responsible AI Integration

Universities globally are gradually trying out responsible AI to augment learning, personalise teaching delivery, and streamline administrative functions. European universities have been at the forefront, deploying AI tools that are General Data Protection Regulation compliant and adhere to data privacy and ethics requirements (Sánchez & Martínez, 2024; Fjeld et al., 2024). At the University of Edinburgh and University College London in the UK, the AI governance framework emphasises auditability, transparency, and algorithmic fairness (Becker & Erasmus, 2025). In the Nordic nations, universities have also introduced AI literacy training programmes for staff and students to increase institutional readiness (Lindholm et al., 2024).

In Asia, countries such as Singapore, China, and South Korea have extensively invested in AI-based education infrastructure (Chen et al., 2023; Zhang et al., 2024). Singapore's AI for Education has been praised for including ethics training modules in AI courses (Ting & Ho, 2024). Conversely, Chinese universities, despite their high technological capacity, have been criticised

for using AI monitoring systems in a way that erodes academic freedom and openness (Wei & Liu, 2023; Zhao et al., 2024). These diverse experiences reveal the importance of contextual sensitivity in AI policy application.

North American higher education institutions in the United States and Canada have established research hubs of ethical AI in education. Some universities, like Stanford University's Institute for Human-Centred AI and MIT's Schwarzman College of Computing, have established interdisciplinary frameworks that incorporate fairness, algorithmic transparency, and inclusivity in AI education (Krause et al., 2023; Black et al., 2024). Nevertheless, challenges remain. Scholars like Terranova and Gentry (2024) observe that AI adoption driven by commercial reasons tends to overshadow ethical governance in institutions where regulations are weak. Collectively, these global insights stand as both inspiration and cautionary tales for Southern African state university institutions, whose infrastructural, governmental, and moral settings are so divergent.

Regional Context and Empirical Gaps

The use of AI in higher education, especially responsible AI, is still relatively new in Southern Africa. Studies by Lubinga et al. (2023) and Hlongwane et al. (2024) reveal that while universities in South Africa and Zimbabwe are beginning to experiment with AI tools in learning management systems, their application is largely uncoordinated and ethically unregulated. Mhlanga (2024) observed that infrastructural constraints such as poor connectivity, outdated computer labs, and underfunded IT departments significantly hinder AI deployment.

Banda and Dube (2025) report that faculty resistance, lack of digital literacy, and misalignment of national ICT policies further slowdown AI adoption. Similarly, Mutanga and Chigona (2024) argue that most public universities lack the policy frameworks needed to govern the use of AI in education. Ndlovu and Makoni (2023) identify bureaucratic inertia, political interference, and resource limitations as systemic obstacles.

Empirical work by Phiri and Ngwenya (2024) confirms that there is low awareness of ethical AI principles among university administrators, and very few institutions have formally adopted AI ethics codes. Bhebhe and Moyo (2025) emphasise that institutional silos and a lack of inter-university collaboration limit scalability and shared learning. Maseko and Gumbo (2024) warn that without contextual guidelines, African universities may import AI solutions that are culturally misaligned or ethically problematic.

Despite these challenges, there are isolated cases of progress. Chisale et al. (2023) document how a partnership between a South African university and a private tech firm led to the co-development of a responsible AI training module. Similarly, Mwansa and Tembo (2024) discuss regional consortia emerging to address infrastructural and knowledge-sharing deficits.

Nonetheless, the literature reveals a profound empirical gap in understanding how public universities in Southern Africa conceptualise, implement, and regulate responsible AI, particularly in management education, a field that is critically positioned to lead digital transformation.

Empirical Studies and Conceptual Framework

Empirical studies on AI in education have grown in recent years, yet few have combined ethical AI adoption with a robust theoretical framework. Braun and Clarke (2023) emphasise the importance of thematic analysis in unpacking the lived experiences of educators navigating AI-enabled transitions. Nowell et al. (2024) and Terry et al. (2024) use qualitative methods to examine the attitudes of faculty towards AI in curriculum design, revealing fears of dehumanisation and job displacement. Meanwhile, Morse (2023) and Tracy (2024) highlight the effectiveness of purposive sampling in capturing complex institutional dynamics that influence AI adoption.

A conceptual framework is crucial for guiding research at the intersection of ethics, pedagogy, and institutional governance. This study introduces a model where Responsible AI (input) interacts with Institutional Drivers (such as leadership commitment, ethical norms, infrastructure, and faculty readiness) to shape Integration Outcomes (like pedagogical transformation, curriculum innovation, and student engagement). Conceptual frameworks are primarily based on Institutional Theory and recent empirical studies by Mlambo and Dube (2025), Nyathi et al. (2023), and Makoni and Chigumadzi (2025).

The model also incorporates feedback loops, grounded on the principle that the effective use of AI is essentially aligned to institutional commitment and moral advancement (Dlamini & Tembo, 2024). The model also accounts for peripheral enablers like collaboration within the region, external support, and regulation requirements (Matlala et al., 2023; Kamau et al., 2025). As such, the model offers an inclusive and context-specific approach to responsible AI in the management of state higher and tertiary educational institutions.

Methodology

Research Philosophy and Design

The theoretical underpinning of this research is embedded in Institutional Theory, supported by nascent empirical studies by Mlambo and Dube (2025), Nyathi et al. (2023), and Makoni and Chigumadzi (2025). The model also incorporates the application of feedback loops, recognising that effective AI incorporation sustains institutional commitment and ethical maturity (Dlamini & Tembo, 2024). It also incorporates external enablers like regional coordination, donor engagement, and regulatory framework (Matlala et al., 2023; Kamau et al., 2025). As such, the model offers a systemic and context-focused response to responsible AI in management education in public universities. This aligns with the aim of the current study to discover how academic managers, lecturers, and policymakers in Southern African state universities perceive and respond to the integration of AI in management education.

A qualitative multiple case study design was employed to provide descriptive context-specific data regarding responsible AI integration in selected state universities. Yin (2023) argues that case study design is the most appropriate when examining contemporary events in real-world settings, especially where the boundary between the phenomenon and setting is not clearly defined. Similarly, Baxter and Jack (2022) suggest using case studies to research education technology, citing that such a design facilitates cross-institutional comparisons and accommodates the heterogeneity of institutional settings. The qualitative case study design is thus amenable to

capturing the multi-layered dynamics of AI adoption in different universities in the Southern African context.

Population, Sample, and Case Selection

The study population was composed of academic staff, senior administrators, and policymakers involved in AI-related teaching, course design, or institutional management at state-owned universities. Purposive sampling was used to select 30 participants across five state universities in Zimbabwe and South Africa. Both countries were chosen due to the comparable developmental stage of their higher education systems and the presence of public universities that actively engage in digital transformation initiatives (Lubinga et al., 2023; Mhlanga, 2024).

Purposive sampling was used to ensure that the participants had relevant information and experience, which would enhance the quality and richness of data (Patton, 2024). Morse (2023) supports this approach in AI-themed education research, citing that purposive samples enable researchers to make informed conclusions from cases rich in information. Equally, Muzondo, Mashapure, and Masiwa (2025) point out that in technology adoption research, the selection of stakeholders directly involved in the implementation process leads to more insightful findings. By collecting data from faculty leaders, department chairs, IT managers, and curriculum specialists, the research enabled triangulation of viewpoints throughout institutional hierarchies.

Data Collection Methods

Data was collected during fieldwork through one-on-one in-depth interviews and focus group discussions, both of which are consistent with interpretivist paradigms and qualitative case study research. The interviews clarified personal comprehension into participants' knowledge of accountable AI, while the focus groups provided interactive discussions emphasising patterns and institutional norms. According to King and Horrocks (2023), the dual approach optimises the richness of the data and co-construction of meaning. Nowell et al. (2024) also promote such practice in the context of AI-in-education research and describe that focus groups are well-suited to investigate attitudes at the group level toward digital transformation.

The interviews lasted 45–60 minutes and employed a semi-structured questionnaire to capture questions on ethical AI guidelines, institutional obstacles, faculty readiness, and policy alignment. The focus groups lasted about 90 minutes and were a panel of a single institution's faculty members. All sessions were video- and audio-recorded with consent and face-to-face on campus or via video conferencing technology, depending on logistics. Use of open-ended and flexible questions enabled participants to think deeply about their experience without moving away from the objectives of the study.

Data Analysis

Data was analysed using Braun and Clarke's (2023) six-step model of thematic analysis. The process began with familiarisation through repeated readings of the interview and focus group transcripts, followed by initial coding, during which recurring patterns were identified. These codes were then subsequently refined and grouped into potential themes such as infrastructural barriers, ethical awareness, curricular constraints, and institutional resistance. These themes were

then reviewed for internal coherence, refined for clarity, and finally named and defined for reporting purposes.

Castleberry and Nolen (2023) point out that thematic analysis is most appropriate for interpretivist qualitative research since it facilitates iterative theme construction and alignment with the research questions. Terry et al. (2024) successfully used thematic analysis in a faculty response to an AI usage in curriculum development study, which demonstrates its suitability in the context of educational technology. NVivo software was used to assist with coding data and organise and visualise themes, enhancing analytical transparency and rigour within this research.

Ethical Considerations

Ethical integrity guided this research. Informed consent was obtained before each of the focus group discussions or interviews, and comprehensive information sheets and consent forms were provided to all the participants. Confidentiality of the participants was maintained by anonymity and confidentiality through de-identification of the transcript and data storage in encrypted computer hard drives.

Ethics approval from the respective ethics review boards of the host universities was granted. As Wiles (2024) argues, the emphasis in qualitative research is not procedural but creates respectful researcher-participant relationships. Israel and Hay (2023) also demand constant ethical consideration during the course of conducting the research, especially in dealing with such sensitive issues as AI regulation and surveillance in universities. These moral values were strictly adhered to in the study, and the participants were handled with respect and comfort during the study.

Limitations of the Methodology

While the study offers qualitative insights on the integration of ethical AI in management education, several methodological limitations need to be recognised. Firstly, small sample sizes and case study studies restrict the generalisability of findings to the universities under study. Creswell and Poth (2023) contended that qualitative research prioritises depth over breadth and therefore is best placed to study in-depth and context-specific phenomena.

Second, despite efforts to ensure a variety of views, the research remained open to researcher bias, particularly in interpreting findings. In an effort to mitigate this, the analysis was peer-checked independently by a qualitative researcher and involved reflexive journaling throughout the research.

Finally, the rapid development of AI makes some of the results time-sensitive or context-dependent. It is recommended by Muzondo, Mashapure, and Masiwa (2025) to have constant engagement with the field to make qualitative results timely in technologies of rapid development.

Findings

The study explored participants' perceptions of the challenges and opportunities related to the adoption of responsible AI in management education at selected Southern African state universities. Thematic analysis reveals two predominant themes: (1) Challenges of Responsible AI Integration and (2) Opportunities for Responsible AI Integration, each containing sub-themes derived from recurring patterns in interviews and focus group discussions.

Challenges of Responsible AI Integration Infrastructural Deficits

A key challenge raised by participants was the lack of foundational digital infrastructure in many public universities. This included outdated computer labs, unreliable internet connections, and insufficient access to AI-compatible devices for both staff and students.

One participant noted:

"We still have lecture rooms without projectors, let alone internet access. Talking about AI is far-fetched when the basics are not in place."

Another added:

"Our students depend on mobile phones and very limited data. Most of them are not able to utilise or do not have access to AI platforms that require a stable internet."

This technological inadequacy severely limits the universities' capacity to implement AI tools in teaching, curriculum design, or administrative processes. For example, attempting to deploy AI-based learning platforms is typically a failure due to bandwidth limitations or hardware incompatibility, and this discourages the move from theoretical arguments on AI to actual deployment.

Digital Literacy Gaps

In addition to the technical limitations, both students and lecturers were also cited as having low digital literacy, which was listed as the chief obstacle. Only a minority of participants reported limited exposure to the subject matter, the tools, and AI pedagogy. One participant remarked:

"Most of us were never taught AI. We hear the word, but we don't actually know what it does or how to use it in teaching."

Another participant said:

"Even the students, especially rural students, struggle to manage elementary ICT. It is unrealistic to expect them to work on AI platforms without pre-training."

These lacunas not only slow the adoption of AI technology but also intelligent interaction with it. Underutilisation of even rudimentary learning technologies occurs in most instances, thanks to fear and misinformation regarding the purpose and functionality of AI. This leads to a vicious cycle where institutions fall behind international trends, not because of resistance, but because they do not have basic digital literacy.

Institutional Resistance

Institutional inertia was a major obstacle. Respondents described a general resistance to change from traditional teaching methods and institutional processes to AI-augmented systems, even where the tools were available.

One administrator commented:

"Individuals view AI as a threat, in the sense that it will replace lecturers or make some jobs redundant. So, there is passive resistance on the part of both academic and support staff."

A faculty member also commented:

"There's a genuine culture of 'this is the way we've always done it.' Even when we introduce new systems, the take-up is very slow."

Such resistance is usually a result of fear of change, perceived job loss, and unfamiliarity with AI as a supporting, rather than replacement, tool. For example, an attempt to digitalise examination marking through the use of AI tools was put on hold because academic staff unions protested, fearing a loss of academic control.

Policy and Leadership Gaps

Respondents reiterated again and again the absence of explicit institutional policies or leadership endorsement for the integration of AI. Although there were discussions of AI both nationally and institutionally, few universities had written strategies, regulatory frameworks, or set aside money for applying AI in instruction.

One of the policy officers remarked,

"We have national ICT policies, yes, but nothing specific to AI in education. There's no roadmap or budget line for it."

Another respondent mentioned:

"Leadership talks about digital transformation, but without concrete policies, nothing moves. We're left improvising without guidance."

The lack of policy clarity makes it difficult for faculties to develop AI-integrated programmes or justify investment in AI-related tools. Without formal leadership buy-in, AI remains a buzzword rather than a strategic institutional priority.

Opportunities for Responsible AI Integration

Curriculum Development

Despite all these, the participants considered curriculum development as the most important space for potential where AI can directly impact and make a revolutionary difference. They regarded AI technology as beneficial in providing adaptive learning environments, developing data-informed feedback, and tailoring content delivery.

One of the lecturers said:

"With AI, we could tailor assignments based on students' performance. This would keep slow learners going and bright students on their toes."

A curriculum officer continued to say:

"AI can help to make course content industry-relevant based on the analysis of job market data and by suggesting what to include in our syllabus."

Pilot projects of AI-based platforms for assessment had already commenced in a few universities, but rollout was yet to be extensive. There was the perception that, if responsibly deployed, AI had an enormous ability to increase curriculum flexibility, relevance, and accessibility for management education.

Faculty Development

Another worth mentioning was using AI to supplement staff development with IT skills training and pedagogy upskilling. Participants suggested that AI might be used to give lecturers immediate feedback and customise their career development pathways.

One participant noted:

“We might utilise AI software to track how lecturers interact with students on the internet and give them tips on how to improve.”

A faculty dean mentioned:

“Faculty training programmes could benefit from AI by identifying gaps in teaching methods and aligning training modules accordingly.”

There was also interest in AI-powered simulations for management scenarios, which could serve both teaching and training purposes. These technologies, if deployed carefully, could reduce the burden on conventional workshops and offer continuous, self-paced faculty development.

Collaborative Networks

Finally, regional collaboration was cited as a strategic enabler of responsible AI adoption. Participants highlighted the importance of pooling resources, sharing technical expertise, and co-developing ethical frameworks through regional platforms and academic networks.

One respondent noted:

“Why should every university struggle alone? If we work together, we can develop common tools and standards for AI in teaching.”

Another participant proposed:

“We need SADC-level or at least national consortia that support joint AI projects, shared infrastructure, shared training, and even shared funding.”

Some participants referenced recent pilot collaborations involving donor-funded digital learning projects as models worth expanding. These networks were viewed as essential for overcoming infrastructural disparities and promoting consistent standards for responsible AI use across institutions.

In summary, while challenges to responsible AI integration in management education are formidable, especially infrastructural and policy-related, there are promising opportunities for institutions that are willing to invest in training, curricular innovation, and inter-institutional cooperation. Participants recognised that a collective, well-coordinated, and ethically grounded approach will be key to harnessing AI’s potential for educational transformation.

Discussion

The findings of this study provide a rich empirical understanding of the challenges and opportunities associated with responsible Artificial Intelligence (AI) integration in management education at state universities in Southern Africa. When critically examined alongside theoretical

expectations and international benchmarks, several points of convergence and divergence emerge. Institutional Theory proves particularly useful in framing these dynamics, particularly the observed resistance, policy inertia, and slow technological adoption.

The infrastructural and digital skills deficits reported by interviewees echo Institutional Theory's assertion that deeply embedded norms and resource limitations in institutions generally thwart innovation. DiMaggio and Powell (2023) illustrate how coercive forces such as national ICT policy or expectations of donors are insufficient to drive drastic change unless and until normative shifts emerge internally. In this context, the lack of a strong institutional culture supportive of AI reform has left most state universities lagging in adoption. The mimetic isomorphism described in Institutional Theory, where institutions copy others to appear modern, was evident but largely superficial in this study. While some universities reference global AI initiatives, few have internalised responsible AI practices through training, policy, or curriculum change.

Institutional resistance to AI, rooted in fear of job displacement, lack of familiarity, and limited exposure, aligns with what North (2023) and Scott and Meyer (2024) describe as institutional inertia. This resistance is not due to a fundamental rejection of AI but rather a consequence of weak organisational readiness, bureaucratic rigidity, and a limited capacity for adaptive change. Faculty members and administrators fear AI because it disrupts long-standing norms and practices, which are often deeply embedded in university structures.

Comparing the findings to global trends, the Southern African context presents a distinct divergence. While universities in Europe and North America are advancing ethical AI frameworks, guided by GDPR compliance, institutional AI boards, and faculty development programmes, state universities in this study are still grappling with foundational issues such as device shortages and limited internet. For example, institutions like the University of Edinburgh or Stanford have well-documented AI ethics policies and funding support, while participants in this study noted an absence of national or institutional AI roadmaps. Even in Asia, particularly in Singapore, AI-driven personalised learning portals are being deployed, enabled by extensive public investment and robust governance, conditions lacking in the study context.

Despite these variations, possibilities for localised adaptation remain. The stakeholders perceived curriculum innovation, faculty development, and regional collaboration as viable for shaping responsible AI in integration. These elements align with global best practices on paper, but would require contextual addressing. For instance, while the global world utilises AI for providing students with automated feedback, institutions locally could start with adaptive low-end tools or content alignment systems based on performance analytics. This underscores the need for ethical accountability and cultural sensitivity, especially in a region where algorithmic bias can effectively entrench differences due to a lack of African data in AI training programmes.

The results also invoke ethical issues, specifically in relation to AI surveillance, data privacy, and algorithmic bias. Participants felt discomfort with AI-driven student surveillance and decision-making transparency. These fears reflect global ethical debates but are magnified in low-resource contexts, where legal and institutional safeguards are absent or weak. The absence of a locally developed ethical framework risks the adoption of AI technologies from other countries that are not necessarily aligned with local values or pedagogic cultures.

In brief, notwithstanding infrastructural, policy, and institutional limitations, theoretical and experiential insights from this study suggest a transformational pathway forward. By rooting institutional response on normative change, context-aware policymaking, and ethical AI design, Southern African state universities can harness AI to education outcomes without compromising equity, cultural compatibility, and intellectual integrity.

Conclusion and Recommendations

Summary of Key Findings

This research investigated the adoption of responsible Artificial Intelligence (AI) in management education at selected Southern African state universities. The findings reflected a mix of existing challenges and rising opportunities. On one hand, there are considerable challenges, such as infrastructural shortfalls, a low degree of digital literacy among students and staff, institutional resistance, and a lack of AI-specific leadership direction and policy framework. On the other hand, the research recognises enormous opportunities, such as curriculum redesign to incorporate AI, reskilling of academics, and collaboration between institutions. These opportunities, if addressed strategically, could significantly enhance the responsiveness and ethical orientation of AI adoption in management education.

Theoretical Contributions

This study contributes to the contextual application of Institutional Theory by providing an overview of how institutional norms, bureaucratic structures, and inertial forces influence AI adoption timing and trajectory. Unlike the cases where coercive or mimetic forces lead to technological adoption, Southern African state universities reflect a distinctive pattern of resisting, accommodating, and improvising. The study adds to Institutional Theory by highlighting how crucial internal agency, local constraints, and normative misalignments are in shaping technology adoption in resource-constrained learning environments. The study also illustrates how institutional legitimacy pressures, without vigorous internal structures and leadership commitment support, are insufficient to facilitate large-scale adoption.

Practical Recommendations

Several practical implications arise from the research. Firstly, there are required national policy documents that have well-defined goals, ethical values, and action lines for AI in education that incorporate AI. The policies must have a logical master plan to guide universities, with room for local adaptation.

Additionally, leaders in government and institutions must prioritise investments in digital infrastructure. This includes improving internet connectivity, purchasing AI-driven hardware, and replacing legacy systems with ones that support responsible AI technology.

Third, standardised training programmes for both academic and administrative staff are required. These must go beyond basic digital literacy and include AI ethics, classroom practice applications, and system integration strategies.

Finally, there is a critical need to establish clear ethical principles specifically suited to local contexts. These principles will need to cover data privacy, fairness of algorithms, and culturally

attuned AI design, making sure that AI tools are employed to enable educational equity instead of exaggerating existing differences.

Research Limitations

The study acknowledges several limitations. The sample size was relatively small, consisting of 30 purposively selected participants drawn from a limited number of institutions. While the study yields deep and rich insights, the findings are not generalised to all universities in Southern Africa. Furthermore, the qualitative approach emphasised interpretive depth over statistical breadth, thereby limiting the ability to quantify the relationship between variables.

Areas for Future Research

Future research can expand on this research by conducting comparative studies with private universities to learn about differences in resource levels, institutional agility, and innovation potential in adopting AI. These comparisons would yield valuable insights into scalable solutions and sectoral concerns.

Furthermore, longitudinal studies tracing AI policy implementation and its effects on teaching, learning, and institutional governance would create a more dynamic image of transformation over time. This approach can help establish when resistance or failure occurs earliest as institutions react, invest, and reorganise in response to new digital spaces.

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Computerized accounting systems adoption in Zimbabwean small shops: impacts and challenges in Masvingo Urban

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Abstract

In this digital era, business operations are being transformed by various technologies including Big Data. Big Data, known for voluminous data, in various formats and shared at high velocity has revolutionized business operations. This real time technological advancement has necessitated the adoption of Computerized Accounting Systems (CAS) among small shops that are key economic players that seek to remain competitive in Zimbabwe. This research paper seeks to explore on the impact of computerized accounting systems (CAS) adoption on the economic performance of small-holder shops in Zimbabwe. The research employs a mixed-methods approach that includes the quantitative analysis of survey data from a sample of small shops and qualitative insights from semi-structured interviews with accounting professionals and shop owners. The research sought to explore the relationship between CAS adoption, efficiency gains, cost reduction, improved financial reporting, and overall business profitability. The study intended to discover the extent to which CAS implementation contributes to the enhanced financial management practices, streamlined operations, and informed decision-making in a challenging economic environment characterized by hyperinflation in Zimbabwe. Research findings revealed a significant positive correlation between CAS adoption and improved business economic performance, particularly in areas such as reduced operational costs, enhanced data accuracy, and real-time financial reporting. However, the study also highlighted challenges related to CAS implementation costs, staff training, and system integration issues, which may obstruct the full realization of CAS benefits. The research recommends shop owners and policymakers to optimize CAS implementation and maximize its contribution to sustainable economic growth in Zimbabwe.

Keywords: Computerized Accounting Systems, CAS, Small Shops, SMEs, Economic Performance, Zimbabwe, Big Data, Financial Management, Hyperinflation.

Introduction

This research explores on the impact of the adoption of Computerized Accounting Systems (CAS) has on the economic performance of small-holder shops in Zimbabwe. The study is initiated against the backdrop of the current digital era that is characterized by Big Data, which has fundamentally technologically revolutionized business operations in order to remain competitive. This technological shift necessitated small shops, who are key economic players in Zimbabwe, to

adopt CAS in order to remain competitive. The research explores the connection between CAS adoption and efficiency gains, cost reductions, improved financial reporting, and overall profitability. It specifically aims to appreciate how CAS may enhance financial management, streamline operations, and support informed decision-making within Zimbabwe's economic climate of hyperinflation and currency fluctuations.

Background of the Study

The 21st century is characterized by an unprecedented wave of technological advancements, with the digital era fundamentally transforming or altering international trade (Bharadwaj et al., 2013). At the heart of this transformation is the phenomenon of Big Data which involves the generation of vast quantities of data in diverse formats at high velocity which offers both opportunities and challenges for different models of business enterprises (Chen et al., 2012). In this dynamic environment, the adoption of appropriate technologies is no longer an option but a necessity for business survival and growth. Based on the quantitative findings from the survey conducted in this study, there is partial growth in application with regards to the adoption of CAS among the small-holder shops surveyed in Zimbabwe. The data indicates that approximately fifty -five (55%) of the surveyed small-holder shops reported using some form of Computerized Accounting System. Small and Medium Enterprises (SMEs) that include small shops, are widely acknowledged as essential drivers and contributors to economic growth, employment generation, and poverty alleviation in developing economies like Zimbabwe (Makanyeza & Dube, 2016). However, these small shops often operate with limited funding and resources and usually face cut-throat competition from larger businesses. The challenging economic landscape in Zimbabwe, characterized by periods of hyperinflation, multiple currency use instability, and regulatory complexities, further exacerbates the operational challenges for these small business entities (Karedza & Govender, 2017). Effective financial management as well as informed decision-making become key under such circumstances. The technological solution provided by the computerized accounting systems (CAS) may improve on financial reporting, increase data accuracy, expedite accounting procedures, and eventually aid in improved company decision-making.

The article emphasizes that small shops need Computerized Accounting Systems (CAS) to improve their financial management and decision-making. These systems are defined as software and hardware that allow for the electronic capture, processing, storage, and reporting of financial data. Modern CAS can range from simple spreadsheets and off-the-shelf software (like QuickBooks, Sage, Zoho Books) to more complex software systems. They offer helpful modules for essential functions such as general ledger, accounts payable, accounts receivable, payroll, and inventory management. Adopting such technology may enhance financial reporting, increase data accuracy, and speed up accounting processes.

Many small shops that have not adopted CAS still rely on manual accounting techniques. Among the fifty-five percentage (55%) of shops that have adopted CAS, their usage ranges from basic spreadsheet applications to more dedicated accounting software like Sage Pastel. The performance of small shops using manual accounting methods is characterized by several challenges. Their processes are often laborious, prone to mistakes, and inadequate for providing timely financial insights. This can lead to significant operational issues, including inefficiencies, increased

operational costs, poor financial control, and a lack of agility in business decision-making. These shortcomings ultimately limit their competitiveness and potential for growth and profitability.

While the benefits of Computerized Accounting Systems (CAS) are generally acknowledged, there is a distinct lack of empirical evidence on their specific impact within the unique socio-economic context of Zimbabwe. The literature review confirms this, noting that specific studies focusing on small shops in Zimbabwe, particularly those that explore the nuances of CAS adoption within its hyperinflationary and multi-currency basket are under-researched. This study is therefore seeking to fill this critical gap by providing current, context-specific evidence that combines quantitative performance metrics with rich qualitative insights.

In stable economies, the motivation for CAS adoption is primarily driven by the pursuit of efficiency and optimization. Businesses adopt CAS to automate repetitive tasks, reduce manual labor, improve data accuracy, and achieve long-term cost savings through better inventory and cash flow management. The benefits are significant but focus on enhancing the performance of an already functioning business model. In contrast, within a hyperinflationary economy like Zimbabwe's, the motivation for CAS adoption shifts from optimization to adaptation and survival. The utility of CAS is no longer just about saving time or reducing minor errors; it becomes a critical tool for navigating extreme volatility. The system's ability to facilitate rapid price adjustments, track costs in real-time, and manage multiple currencies is essential for preserving value and remaining solvent. While businesses in stable economies use CAS to improve, businesses in hyperinflationary economies use CAS to intervene on a stressed and endured business enterprise.

Statement of the problem

Despite the known advantages of CAS, small shops in Zimbabwe seem not to fully appreciate and utilize them to their advantage. The adoption of CAS may potentially be hindered by a number of challenges. Many small shops still use manual accounting techniques, which are frequently laborious, prone to mistakes, and inadequate for delivering the timely financial insights required in a volatile economic environment (Beke, 2015). The problems faced by small shops in Zimbabwe that do not adopt CAS are extensive and are exacerbated by the country's volatile economic environment. Firstly, there is the challenge of errors and inefficiencies where the mistakes and inaccuracies of manual systems are obstacles to the provision of timely financial information needed to operate effectively. This leads to increased operational costs. Another problem is poor financial control. One shop owner who later adopted CAS likened their prior business modus operandi to operating in darkness, where they were unable to clearly verify cash flow, debtors, or profitable line of products. Another challenge faced by those small shops using manual systems was the inability to cope with economic volatility. In a hyperinflationary environment, manual systems struggle to handle the rapid and frequent adjustments required for pricing, cost tracking, and financial analysis. This can lead to significant financial losses. Although the general benefits of CAS are known, there is a need for specific empirical evidence on their impact on the economic performance of small shops within the stressed socio-economic hyper inflationary context of Zimbabwe.

Research Objectives

The primary objectives of this research are:

1. To identify and analyze the challenges encountered by small shops in Zimbabwe when adopting and implementing CAS.
2. To explore how CAS implementation enhances financial management, operational efficiency, and decision-making particularly in the context of hyperinflation and currency fluctuations among small holder shops in Zimbabwe.
3. To investigate the impact of CAS adoption on the economic performance of small shops in Zimbabwe, with regards to efficiency, cost reduction, financial reporting, quality, and profitability.
4. To provide recommendations for small shop owners and policymakers to optimize CAS implementation and leverage its benefits for sustainable economic growth.

Research Questions

This study seeks to answer the following research questions:

1. What is the current state of Computerized Accounting Systems (CAS) adoption among small shops in Zimbabwe?
2. What is the relationship between CAS adoption and the economic performance (efficiency gains, cost reduction, improved financial reporting, and profitability) of small shops in Zimbabwe?
3. How does CAS implementation contribute to enhanced financial management practices, streamlined operations, and informed decision-making in small shops within Zimbabwe's challenging economic environment?
4. What are the key challenges faced by small shops in Zimbabwe in their efforts to adopt and implement CAS?

Significance of the study

There are various reasons why this research is important. Firstly, the research will offer factual evidence of the advantages of CAS adoption for small shops in the context of a developing nation that is characterized by economic instability. Secondly, the findings will provide valuable insights to small shop owners in Zimbabwe, guiding their decisions regarding technology investment and streamlining business processes. Thirdly, policymakers and support institutions may use the research outcomes to design targeted interventions, such as training programmes or financial incentives, to promote CAS adoption. Finally, the study will contribute to the academic literature on technology adoption by SMEs in developing economies.

Scope and limitations of the study

This study focuses on small shops operating in urban and peri-urban areas of Masvingo town, Zimbabwe. Small shops that started operating after the Covid 19 pandemic, thus from 2022 to 2024 were selected. Such a period was chosen mostly because that is the period when many

businesses adopted technology in their operations a counter effort to the pandemic to operate remotely and keep afloat. The definition of "small shop" will be based on criteria such as the number of employees and annual turnover, aligned with common definitions used in Zimbabwe. While the study employs a mixed-methods approach for comprehensive insights, limitations may include the generalizability of findings beyond the sampled population, potential biases in self-reported data, and the dynamic nature of technology and the economic environment, which might change over time.

Literature Review

The Concept and Evolution of Computerized Accounting Systems

Accounting systems have evolved from manual ledgers to sophisticated digital systems. Computerized Accounting Systems emerged as a result of technological advancements, which keep on evolving traditional accounting practices by automating repetitive tasks and improve accuracy in real-time data processing (Grande et al., 2011). The first versions of CAS were often standalone systems focused on basic bookkeeping, but modern systems now range from simple spreadsheets and off-the-shelf software for small businesses like QuickBooks, Sage and Zoho Books to complex Enterprise Resource Planning (ERP) systems for larger organizations (Ismail & King, 2007). These systems offer modules for general ledger, accounts payable, accounts receivable, payroll, inventory management, and financial reporting.

The current business environment is described as a digital era, characterized by voluminous data being generated in various formats and shared at highest speeds, termed Big Data. This phenomenon of Big Data is positioned at the core of this transformation that is revolutionizing international trade and business transactions. In this dynamic Big Data driven environment, the adoption of appropriate technologies like CAS is no longer an option but a necessity for survival and growth. Therefore, Big Data comes on board not as a tool used in the evolution of CAS itself, but as the overarching transformative agent that enables the transition from manual to computerized systems that are essential for any business survival.

Benefits of CAS adoption for the small-holder business

Adopting CAS offers numerous significant benefits for small businesses. CAS assists small-holder business to overcome the limitations of manual accounting methods by improving their overall financial management. These benefits range from enhanced efficiency and accuracy in cost savings that result in informed decision-making. Numerous studies have highlighted the benefits of CAS adoption for SMEs. These benefits include;

Improved efficiency and accuracy

The key benefit of CAS is automation. Automation of tasks like data entry, calculations, and report generation saves time and reduces manual labor (Doss et al., 2016). Manual accounting is prone to human error, such as mathematical mistakes, incorrect data entry, and omissions. A computerized system automates calculations and data entry which significantly reduces the human errors. CAS minimizes human errors common in manual systems, leading to reliable financial data

(Saleh & Al-Sharayri, 2017). This results in accounted accuracy for those small -holder enterprises that utilizes the CAS software.

Better financial control and reporting

CAS adoption brings a number of benefits to the small shops that utilize the technologies. Firstly, CAS may generate a variety of financial reports like balance sheets, income statements and cash flow statements accurately with checks and balances complying in real-time (Appelbaum et al., 2017). This will positively improve the financial reporting feedback system of the small business. Computerized systems provide business owners with a clear and comprehensive view of their finances. By using automating tracking devices on the bank statement reconciliation value chain, the technology helps to prevent cash flow pilferages, which then ensures better control over the flow of money. Another benefit is that of improved decision making. Timely and accurate financial information tasks allow business owners and managers to make informed strategic and operational decisions (Lutfi et al., 2022). Decision making is key in business, especially in volatile operating environments existing in most developing countries. Unlike manual systems where companies have to wait for a person to analyze and report on financial data, computerized systems provide real-time updates. This means that businesses can access up-to-date information tasks on their financial state at any time, allowing for quick and informed decision-making. This means that businesses can access up-to-date information whenever needed, facilitating better decision-making. Furthermore, CAS adoption helps to reduce costs and improve internal controls. While there is an initial capital investment, CAS can lead to long-term cost savings through reduced labor, error free calculations, better inventory management, and optimized cash flow (Beke, 2015). Efficiency and effectiveness brought about by CAS provides businesses with a competitive advantage and good reputation which are key proponents for growth. CAS technologies have some built-in security features and audit trails that improves financial governance which in turn reduces the risk of fraud (Pathak, 2010). This goes a long way in alleviating unnecessary losses but instead improves the profitability of small businesses.

Challenges of CAS adoption by small businesses

Despite the compelling benefits in discussion, the adoption of CAS by SMEs is not without challenges, particularly in developing countries. One of the major challenges of CAS adoption is the initial high cost of purchase, launch and maintenance. The initial cost of purchasing accounting software licenses, along with the necessary hardware like computers, servers and other related technologies can be a major barrier for small businesses with limited financial resources. Ongoing maintenance and upgrade costs may become a burden (Makanyeza & Dube, 2016). CAS software requires huge capital investments which may be unavailable for most small businesses. In many cases, small-holder shops find CAS systems beyond their reach. Costs associated with the purchase, licensing and upgrading of CAS technological systems, usually are insurmountable which is beyond the reach of the majority of small-holder shops in developing economies like Zimbabwe. Another challenge that stifles CAS adoption is lack of skilled personnel and small-holder business owners' resistance to change. Effective use of CAS requires IT literacy skills resident on an accounting knowledge base. Small businesses often have no trained staff which is compounded by the high cost of training. (Mascitelli & Arunachalam, 2003). This again can hinder the adoption of CAS by small-holder businesses. Small shops usually have constrained financial budgets which may not be able to satisfy the costs associated with CAS adoption and

implementation. Small shop owners rely on family provided labour, which makes it difficult to attract skilled personnel with relevant skills to operate CAS systems. Employees and even owners who are accustomed to manual systems may resist to shift to the use of new technologies due to fear of job displacement or discomfort with new processes (Huy & Hooi, 2009). In order to have stakeholders accepting CAS, there is need for the assurance of job security to employees who are incentivized through intensive training on the new CAS technologies. This comes with a huge cost for a small-holder business.

Systems integration is potentially a deterring challenge towards CAS adoption. Integrating new CAS with existing business processes that have been a routine legacy may cause despondency (Ismail & King, 2007). When new technology is introduced, there is need to make sure the new technology fits well into the process of the existing systems. CAS integration into operational processes of small shops can be a challenge. CAS adoption may require system overhaul where all the manual accounting currently used by small-holder shops are to be completely remodeled in the CAS systems. This means that there will be need for people with requisite skills to operate CAS systems. Such people with skills may be expensive to hire for small-holder shops. This explains why there are always skills gaps between small-holder shops and other retail competitors. CAS adoption means that the accounting systems may be under cyber threats like phishing and viruses common in this digital era. This results with security threats among small shops that intend to invest and adopt CAS. While CAS can enhance security, concerns about data breaches, viruses, and system failures there is need for adequate on-going security upgrading (Saleh & Al-Sharayri, 2017). It is notable that CAS installation requires basic security standards in place first. Failure to provide a security structure compromises the sensitive financial data for small shops resulting with the small shops becoming victims of prevalent data breaches, now common in this digital era. CAS adoption and installation is also hindered by inadequate support infrastructure. CAS requires adequate infrastructure to support its adoption and implementation. Unreliable power supply and limited internet connectivity which is prevalent in some parts of Zimbabwe, may hinder the effective use of CAS for example transactions to with cloud-based solutions. For small shops to effectively utilize CAS systems, they need to be well connected to the Internet with back up support that is dependable on power supply sources. Current power black outs commonly experienced in Zimbabwe are making it difficult for small shops in the country side to somehow adopt and install CAS systems.

CAS Adoption in Developing Economies and the Zimbabwean Context

Research on CAS adoption in developing countries often portrays the general challenges but emphasizes context-specific factors like infrastructural deficits, technology gaps, economic instability, and lack of institutional will-power support (Grandon & Pearson, 2004). In Zimbabwe, the volatile economic environment presents unique challenges and opportunities for CAS adoption by small businesses. In periods of hyperinflationary regimes small shops are fast to adjust prices, cost tracking as informed by their financial analysis, a laborious task that manual systems struggled to handle with efficiency (Karedza & Govender, 2017). Currency fluctuations and the multi-currency basket approach adopted in Zimbabwe further complicate accounting processes. Therefore, the installation of CAS, particularly on those businesses transacting in multi-currency denominations own devices that enable quick data analysis which is invaluable in a volatile macro-

economic environment. Regardless of the plausible CAS benefits, economic challenges make investments in CAS seem risky and beyond the reach for many small-holder shops.

Theoretical Frameworks for Technology Adoption

Several theories explain technology adoption processes. The Technology Acceptance Model (TAM) suggests that perceived usefulness and perceived ease of use are key determinants of adoption (Davis, 1989). The technology acceptance model is a theoretical framework which postulates that the user's perceptions of usefulness and ease of use regarding new technology are informed by various external factors. Those factors indirectly impact on whether users' attitude motivates the embracing of a new technology. (Davis, 1989). Perceived usefulness refers to the level to which the individual believes that a new technology enhances performance. On the other hand, perceived ease of use refers to the degree to which the individual accepts that the new technology is easy to adopt with minimum effort in learning. In the technology acceptance model, there are no limitations on external variables that may affect the user's perceptions.

The Diffusion of Innovations (DOI) theory on the other hand identifies characteristics of the innovation which have relative advantage, compatibility, complexity, trialability and observability that influences adoption (Rogers, 2003). The Technology-Organization-Environment (TOE) framework considers technological, organizational, and environmental factors that influence adoption decisions (Tornatzky & Fleischer, 1990). This study implicitly draws upon these frameworks by examining factors like perceived benefits that are related to the relative advantage, implementation costs such as complexity and resource availability, staff skills and organizational factors. The TOE framework provides three contexts that may affect an organization's technology adoption process. These are technological, organizational, and environmental (Tornatzky & Fleischer, 1990). While this framework was suitable for explaining technology acceptance and dissemination from the organization's point of view, TOE has frequently been applied in research regarding corporations (Han & Lee, 2008).

Gaps in Literature

While there is general literature on CAS adoption by SMEs, specific studies focusing on small shops in Zimbabwe, particularly those that explore the nuances of adoption within its hyperinflationary and multi-currency context, are under researched. This study aims to fill this gap by providing current, context-specific evidence on the impact of CAS and the challenges faced through combining quantitative performance metrics with rich qualitative insights.

Research Philosophy

This study adopts the pragmatism research philosophy. This philosophy is the best fit for purpose in this study where the research questions are problem-focused. The research seeks to understand not just *what* the economic impact of Computerized Accounting Systems (CAS) is, but also *how* and *why* this impact occurs in the real-world context of small shops in Masvingo. Pragmatism is also chosen in this study because it is the one that best justifies mixed methods research designs. Pragmatism also focuses on tangible results and practical understanding. These are key in the

current research that seeks to provide practical recommendations for small business owners, policymakers, or CAS software developers.

Research Methodology

Research Design

This research employed a mixed-methods research design, combining quantitative and qualitative approaches to provide a comprehensive understanding of the impact of CAS adoption on the economic performance of small shops in Zimbabwe. The sequential explanatory strategy was adopted, where quantitative data was first collected and analyzed, followed by qualitative data collection to help explain and elaborate on the quantitative findings (Creswell & Plano Clark, 2017).

Population and Sampling

The target population for this study comprised small shops operating in selected urban and peri-urban areas of Masvingo, Zimbabwe. Small shops were defined as retail businesses with fewer than twenty (20) employees and an annual turnover that is below \$10 000 (SME Association of Zimbabwe, (n.d.)).

The target population comprised of small shops operating in selected urban and peri-urban areas of Masvingo, Zimbabwe. For the purpose of the study's methodology, small shops were defined as retail businesses with fewer than twenty (20) employees and an annual turnover that is below \$10,000 (SME Association of Zimbabwe, (n.d.)).

A total sample of forty (40) small shops was selected, which was stratified into twenty (20) CAS adopters and twenty (20) non-adopters. A purposive sample of fifty (50) participants was selected for data collection. This group included forty (40) small shop owners (a mix of CAS adopters and non-adopters) who participated in the survey as well as ten (10) accounting professionals or consultants with experience in working with small businesses in Zimbabwe. All the sample categories participated in the semi-structured interviews.

Data Collection Instruments

Quantitative Data

A structured questionnaire was designed to collect data on the shop demographics in terms of how long the business has been in operation, size and sector. Further data was collected with regards to CAS adoption status, type of CAS, duration of use, perceived impact on economic performance metrics. The Likert scale was used in the questionnaire to determine attitudes towards efficiency gains, cost reduction, accuracy, reporting timeliness, profitability) as well as challenges encountered in CAS adoption and use. The questionnaire was pilot-tested with a small group of shop owners for clarity and validity.

In the quantitative phase, economic performance was assessed using several key metrics that directly reflect the financial and operational outcomes for small shops. These metrics were captured through a structured questionnaire that utilized the Likert scale to measure the perceived impact of CAS adoption on a number of metrics. The first metric was that of efficiency gains. This was operationalized by asking respondents to rate improvements in areas such as time saved on accounting tasks, better inventory management, and quicker customer invoicing. The second metric was cost reduction. The perceived reduction in costs associated with manual bookkeeping, stationery, and error correction was measured. Improved Financial Reporting was another metric measured too. The Likert scale assessed the respondents' perceptions on the accuracy and timeliness of generating financial reports that included monthly profit and loss statements and balance sheets. On Profitability metric variable, the respondents provided self-reported measures of overall business profitability and growth over the past two years.

Qualitative Data

Semi-structured interview guides were developed for shop owners in order to gain in-depth insights into their experiences with CAS adoption or non-adoption, the practical benefits and challenges, and coping mechanisms in the volatile economic environment. Accounting professionals were also interviewed to gather expert facts on the trends in CAS adoption by small shops, common implementation pitfalls, and the role of CAS in navigating Zimbabwe's market economic complexities. These qualitative measures were further enriched by qualitative insights from semi-structured interviews, where shop owners and accounting professionals elaborated on these impacts, such as the ability to update costs and selling prices in real time during inflation, improve cash flow visibility, better credit control, and accurate tax compliance.

Pilot Testing

The pilot test was a crucial step in ensuring the clarity and validity of the questionnaire. While not explicitly detailed in the methodology section, the pilot testing process involved administering the questionnaire to a small group of shop owners. The primary objectives was to determine on clarity and comprehension, to ensure that questions were unambiguous and easily understood by the target participants. It was also used to evaluate relevance by confirming that the questions effectively captured the intended data on CAS adoption, economic performance, and challenges. Pilot test was also done to identify ambiguities or redundancies in order to re-define question wording and eliminate double messaging. Based on the feedback from the pilot test, minor adjustments were made to the phrasing of several questions to enhance clarity and precision. For instance, some technical terms were simplified to be more accessible to all shop owners, regardless of their accounting background.

While a formal Cronbach's alpha for reliability was not computed for this qualitative piloting phase, the qualitative feedback directly informed the final version of the questionnaire, ensuring its suitability for the main study. This iterative process of pilot testing and refinement is consistent with best practices in mixed-methods research design.

Data Collection Procedures

During the quantitative phase, researchers administered the questionnaires in person and some via online survey tools where feasible. Consent was obtained prior to participation. During the face-to-face interview phase and the virtual the researcher noted responses.

Data Analysis Techniques

Quantitative data from the questionnaires was coded and analyzed using statistical SPSS software. Descriptive statistics like frequencies, percentages, means and standard deviations were used to summarize shop demographics and the extent of CAS adoption. Qualitative data from interviews transcribed and oral interviews were analyzed using thematic analysis (Braun & Clarke, 2006). This involved, familiarization with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes as well as producing the report.

Ethical Considerations

Ethical approval was sought from the relevant institutional ethics committee. Participants were informed about the purpose of the study, assured of anonymity, confidentiality with their voluntary consent obtained in writing. Consent forms were distributed to participants to have their consent to participant in the study. The authors obtained the participants' approval before engaging them in the study. Data collected from participants was captured in a an anonymous manner that did not reveal the identity of the participants. Pseudonyms were used instead of participants' real names. Participants were assured of the anonymity of their data. Data was stored securely, and findings were reported in a way that does not identify individual participants or businesses.

Findings and Discussion

Quantitative Findings

Extent of CAS Adoption - Survey data indicated partial growth in installation of CAS among small shops in Zimbabwe. Approximately 55% of surveyed small shops reported using some form of CAS, ranging from basic spreadsheet applications to more dedicated accounting software.

Fig 4.1 CAS adopter's vs non-adopters

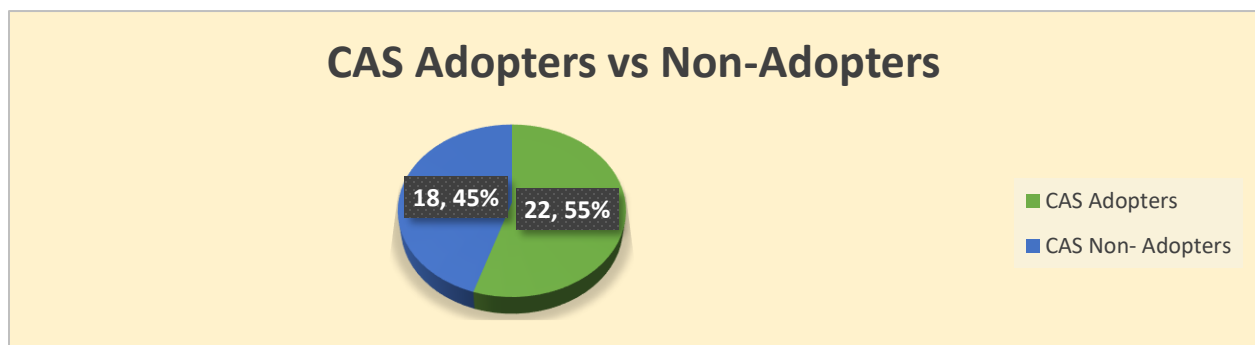


Fig 4.1 shows the Percentage of CAS adopters compared to non-adopters

The graph shows that of the sampled small shops, 55% indicated that they have adopted CAS systems while 45% indicated they have not adopted CAS systems. This shows that CAS systems are generally becoming appreciated in business operations although the level of CAS adoption is yet to improve to international standards.

Impact on Economic Performance

Reduced Operational Costs - Shops that adopted CAS reported a statistically significant reduction in costs associated with manual bookkeeping, stationery, and error correction compared to non-adopters ($p < 0.05$).

Fig. 4.2 Average Operational Costs by CAS Adoption status

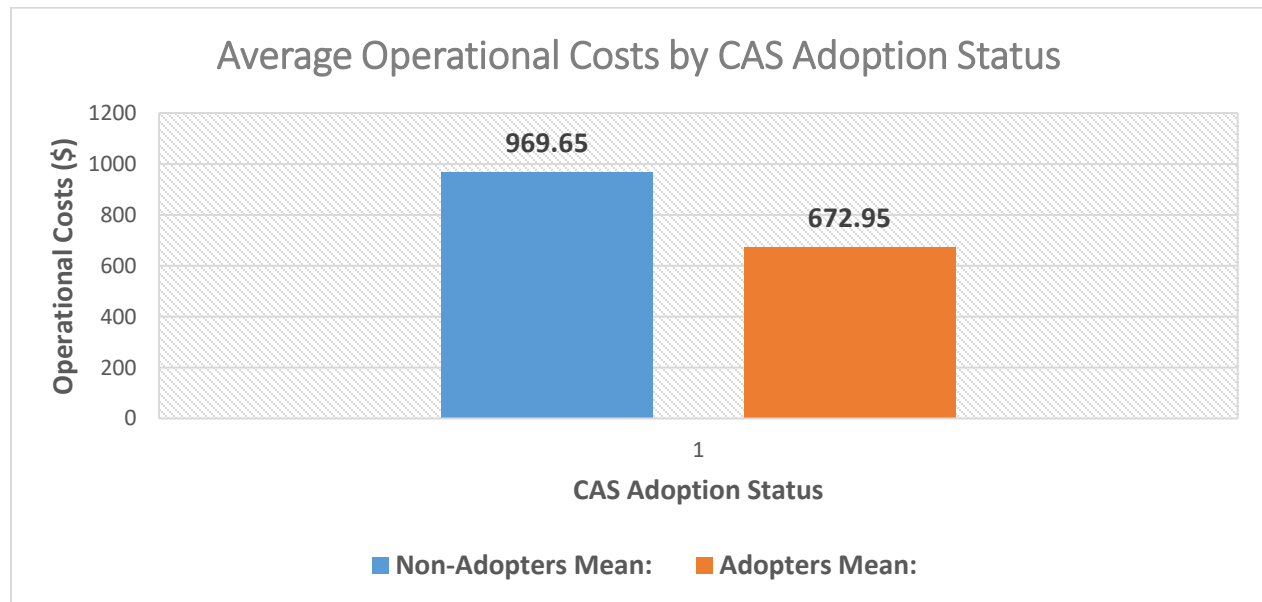


Figure 4.2: Average operational costs by CAS adoption status.

The graph shows that CAS adopters have a lower mean operational cost compared to non-adopters. This clearly shows that shops that have adopted CAS systems have lower operational costs in comparison to those that have not adopted CAS systems. This, therefore can mean that shops that have adopted CAS systems may be more profitable than those that have not adopted CAS systems. While the results showed a significant reduction in operational costs for CAS adopters, the Cohen's d value was used to quantify the magnitude of this difference. A larger Cohen's d value (See Appendix 1) indicates a more substantial practical effect of CAS adoption on operational cost reduction.

Enhanced Data Accuracy - CAS users rated the accuracy of their financial data as significantly higher than non-users. This was attributed to automated calculations and reduced manual entry errors.

Faster Financial Reporting - CAS adoption was strongly correlated with the speed of generating financial reports (e.g., monthly profit and loss statements, balance sheets). Adopters could produce reports in a fraction of the time taken by those using manual systems ($r=0.65$, $p<0.01$).

Fig. 4.3 CAS adoption score vs Financial Report Completion Time

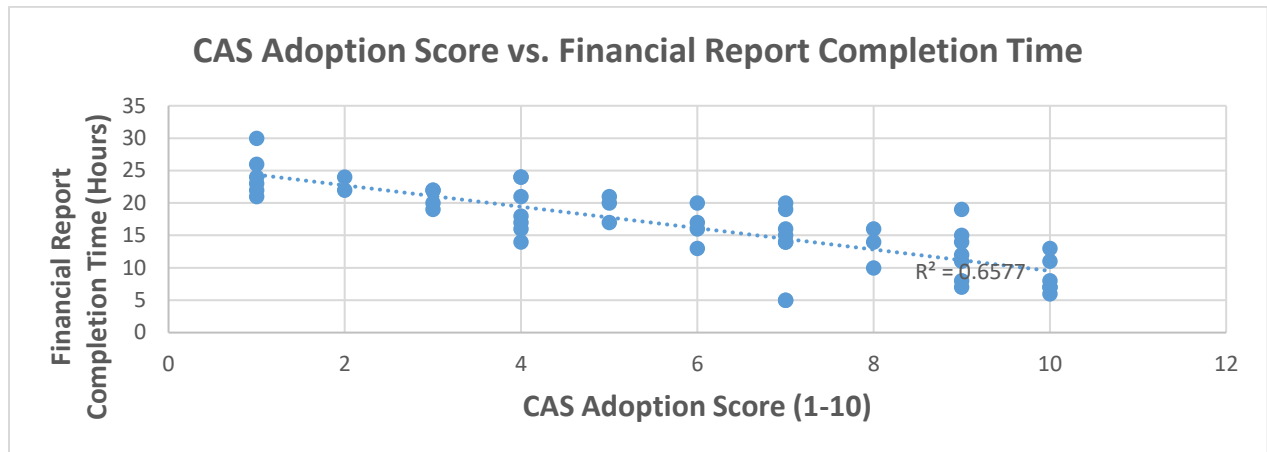


Figure 4.2: CAS adoption versus Financial Report Completion Time

The graph shows the relationship between CAS adoption scores vis viz the financial report completion time in hours. It is evident from the graph that the higher the adoption score, the less the time it takes to prepare financial reports. The R^2 value on the graph indicates the proportion of variance in financial reporting speed that can be explained by CAS adoption. Generally, if R^2 is 0.65, it means 65% of the variation in reporting speed can be attributed to differences in CAS adoption. In this case, $R^2 = 0.6577$ which signifies a strong positive correlation. This means there's a substantial tendency for the speed of financial reporting to increase (i.e., become faster) as CAS is adopted. Although it is not a perfect correlation, it's a significant one, suggesting that CAS adoption accounts for a good portion of the variation in reporting speed.

Improved Profitability- While direct causation is complex, a positive correlation was found between CAS adoption and self-reported measures of profitability and business growth. Shops using CAS were more likely to report increased profitability over the past two years.

Efficiency Gains - Respondents using CAS reported significant improvements in overall operational efficiency, including time saved on accounting tasks, better inventory management, and quicker customer invoicing.

The findings of this study confirm a significant positive correlation between CAS adoption and improved economic performance of small shops in Zimbabwe which is consistent with previous researches in other contexts (Doss et al., 2016; Saleh & Al-Sharayri, 2017). The observed benefits, such as reduced operational costs, enhanced data accuracy, and real-time financial reporting, are crucial for the survival and growth enterprises, especially in the context of Zimbabwe's dynamic market challenging economic environment.

Table 4.1 Comparison of CAS adopter vs non-adopters based on key metrics

Performance Metric	CAS Adopters (Mean \pm SD)	Non-Adopters (Mean \pm SD)	p-value	Effect Size (e.g., Cohen's d)
Operational Costs	Lower	Higher	< 0.05	d = 1.779827
Data Accuracy	Higher	Lower	< 0.01	d = 0.6510
Reporting Speed	Faster	Slower	< 0.01	d = 0.657683
Profitability	Higher	Lower	< 0.05	d = 0.6577
Efficiency Gains	Higher	Lower	< 0.01	d = 0.650

The table shows that CAS adopters have lower operational costs as compared to non-adopters while having higher data accuracy compared to non-adopters. In terms of financial reporting speed, CAS adopters have faster reporting speeds while non-adopters have slower financial reporting speeds. CAS adopters have higher efficiency gains than non-adopters and they appear to be more profitable than non-adopters. The higher Cohen's d value on the metric of operational costs indicates a more substantial practical effect of CAS adoption on operational cost reduction.

Qualitative Findings

The semi-structured interviews with shop owners and accounting professionals provided richer nuances that helped explanations in the quantitative results.

Theme 1: CAS as a Tool for Navigating Economic Volatility

Shop owners who adopted CAS emphasized on its critical role in the Zimbabwean context. One owner stated,

"With inflation causing prices to change almost daily, our CAS allows us to update costs and selling prices in real-time. Manually, this would be a daunting task and we would lose a lot of money."

Accounting professionals validated the above, noting that CAS facilitates real-time re-evaluation of assets and liabilities which is an essential intervention during hyperinflation periods, a move possible in a multiple basket of currencies simultaneously in circulation. The ability to track transactions in multiple currencies or switch base currencies was highlighted as a key advantage by some users of more advanced CAS.

Theme 2: Enhanced Financial Management and Decision-Making

CAS adopters reported improved financial discipline.

"Before CAS, we were operating in darkness. Now, I can chase my cash flow in terms of, who owes me money, and which products are most profitable at any given time," shared a hardware shop owner.

This improved visibility enabled more strategic purchasing decisions, better credit control, and more accurate tax compliance. Accounting professionals noted that clients using CAS were generally better prepared for financial consultations and audits.

Theme 3: Implementation Hurdles and Frustrations

Despite the benefits, challenges were significant, aligning with the quantitative findings.

Cost Barriers: *"The initial cost for good software and a reliable hardware infrastructure was a big constraint for us,"* explained a grocery shop owner. This sentiment was common, especially for businesses struggling with cash flow.

Training and Skills Gap

Several owners mentioned the difficulty in finding or affording staff with the necessary skills. *"When we bought the software and hardware required, there was great need to train the staff and that took more time and money. Some were also resistant to the change,"* one participant noted. Accounting professionals highlighted that inadequate training often led to underutilization of CAS features.

System Integration and Technical Issues

Some shops faced difficulties in integrating CAS with other systems (e.g., point-of-sale). Unreliable power supply was a recurring concern among participants. *"With the current power challenges, if power goes down, our system is down unless the generator is on, which adds another cost,"* lamented a shop owner. Software compatibility and the availability of local technical support were also mentioned.

Theme 4: The "Necessary Evil" and Competitive Pressure

Many shop owners, even those facing challenges, viewed CAS adoption as a "necessary evil" to remain competitive and compliant. The increasing digitization of transactions by suppliers and the requirements by tax authorities e.g., for fiscalised systems were also pushing factors.

The qualitative insights powerfully underscore the strategic importance of CAS in managing hyperinflationary pressures and currency fluctuations. The ability to quickly adjust pricing, track multi-currency transactions, and generate timely financial intelligence reports, provide CAS-

installed businesses with a distinct advantage (Karedza & Govender, 2017). This adaptability is a key component of resilience for small shops in Zimbabwe.

However, the study also discusses the substantial barriers to CAS adoption and its effective utilization, highlighted in the abstract and triangulated by both quantitative and qualitative data. The challenges of implementation costs, staff training, and system integration issues (Makanyeza & Dube, 2016; Mascitelli & Arunachalam, 2003) are particularly acute for resource-constrained small shops in Zimbabwe. These obstacles can prevent businesses from fully realizing the potential benefits of CAS and may even lead to disillusionment with the technology if not properly addressed.

The findings align with the TOE framework, where technological factors with respect to the perceived benefits of CAS and organizational factors in terms of owner's innovativeness, staff skills, financial resources, economic volatility, competitive pressure and infrastructure all play a role in the CAS adoption decision. (Tornatzky & Fleischer, 1990). The Zimbabwean context amplifies the importance of environmental factors which makes the adaptive capabilities offered by CAS highly valuable although simultaneously the technology made the resource-related organizational factors more challenging.

Limitations

The primary limitations of this study include:

Sample size and selection. Where the study utilized a sample of forty (40) small shops and a purposive sample of fifty (50) participants, including shop owners and accounting professionals. While this mixed-methods approach provided valuable insights, the relatively small sample size might limit the statistical power for detecting subtle effects and the generalizability of findings to the entire population of small shops across Zimbabwe. Another limitation is that of regional bias where the study was specifically focused on small shops operating in selected urban and peri-urban areas of Masvingo town, Zimbabwe. This regional focus means that the findings may not be fully representative of small shops in other regions of Zimbabwe, which may have different macro-economic conditions, infrastructure, or levels of technology adoption. In addition to that, self-reported data was another notable limitation. A portion of the research's quantitative data relied on self-reported measures of economic performance for example profitability and efficiency gains. While efforts were made to ensure accuracy, self-reported data may be subject to recall bias or social desirability bias. This may result in inaccurate findings. The Dynamic Economic Environment in Zimbabwe also presents another limitation. Zimbabwe's economic landscape is characterized by hyperinflation and currency fluctuations, which are dynamic and can change rapidly. This inherent volatility means that the observed impacts and challenges of CAS adoption may evolve over time, potentially limiting the long-term applicability of some findings. These limitations highlight areas for future research and underscore the need for cautious interpretation when extrapolating findings beyond the specific context of this study.

Conclusion and Recommendations

Summary of Key Findings

This research investigated the impact of CAS adoption on the economic performance of small shops in Zimbabwe. Key findings indicate:

1. A notable, though not universal, level of CAS adoption among small shops.
2. A significant positive correlation between CAS adoption and improved business economic performance, manifested in reduced operational costs, enhanced data accuracy, faster financial reporting, and improved decision-making.
3. CAS plays a crucial role in helping small shops navigate the complexities of Zimbabwe's economic environment, particularly hyperinflation and currency volatility.
4. Significant challenges to CAS adoption and effective implementation persist in terms of installation capital, ongoing maintenance costs, staff training costs, deskilling and skills upgrading among technical systems integration and unreliable infrastructure.

Implications of findings to practice, policy and theoretical framework

The article outlines several implications of the research findings.

Implications for Practice (for Small Shop Owners): The findings provide valuable insights to small shop owners in Zimbabwe, guiding their decisions regarding technology investment and streamlining business processes. Specific recommendations are given, such as adopting systems in phases starting with affordable, basic solutions, investing in training for owners and staff; researching user-friendly and affordable CAS options, and planning for infrastructure needs like backup power.

Policy Implications

Building on our findings and the identified challenges, specific policy measures that policymakers and support institutions could implement include:

Targeted Subsidies and Tax Incentives for CAS Adoption: The initial cost of CAS software and hardware is a major barrier for small businesses. Policymakers in Government could introduce direct subsidies for the purchase of entry-level CAS solutions for cloud-based accounting systems that offer lower upfront costs and flexible subscription models. Additionally, tax credits or accelerated depreciation allowances for technology investments by small shops could incentivize on adoption and installation.

Structured Capacity Building Programs: Beyond general training, government and SME associations should develop and fund tailored training programs that focus on practical CAS usage, digital literacy, and financial management skills that are relevant to Zimbabwe's economic market contexts. These programs could be launched at vocational training centers, universities and CAS vendors.

Investment in ICT Infrastructure Development: The study highlighted unreliable power supply and limited internet connectivity as significant hindrances to CAS adoption. Policymakers must prioritize investment in reliable electricity grids and expand affordable internet access across urban and peri-urban areas to create a foundational environment conducive to digital transformation for small businesses.

Promotion of Localized, Affordable CAS Solutions: Government and support institutions could encourage and support local software developers to create user-friendly, multi-currency CAS customized solutions designed specifically for the Zimbabwean market. The market landscape is characterized by unique challenges of hyperinflation and currency fluctuations. The market deserves CAS seed funding, incubation support in the form of built transfer and operate, and political will on market access initiatives.

Establishment of Technology Adoption Hubs: Creating business incubation hubs or digital transformation centers that offer shared access to CAS, technical support, and expert advice at subsidized rates could significantly minimize the entry barrier for small shops. These hubs could serve as platforms for peer learning and knowledge sharing among small business owners.

These specific policy recommendations aim to directly address the key challenges identified in our study which may foster an enabling environment for CAS adoption and installation. That way, CAS technologies may maximize contributions to sustainable economic growth in Zimbabwe.

Theoretical Implications:

The study contributes to the academic literature on technology adoption by SMEs in developing economies. It specifically aims to fill a gap in the literature about CAS adoption within Zimbabwe's unique hyperinflationary and multi-currency context. The findings are shown to align with and provide context-specific findings for the adoption of CAS technologies.

Technology-Organization-Environment (TOE) framework, The theory demonstrates technological benefits of CAS. The theory operates in organizations that have deskilled and upskilled manpower that fit for purpose to do small shop business using appropriate technologies.

Conclusion

The adoption of Computerized Accounting Systems offer substantial benefits to small shops in Zimbabwe that contributed positively to their economic performance and resilience. In an economy characterized by volatility, the efficiency, accuracy, and timely financial insights provided by CAS are not just advantageous but increasingly essential for small holder shop survival and competitiveness. However, the path to successful CAS adoption and installation is fraught with challenges that can hinder the full realization of these benefits. Overcoming these hurdles requires concerted collaboration from shop owners, technology providers, and policymakers.

Recommendations

Recommendations for Small Shop Owners

For small shop owners, a number of recommendations were made. Firstly, it was recommended for shop owners to have a phased adoption process where the owners are encouraged to start with basic, affordable CAS solutions that satisfy core needs and gradually upgrade as the business grows and benefits are realized. Cloud-based solutions with subscription models might offer lower upfront costs. Secondly, shop owners were encouraged to invest in manpower training. The first important step towards CAS adoption for shop owners would be to prioritize training for owners and staff. Shop owners need to explore options like online tutorials, workshops offered by software vendors, or peer-to-peer learning. This will make the adoption process smooth and easy. Small shop owners were also expected to seek affordable solutions. In order to find affordable solutions, small shops must carry out a thorough research and compare different CAS options that focuses on user-friendliness, affordability and overhead maintenance costs. Open-source alternatives could be explored that provide technical expertise. Another recommendation was for small shops to plan for infrastructure. CAS requires reliable power and therefore small shops must invest in backup power solutions (e.g., UPS, inverters) to mitigate the impact of power outages. Small shops should also consider CAS software that operates offline and in sync when electricity connectivity is restored.

Recommendations for policymakers and support Institutions (Government, SME Associations, NGOs)

Government can support CAS adoption through financial support mechanisms in the wake of built operate and transfer (BOT). Government must develop programs to subsidize the cost of CAS software and hardware for small shops, or offer tax incentives for technology adoption. Capacity building initiatives are also key where policy makers and Government should facilitate and fund training programs on digital literacy and CAS operations customized to the needs of small shop owners and their employees. Training can be escalated to partnerships with vocational training centers and universities. Another responsibility of Government and other policy makers is to improve ICT infrastructure. Efforts to improve the reliability and affordability of electricity and internet connectivity, which are foundational for digital transformation are key for CAS adoption and implementation, hence the need for such to be prioritized. Awareness campaigns with regards to CAS adoption is a responsibility of the Government. Government through the responsible line Ministry must launch awareness campaigns to highlight the benefits of CAS and showcase success testimonies from local small shops. This will inspire many other small shops to adopt and implement CAS technologies. Last but not least, there is need for the establishment of business incubation hubs that provide access to shared CAS technology advice and resources.

Recommendations For Software Developers and Vendors:

Software Developers must develop context-specific CAS solutions that are affordable, user-friendly, and tailored to the specific needs of small shops in Zimbabwe. These should include robust multi-currency CAS software that support transaction in high and unpredictable inflation environments. They also need to provide local support and training to their customers. Software

developers must also offer accessible and affordable customer support and training in local languages. Apart from that, software developers may offer flexible pricing models. Software developers must consider offering flexible payment plans or subscription models that are manageable for small businesses with fluctuating cash flows.

Suggestions for Future Research

1. Long period research studies

There is need to conduct longitudinal studies to track the impact of CAS adoption on small shop performance over a longer period.

2. Comparative Analysis

It is important to compare the effectiveness of different types of CAS (e.g., cloud-based vs. on-premise, industry-specific vs. general) for small shops in Zimbabwe.

3. Role of Mobile CAS

Research to investigate the adoption and impact of mobile-based accounting applications, which might offer greater accessibility and affordability is also necessary.

4. Broader Digital Transformation

Explore how CAS adoption integrates with other digital technologies (e.g., e-commerce, online payment systems) within small shops.

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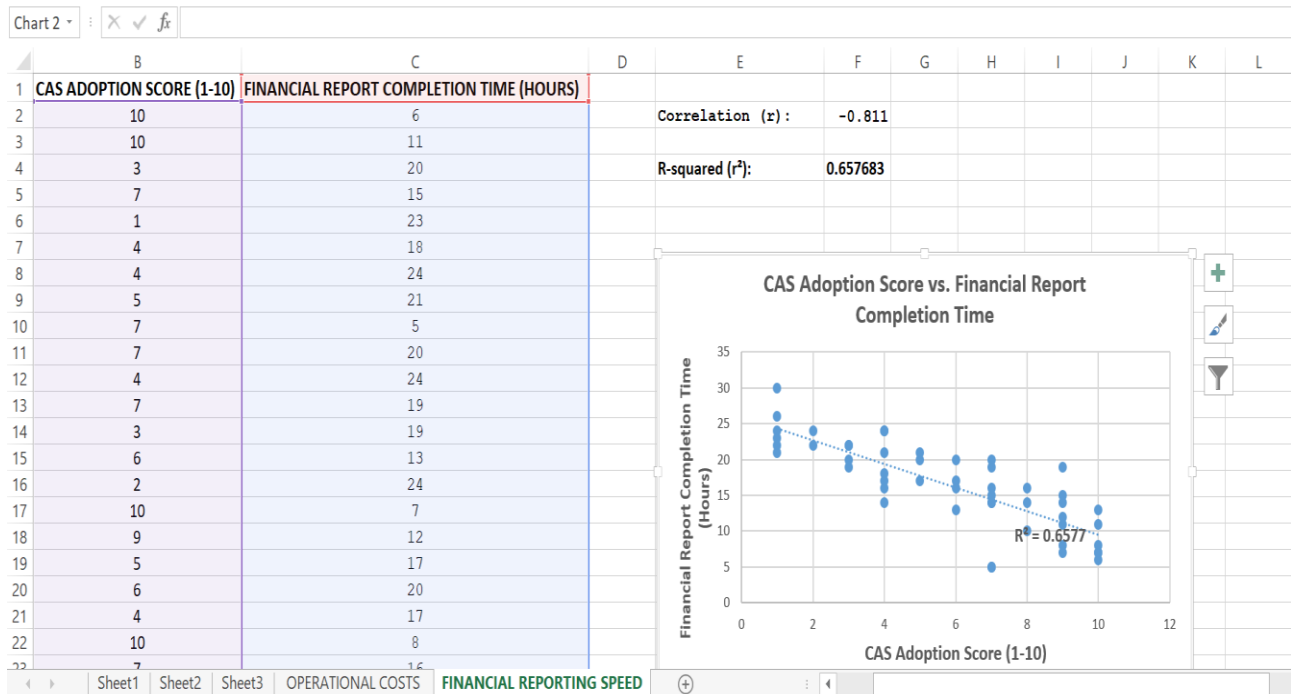
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APPENDICES

APPENDIX 1: CAS adoption vs Operational costs incurred

Chart 1 ▾								✕ ✓ f _x	
	A	B	C	D	E	F	G		
1	SHOP ID	CAS ADOPTER	OPERATIONAL COSTS						
2	1	YES	584		Non-Adopters Mean:	969.65			
3	2	NO	1228						
4	3	YES	720		Non-Adopters Std Dev:	138.422			
5	4	YES	670						
6	5	YES	885						
7	6	NO	1219		Adopters Mean:	672.95			
8	7	NO	1010						
9	8	YES	805		Adopters Std Dev:	190.835			
10	9	NO	1036						
11	10	NO	1047						
12	11	NO	788		Non-Adopters Count (n1):	20			
13	12	NO	713						
14	13	NO	966		Adopters Count (n2):	20			
15	14	NO	863						
16	15	YES	504		Pooled Std Dev:	166.702			
17	16	NO	964						
18	17	YES	653		Cohen's d:	1.779827			
19	18	YES	567						
20	19	NO	1097						
21	20	YES	594						

APPENDIX 2: CAS adoption score vs Financial Report Completion Time



APPENDIX 3: Comparison of CAS adopter and non-adopters against different metrics

Performance Metric	CAS Adopters (Mean ± SD)	Non-Adopters (Mean ± SD)	p-value	Effect Size (e.g., Cohen's d)
Operational Costs	Lower	Higher	< 0.05	d = 1.779827
Data Accuracy	Higher	Lower	< 0.01	d = 0.6510
Reporting Speed	Faster	Slower	< 0.01	d = 0.657683
Profitability	Higher	Lower	< 0.05	d = 0.6577
Efficiency Gains	Higher	Lower	< 0.01	d = 0.650

**Autocratic leadership style and employee performance in Zimbabwe's public sector
Procurement Management Units (PMU): mediating role of Electronic Government
Procurement (e-GP)**

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Abstract

Procurement Management Units (PMUs) in Zimbabwe continually strive to enhance their performance to remain viable within an increasingly dynamic and complex environment. In line with Zimbabwe's Second Republic emphasis on improved performance to fulfil its economic blueprints, employee job performance has emerged as a critical success factor. Despite the formal adoption of e-GP in Zimbabwe's PMUs, inefficiencies and irregularities continue to persist, as consistently evidenced by the Auditor-General's Reports from 2017 to 2023. Among the numerous determinants of job performance, the autocratic leadership style has received considerable attention. Therefore, this study sets out to examine the impact of leadership styles on the performance of employees in Zimbabwe's PMUs with a particular focus on the mediating role of electronic Government Procurement (e-GP). A cross-sectional survey design was employed, targeting PMU professionals across Government Ministries, Departments and Agencies (MDAs) located in provincial centres, specifically Harare, Bulawayo, Gweru, Masvingo, Mutare and Chinhoyi. Five theoretical frameworks underpin the study: the Situational Leadership Theory, which posits that leadership effectiveness depends on contextual dynamics; Institutional Theory, which recognises institutional pressures in policy adoption; Stewardship Theory, which views managers as stewards of organisational interests; the Diffusion of Innovation Theory, explaining the adaptation to digital transformation; and the Path-Goal Theory, which explores how leaders facilitate employees in achieving performance goals. Systematic sampling was utilised to collect quantitative data between April and May 2025 through structured survey questionnaires. These questionnaires captured demographic variables and constructs relating to autocratic leadership styles, task and contextual performance, and the mediating effect of e-GP. Data analysis was conducted using Partial Least Squares Structural Equation Modelling (PLS-SEM), alongside descriptive statistics (mean, frequency), correlation analysis, and hypothesis testing. Instrument reliability was assessed using Cronbach's alpha, and inferential statistics employed p-values (<0.05) to test significance. The final sample comprised 67% male and 39% female respondents, with 4% unspecified. The modal age range for professional experience in PMUs was 41–45 years. Structural Equation Modelling Partial Least Squares (SEM-PLS) results indicated statistically significant relationships between autocratic leadership styles and employee performance in PMU. All hypotheses were supported, and the mediating role of e-GP constitutes a novel contribution to autocratic leadership and performance studies in the Zimbabwean context. In light of the findings and conclusions of the study, an integrated hybrid leadership style framework is recommended to enhance employee performance mediated by electronic Government Procurement. This framework should prioritise the institutionalisation of leadership training and participatory decision-making, with strategic autocratic enforcement skills necessary for ensuring compliance, discipline, and consistent execution of procurement reforms. This balanced approach is critical for optimising both employee engagement and accountability, particularly in the implementation of digital platforms such as electronic Government Procurement (e-GP).

Keywords: Autocratic, employee performance, electronic Government Procurement, situational, institutional, steward, path goal, stewardship, and positivism.

Introduction

Leadership, which is an important aspect of every Procurement Management Unit (PMU), has in the past attracted considerable attention and extensive discussions regarding the success and results of organisations (Gans Morse et al., 2021). Leadership style is the unique approaches and tactics used to guide, implement plans, and motivate individuals (Alo et al., 2025). This aspect of leadership is crucial in shaping the culture within a PMU, guiding its strategic direction and having great impact on the behaviour, attitudes, empowerment, and motivation of employees (Hussein et al., 2020). Furthermore, the selection of a leadership style has a substantial impact on team dynamics, decision-making procedures and the ability of a public PMU to adjust to changing market conditions and challenges (Al Hammadi, 2021).

The main aim of the study is to investigate whether the autocratic leadership style influences employee performance. The specific objectives of the study are: to determine whether autocratic leadership style influences employee performance in Zimbabwe's public sector PMU; to determine whether the relationship between autocratic leadership style and employee performance is mediated by e-GP in Zimbabwe's public sector PMU, and to propose a leadership style framework that can enhance employee performance in Zimbabwe's public sector PMUs. The significance of leadership in steering organisations cannot be overemphasized as it influences every aspect of the organization (Alsheikh et al., 2023). An autocratic leadership style would be appropriate, for example, in the face of new employees who join the PMU or when a new system is introduced as in this case, those who absent themselves occasionally, particularly after pay day or every Monday of the week, and where it is necessary to show command and control (Avolio, 1999; Li et al., 2021). In contrast, this style of leadership would not be appropriate for mature employees and those who have been with the PMU for too long (Li et al., 2021).

Electronic Government Procurement (e-GP) enables PMUs to harness technologies towards improved operations, decision-making, service delivery, and strategic objectives (Vial, 2021). Automation optimizes workflows, surfaces insights and personalized interactions, leveraging process integration, machine learning algorithms, and natural language programming (Gräfe et al., 2024). Recent public sector digital transformations are integrated along with examples demonstrating responsive e-GP capacities in data-driven decision analytics, automation, customer interface modernization, and work force enhancement (Ida, 2024). Employee performance is a multidimensional construct that encompasses both task performance and contextual performance (Sonnertang & Frese, 2002; Elsner et al., 2024). Task performance refers to the core technical duties undertaken by employees within PMUs, which directly contribute to the unit's functional efficiency. In contrast, contextual performance encompasses non-technical, discretionary behaviours that support the organisational environment, such as commitment, initiative, and citizenship behaviour (Elsner et al., 2024).

Literature Review: Theoretical framework and hypotheses development

According to Hersey and Blanchard (1974), Ahmed (2025), and Nasr et al. (2025), Situational Leadership Theory (SLT) posits that effective leadership depends on the maturity or readiness of followers, defined by their competence and commitment. Leaders must adjust their behaviour, ranging from directive to delegating, based on the needs of employees in specific contexts (Nasr et al., 2025). SLT informs the rationale that no single leadership style (autocratic) is universally

effective. According to Di Maggio & Powell (1983), Malik et al. (2025), and Khurshid et al. (2025), Institutional Theory (IT) explains how PMUs respond to external pressures through isomorphic change, coercive (legal mandates), mimetic (imitation), or normative (professional norms), to maintain legitimacy. Information Technology (IT) is pivotal for explaining leadership behaviour within the rigid structures of Zimbabwe's public procurement, governed by instruments such as the Public Procurement and Disposal of Public Assets (PPDPA) Act and Statutory Instrument (SI 5 of 2018. Limitations: The theory tends to understate individual agency and may not adequately explain divergence in implementation outcomes across similar institutions. Stewardship Theory (ST) suggests that stewards are intrinsically motivated to serve PMU interests (Davis et al., 1997; Donaldson & Davis, 1991; Hafke & Erlend, 2024). Unlike Agency Theory, it sees leaders as trustworthy and aligned with PMU goals. ST is particularly relevant for public entities where leaders must demonstrate trust, transparency, and commitment to public value. A leadership style does not align with stewardship principles, where it fosters trust and engagement during e-GP implementation (Hafke & Erlend, 2024). However, ST has a limitation in that it may idealise leadership behaviour by assuming altruism, which is not always evident in highly politicised or resource-constrained public sectors.

Diffusion of Innovation (DOI) Theory (Rogers, 1962; 2003; Call & Herber, 2022; Shipra et al., 2024) explains how innovations like e-GP spread through organisations. Adoption is influenced by perceived attributes (such as relative advantage, compatibility, and complexity) and adopter categories (for example, early adopters and laggards). DOI Theory is instrumental in assessing how leadership styles influence the rate and effectiveness of e-GP adoption (Shipra et al., 2024). Autocratic leaders tell employees what to do in the face of DOI (Shipra et al., 2024). However, the theory has a limitation in that it focuses more on the adoption process than on sustained engagement or institutionalisation of innovations, especially in public bureaucracies.

Path-Goal Theory (PGT) posits that leaders improve performance by clarifying paths to goals and removing obstacles (House, 1971; Northouse, 2021). It supports adaptive leadership styles, which are directive, participative, supportive, achievement-oriented, and tailored to follower and task characteristics (Northouse, 2021). In PMUs, leaders navigating e-GP systems can use PGT principles to provide clarity and support. Autocratic styles offer structure. However, PGT has two major limitations. Firstly, PGT is challenging to operationalise due to the multiplicity of mediating variables. Secondly, it may be more descriptive than prescriptive.

Research hypotheses

H₁: Autocratic leadership style has a significant influence on employee performance within Zimbabwe's public sector PMUs.

H₂: The relationship between autocratic leadership style and employee performance in Zimbabwe's public sector PMUs is mediated by e-GP.

Conceptual Framework

The study's conceptual framework hypothesized that leadership styles significantly predict employees' performance in PMUs, positively or negatively. In addition, it is hypothesized that e-GP mediates the relationship between autocratic leadership style and employee performance.

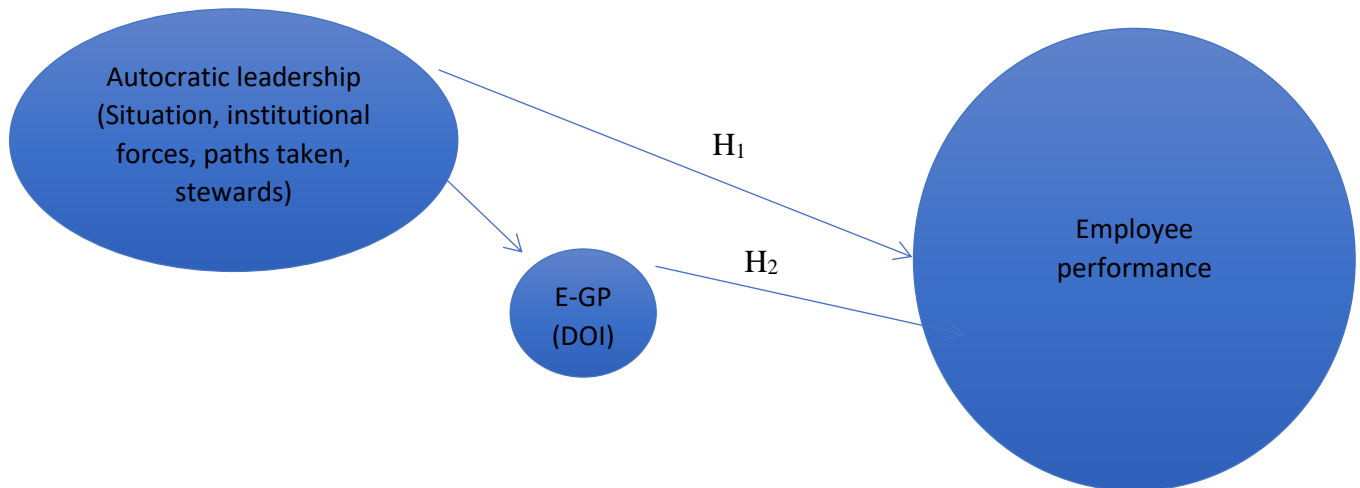


Figure 1: Proposed Conceptual framework and the hypotheses of this study

Source: Researcher's conceptualisation, adapted from Mergel et al. (2019).

Gaps from the Reviewed Literature

Despite the growing body of literature on leadership styles, employee performance, and e-GP, critical gaps remain that warrant scholarly attention, particularly in public sector procurement contexts. Much of the extant research originates from the private sector, offering limited applicability to the highly regulated and politically influenced environment of public procurement (Northouse, 2023). Furthermore, existing studies tend to narrowly conceptualise employee performance, focusing predominantly on task efficiency while overlooking contextual aspects such as innovation, compliance, and ethical conduct (Bertot et al., 2020). Although e-GP is frequently cited for its role in enhancing transparency and operational efficiency, its broader implications for decision-making quality, job satisfaction, and inter-organisational collaboration remain underexplored (Thai, 2022).

Equally lacking is empirical evidence on the mediating role of e-GP between leadership styles and employee performance, particularly using robust methodologies like Structural Equation Modelling (SEM) (Judge & Piccolo, 2022). Moreover, few studies investigate the human and organisational barriers, such as resistance to change, inadequate training, lack of user buy-in, and digital skills gaps, that influence e-GP adoption success (Carter & Weigelt, 2020). Longitudinal analyses are scarce, with most research assessing short-term impacts and neglecting the evolving demands of digital procurement systems (Snellman et al., 2021). Contextual mediators, including institutional culture and procurement complexity, are also under-theorised (Esteve et al., 2022).

Finally, there is a notable absence of comparative and mixed-methods studies that examine the differential influence of autocratic leadership on e-GP effectiveness. This research addresses these gaps by focusing on Zimbabwe's public sector, integrating theoretical perspectives and empirical approaches to provide a more holistic understanding of the autocratic leadership–technology–performance nexus within PMU employees (Somech, 2022).

Methodology

This research adopts a positivist philosophical framework to investigate the relationship between autocratic leadership style and employee performance as well as the mediating role of e-GP (Cresswell, 1994). Positivism, as a philosophical stance, asserts that social reality is objective, singular, and can be understood through empirical observation and the application of the scientific method (Ma & Ma, 2022). This paradigm emphasises the importance of observable facts, quantifiable data, and the establishment of causal relationships through rigorous testing of pre-defined hypotheses (Park & Wang, 2025). Consistent with the positivist stance, a deductive research approach was adopted. Given the aim to examine relationships between variables and the mediating role of e-GP, SEM was employed (Cepeda et al., 2024; Harlow, 2023). A survey-based data collection strategy used standardised questionnaires as the method for gathering quantitative data from a representative sample of public sector employees (Mansour, 2024). According to Cresswell et al. (2025), a study population is a subset of the target population and is a well-defined collection of individuals or objects who are the focus of scientific inquiry. In this case study, the population refers to individuals who lead PMUs and the workers under them. In determining the sample size, Yamane's (1967) formula was used at a 95% confidence level and a precision level of 0.5, giving a sample size of three hundred and twenty. From the 150 Ministries, Departments, and Agencies, 10 staff members were chosen to provide a total population of 1,500.

$$n = \frac{N}{1 + N(e)^2}$$

Where:

- n = sample size
- N = population size
- e = level of precision (0.05)

Applying this formula yields:

$$n = \frac{1500}{1 + 1500(0.05)^2} = \frac{1500}{1 + 1500(0.0025)} = \frac{1500}{4.75} = 316$$

An explanatory research design was used in the study, where the relationship among the variables of autocratic leadership style was viewed to influence employee performance through e-GP by asking why and how it happened. A survey-based data collection strategy was employed, utilising standardised questionnaires as the principal instrument for gathering quantitative data from a representative sample of public sector employees. This approach enabled the systematic collection of consistent data across multiple constructs such as leadership styles, e-GP implementation, and employee performance, thereby ensuring comparability and reliability of responses. The use of standardised instruments facilitated the efficient capture of data from a large and geographically dispersed sample, supporting robust statistical analysis and enhancing the generalisability of the findings to the broader population of interest (Mansour, 2024).

Employee performance was measured using validated scales encompassing both task and contextual performance dimensions, based on the short-form job performance measure (Koopmans et al., 2014; Elsner, 2024). A systematic probability sampling technique was also applied to ensure representativeness within the target population of Zimbabwean PMUs (Cochran, 1977; Cepeda, 2024). Sample size determination, however, followed statistical power analysis principles to ensure sufficient sensitivity for detecting hypothesised effects (Cohen, 1988; Samuel & Leonhard, 2025).

The data collection was conducted through online questionnaires, ensuring confidentiality and adherence to ethical protocols, including informed consent. Quantitative data were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM) to evaluate the proposed relationships and mediation effects (Waqar & Paracha, 2024). This included descriptive statistics, path modelling, and statistical significance testing using p-values and t-statistics, enabling a rigorous examination of the influence of autocratic leadership style and e-GP on employee performance.

Ethical integrity was a cornerstone of this study, guided by the standards of responsible research conduct within a positivist paradigm. Informed consent was obtained from all participants through a detailed information sheet and a formal consent mechanism embedded in the questionnaire. This document (see A-The questionnaire) clarified the study's aims, the voluntary nature of participation, the assurance of anonymity and confidentiality, and was stored and used exclusively for academic purposes (Saunders et al., 2019). Anonymity was preserved by avoiding the collection of identifiable information and reporting results only in aggregate form. To further ensure confidentiality, both digital and paper data were stored securely, with access restricted solely to the principal researcher. Participation was entirely voluntary, and respondents retained the right to withdraw at any stage without penalty. Data collection was conducted via a secure online platform with encrypted access, and rigorous data management protocols were followed, including password protection, access limitation, and time-bound retention aligned with ethical guidelines. The survey instrument was carefully worded to minimise discomfort, and reassurances were provided to encourage candid responses. To uphold objectivity and reduce researcher bias, the study employed validated scales, standardised instruments, and quantitative analysis techniques consistent with positivist research traditions. Accuracy was further enhanced through pilot testing, clear participant instructions, and systematic data cleaning. These ethical safeguards collectively ensured that the study was conducted in a transparent, secure, and professionally responsible manner, while protecting participants' rights and generating valid, generalisable knowledge. Ethical integrity was a cornerstone of this study, guided by the standards of responsible research conduct within a positivist paradigm. Prior to data collection, ethical clearance was secured from the Midlands State University Research Ethics Committee, ensuring that all protocols conformed to institutional and disciplinary expectations (Creswell et al., 2025; Davis et al., 1991).

Findings

Prior to hypotheses testing, the validity and reliability of the measurement instrument were evaluated. Cronbach's alpha and composite reliability scores were used to assess internal consistency. SEM-PLS was conducted using SmartPLS 4 software to examine hypothesised relationships. The model fit and R^2 (tables 2 and 3) values were analysed to assess the variance explained in the endogenous constructs, e-GP, and employee performance. The responses represent a comparative analysis of participant responses across core constructs, including autocratic leadership styles, employee performance, and the mediating role of e-GP, using the Likert scale categories (from "Strongly Disagree" to "Strongly Agree").

The R-square measures the proportion of variance in the dependent variables that is explained by the independent variables in a regression model (Dwivedi et al., 2020). Table 1 summarises the results.

Table 1: Goodness of fit

R-Square Overview Table			
	Construct	R-square	R-square Adjusted
1	E-GP	0.499	0.488
2	Employee performance	0.299	0.279

Fit model indices provide rich sources of information about the structural equation model's goodness-of-fit to the data.

Table 2: R-Square Overview

Fit Index	Value
SRMR	0.049
d_ULS	0.837
d_G	0.653
Chi-square	1023.45
NFI	0.912

Table 3: Model Fit Summary

Fit Index	Value
SRMR	0.049
d_ULS	0.837
d_G	0.653
Chi-square	1023.45
NFI	0.912

SRMR (Standardised root mean square residual): 0.099

The Standardised Root Mean Square Residual (SRMR) assesses the discrepancy between the predicted and observed correlations; the lower the value, the better the model fit. An SRMR value below 0.08 is generally considered indicative of a good model fit (Hu & Bentler, 2020; Henseler et al., 2020). The SRMR value for this model is 0.099, which slightly exceeds this threshold, signifying a moderate fit. This suggests that although the model represents the data relatively well,

refinements, such as improved indicators or revised model specification, may enhance its overall fit and explanatory power.

D_ULS (Squared Euclidean Distance) and d_G (Geodesic Distance)

These are different indices applied in PLS-SEM to determine model fit. Low values are often signs of a good fit, but cut-off values for such indices are not well-consented to (Henseler et al., 2020). Their equal values between the estimated and saturated model mean no model misspecification between the two models.

Chi-square: 669.566

These indices are commonly employed in PLS-SEM to assess the model's goodness-of-fit. While lower values generally indicate a better fit, there is limited consensus on universal cut-off thresholds (Henseler et al., 2020). When the values for the estimated and saturated models are equal or nearly identical, this suggests that there is no significant model misspecification, indicating consistency and structural adequacy between the hypothesised and fully saturated models.

NFI (Normed Fit Index): 0.626

NFI ranges between 0 and 1, with higher values closer to 1 indicating better model fit (Bentler & Bonett, 1980). Generally, values above 0.90 are regarded as indicative of a good fit (Bentler, 1990). The model's NFI of 0.626 falls below this benchmark and thus suggests a limited fit between the observed data and the hypothesised structure. This may point to model complexity or potential issues in measurement specification. The overall fit indices indicate that the structural model demonstrates a moderate fit with the data. The SRMR slightly exceeds the recommended threshold, and the NFI remains low, implying that the model could benefit from further refinement. Nevertheless, since PLS-SEM prioritises predictive accuracy over model fit (Hair et al., 2022), these results may still be considered adequate for theory testing and exploratory analysis in complex models such as those examining leadership styles, e-Government procurement, and employee performance.

Construct reliability and validity.

Table 4: Construct reliability and validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Autocratic leadership	0.750	0.758	0.838	0.564
E-GP	0.788	0.812	0.857	0.552
Employee performance	0.750	0.745	0.839	0.567

The findings confirm valid construct validity and reliability for measured constructs. Cronbach's alpha values are between 0.750 and 0.788, which is above the usual standard of 0.70, indicating good internal consistency of measurement items (Nunnally & Bernstein, 2021). Composite reliability (rho_a), (rho_c), and average variance extracted (AVE) were from 0.745 to 0.812, 0.838 to 0.857, and from 0.552 to 0.567, where rho assessed reliability (internal consistency) – how consistently the items measured the constructs. AVE assessed convergent validity – how well the items collectively represented the constructs. These measures were crucial for establishing the psychometric soundness of scales and constructs in quantitative research, particularly in techniques like SEM-PLS.

Analysis of outer loadings

Outer loadings signify the degree to which each measured indicator is linked with its latent construct, and they reflect reliability (Hair et al., 2022). In general, loadings of more than 0.70 are deemed strong and reflective of a reliable indicator.

Table 5: Outer loadings

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
AL2 <- Autocratic leadership	0.790	0.781	0.068	11.685	0.000
AL4 <- Autocratic leadership	0.701	0.689	0.084	8.378	0.000
AL5 <- Autocratic leadership	0.776	0.771	0.051	15.278	0.000
AL6 <- Autocratic leadership	0.735	0.736	0.054	13.698	0.000
E-GP1 <- E-GP	0.773	0.772	0.039	19.766	0.000
E-GP2 <- E-GP	0.831	0.831	0.030	27.423	0.000
E-GP3 <- E-GP	0.860	0.860	0.028	30.651	0.000
E-GP5 <- E-GP	0.541	0.535	0.090	6.003	0.000
E-GP6 <- E-GP	0.664	0.660	0.061	10.814	0.000
EP1 <- Employee performance	0.731	0.729	0.062	11.804	0.000
EP2 <- Employee performance	0.773	0.764	0.086	9.005	0.000
EP3 <- Employee performance	0.790	0.785	0.079	9.946	0.000
EP4 <- Employee performance	0.714	0.705	0.072	9.873	0.000

In the present study, all the indicators load strongly on their corresponding construct and outer loadings of 0.541 to 0.860 with corresponding T-statistics significantly larger than the critical value of 1.96, to determine statistical significance at the 0.001 level ($p < 0.001$ which suggests strong construct representation and reliability).

Path coefficient analysis

Path coefficients reflect the strength and direction of relationships among constructs in a model. Significance is tested with p-values and t-statistics, where a p-value of less than 0.05 suggests a statistically significant effect. Path coefficient of the model is given in Table 6 below.

Table 6: Path coefficient

	Original sample (O)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Autocratic leadership -> E-GP	0.370	0.070	5.250	0.000
Autocratic leadership -> Employee performance	0.088	0.088	0.997	0.319
EGP- Employee performance	0.274	0.107	2.559	0.011

Autocratic Leadership → E-GP

The path coefficient is 0.370, the t-statistic is 5.250, and the p-value is 0.000, and it has a significant positive association (Abdullah, 2024). This indicates that the autocratic leadership style is positively related to the adoption or utilization of e-GP systems in public sector procurement units in Zimbabwe (Ali et al., 2021).

Autocratic Leadership → Employee Performance

The coefficient 0.088 is not significant but positive ($t = 0.997$, $p = 0.319$). This suggests that autocratic leadership has a direct impact on employees' performance in this case, as earlier noted that autocratic leadership could increase employees' freedom (Nguni et al., 2020).

E-GP- Employee Performance

0.274 is a big and significant positive coefficient ($t = 2.559$, $p = 0.011$). It means that the proper application and usage of e-GP systems improve employees' performance positively. This aligns with evidence showing how technology integration can improve efficiency and effectiveness in public purchasing (Gunasekaran et al., 2020).

Interpretation of Hypothesis Testing Results

The study aimed to examine the influence of autocratic leadership style on employee performance in Zimbabwe's public sector procurement management units, with e-GP as a mediating variable. The hypotheses and results are shown in Table 7 below and are interpreted as follows.

Table 7: Interpretation of hypotheses

	Hypothesis	Sample mean (M)	T statistics (O/STDEV)	P values	Decision
Autocratic leadership -> Employee performance	H1	0.100	2.192	0.028	Accepted
Autocratic leadership -> E-GP -> Employee performance	H2	0.100	2.192	0.028	Accepted

Autocratic leadership style influences employee performance in Zimbabwe's public sector procurement management units.

The results provide significant support for this hypothesis, with a sample mean indirect effect of 0.100, a t-statistic of 2.192, and a p-value of 0.028, indicating that autocratic leadership positively and significantly influences employee performance. This aligns with literature that suggests that autocratic leadership, despite its top-down approach, can enhance employee performance in structured and hierarchical environments like public sector procurement by ensuring clarity in roles, swift decision-making, and strict compliance with policies (Nguyen et al., 2021).

E-GP mediates the relationship between autocratic leadership style and employee performance in Zimbabwe's public sector procurement management units.

This mediation hypothesis is supported (mean = 0.100, $t = 2.192$, $p = 0.028$), indicating that e-GP significantly mediates the relationship between autocratic leadership and employee performance. This suggests that the positive effect of autocratic leadership on employee performance occurs, at least partially, through the adoption and effective use of electronic government procurement systems (Adeyemi & Okunoye, 2023).

The proposed Structural equation model of the study (SEM)

The study's model hypothesized that leadership styles significantly predict employees' performance in PMU positively. In addition, it is hypothesized that e-GP mediates the relationship between leadership styles and staff performance. The model shown in Figure 2 below shows the path coefficient.

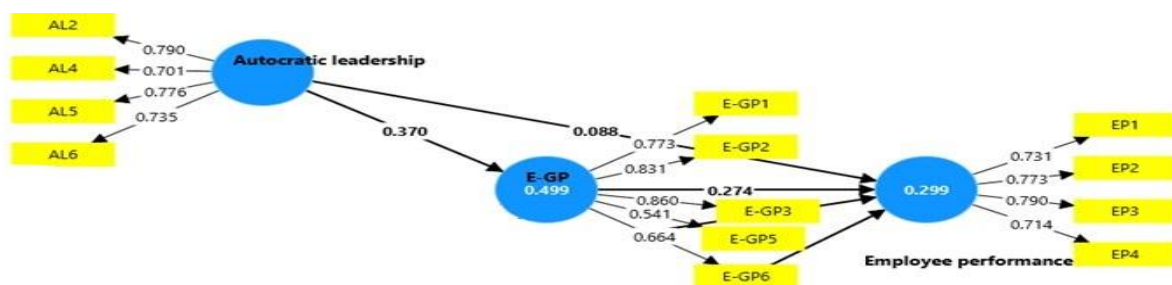


Figure 2: Structural Equation Model (SEM) of the study

Source: Primary data findings (2025)

Discussion of results/findings

Whether the autocratic leadership style influences employee performance in Zimbabwe's public sector PMUs

Autocratic Leadership → *E-GP*

The path coefficient of 0.370, with a t -statistic of 5.250 and p -value of 0.000, indicates a statistically significant and positive relationship between autocratic leadership and e-GP utilisation. This suggests that autocratic leadership, which typically emphasises directive control and authority, positively influences the adoption of e-GP systems in Zimbabwe's public procurement units. These findings support prior evidence that hierarchical leadership styles can enforce conformity with structured technological systems (Avolio et al., 2020; Ali et al., 2021).

Autocratic Leadership → *Employee Performance*

With a coefficient of 0.088 ($t = 0.997$, $p = 0.319$), the relationship between autocratic leadership and employee performance is positive but statistically insignificant. This implies that autocratic leadership does not directly enhance employee performance. This aligns with research highlighting that restrictive leadership styles may suppress autonomy and intrinsic motivation, thereby diminishing employee output (Nguni et al., 2020).

Autocratic leadership style has a significant influence on employee performance within Zimbabwe's public sector PMUs employees.

The analysis yields strong empirical support for this hypothesis, with a statistically significant indirect effect (mean = 0.100, $t = 2.192$, $p = 0.028$). This suggests that autocratic leadership positively influences employee performance within the context of Zimbabwean public sector procurement. Despite its often-criticised top-down nature, autocratic leadership can enhance efficiency in bureaucratic environments by promoting clarity of roles, expediting decision-making, and enforcing compliance with standard operating procedures (Nguyen et al., 2021; Li & Sun, 2023). In contexts where operational rigidity is necessary and chain-of-command is critical, this leadership style can minimise ambiguity and heighten accountability, thereby supporting improved performance outcomes.

The relationship between autocratic leadership style and employee performance in Zimbabwe's public sector PMUs is mediated by e-GP.

There is significant support for this mediation effect (mean = 0.100, $t = 2.192$, $p = 0.028$). The results suggest that autocratic leaders, by enforcing discipline and structured processes, may drive effective implementation of e-GP systems, which in turn improves employee performance. This supports findings that effective leadership can shape the success of technological innovations in the public sector (Adeyemi & Okunoye, 2023; Nguyen et al., 2021). Thus, e-GP serves as a crucial conduit through which autocratic leadership enhances procurement staff efficiency.

To propose a leadership style framework that can enhance employee performance in Zimbabwe's PMUs

Based on the study's findings, a hybrid leadership framework is recommended to optimize employee performance and support digital transformation in Zimbabwe's public procurement **sector**. Autocratic leadership, said to be inflexible, remained useful under this research when enforced through systematic mediation through e-GP. In some instances, such as mandating compliance in procurement, completing timely projects, or changing quickly throughout the system, autocratic tendencies can improve decisiveness and minimize ambiguity (Nguyen et al., 2021).

The framework, true to this, prescribes strategic investment in organizational development—leaders' training, change management, and infrastructure, towards ensuring incremental institutionalization of autocratic leadership. Over time, such investments can realize transformational leadership's potential in inspiring and sustaining high-achieving teams.

The suggested hybrid leadership model should be complemented by strong e-GP systems, which are a single mediating performance improvement tool.



Figure 3: Proposed Framework

First, institutionalize hybrid leadership training for all procurement managers in autocratic leadership skills like consultation, participation, and transparency, and obligatory enforcement skills, to ensure compliance and discipline. Second, invest in ongoing development and upkeep of the e-GP system to keep it stable, accessible, user-friendly, and properly integrated in all government ministries. This will enhance procurement efficiency and transparency. Third, encourage digital literacy and change management programs specific to leaders and employees. These programs should include streamlining transition into e-GP-based workflows, minimizing technology resistance, and developing confidence in using the system. Fourth, include leadership development modules in public administration training programs, emphasizing participatory approaches to leadership and technology-related skills appropriate for the digital age, such as flexibility, imagination, and the ability to harness technology properly. Finally, create performance-based incentives that incentivize leadership actions that promote innovation, cooperation, and productivity, particularly those that effectively utilize the e-GP system.

Suggestions for future research

To build upon the findings of this study and deepen understanding of leadership influences within digitally transforming public procurement systems, the following avenues for future research are proposed:

- **Longitudinal Studies on Leadership Evolution and e-GP Performance:** Future investigations should explore the *long-term effects* of shifts in leadership styles on the performance of e-GP systems. This would allow researchers to capture dynamic patterns over time and assess how leadership adaptation impacts system sustainability and institutional outcomes.

- Cross-National Comparative Analyses: Comparative studies involving *other developing nations* could offer valuable insights into the *transferability and scalability* of hybrid leadership frameworks. Understanding contextual differences and commonalities will help refine models suited for diverse socio-political and administrative environments.
- Qualitative Inquiry into Employee Perceptions: There is a need for *in-depth qualitative research*, such as interviews, case studies, and focus groups, to capture employees' lived experiences and perceptions of different leadership behaviours. This would provide richer explanations of how leadership style shapes *technology acceptance*, motivation, and performance on the ground.
- Exploring Moderating Variables: Subsequent studies should consider *moderating factors*, such as organisational culture, digital maturity, or *political influence*, which may shape or constrain the effectiveness of leadership styles. Such variables could significantly affect the relationship between leadership practices and procurement outcomes, especially in politically sensitive environments.

Collectively, these directions offer pathways for a more nuanced and contextually grounded understanding of public sector leadership and digital transformation in developing economies.

Practical Contribution

This research makes a practical contribution by deepening understanding of the interplay between leadership styles, e-GP, and employee performance in Zimbabwe's PMUs. The study offers empirical insights that could guide policymakers in designing more effective public sector digital transformation strategies. Specifically, it highlights how leadership approaches, such as autocratic, democratic, and transformational, facilitate or hinder the successful adoption and integration of e-GP systems.

The findings may inform legislative reforms and institutional capacity-building initiatives spearheaded by the Parliament of Zimbabwe. Such reforms could focus on enacting supportive legal frameworks and capacity development policies that bolster performance management systems and curb corruption in public procurement. Additionally, the study provides guidance for PMU managers and public sector administrators on aligning leadership development efforts with digital governance capabilities. This includes the introduction of training programmes, reskilling of staff, and change management processes to maximise e-GP returns on investment.

Beyond the national scope, the study carries global relevance. It supports progress towards the United Nations' Sustainable Development Goals, specifically SDG 9 (Industry, Innovation and Infrastructure) and SDG 11 (Sustainable Cities and Communities) (Duan et al., 2022; Yildiz & Amin, 2020; Raghu et al., 2024). It also aligns with the African Union's Agenda 2063, particularly Aspiration 1 (A prosperous Africa) and Goal 12 (Capable institutions and transformative leadership) (Hafke and Erlend, 2024). Consequently, the study may serve as a valuable reference for development agencies supporting digital reforms in public procurement within emerging economies.

Theoretical and Conceptual Contribution

From a theoretical perspective, the study integrates and extends existing frameworks by empirically analysing the mediating role of e-GP in the relationship between leadership styles and employee performance. It contributes to the ongoing discourse on the relevance of traditional leadership theories in digital public administration, while concurrently validating and updating core assumptions. The study draws upon and synthesises several conceptual frameworks, including:

- *Situational Leadership Theory* (Hersey & Blanchard, 1983; Hersey & Blanchard, 1996; Nasr et al., 2025)
- *Institutional Theory* (DiMaggio & Powell, 1983; Malik et al., 2025)
- *Stewardship Theory* (Donaldson & Davis, 1991; Hafke & Erlend, 2024)
- *Path–Goal Theory* (House, 1971; Valamontes, 2024; Zhang et al., 2024)
- *Diffusion of Innovation Theory* (Roggers, 1962; Call & Herber, 2022; Shipra et al., 2024)

In a context characterised by digital transformation and public sector reform, the above theories advance the theoretical dialogue on the role of leadership in innovation uptake and institutional effectiveness. The study also fills a knowledge gap by modelling e-GP as a mediating variable, a dimension seldom explored in existing literature (Singh & Slack, 2022). This conceptual contribution is reinforced by the study's empirical validation of the assertion that leadership styles significantly influence employee performance and that this relationship is substantially mediated by the effective utilisation of e-GP technologies.

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Agricultural policy, production status, and trade volumes nexus in Zimbabwe: the case of selected cereal crops

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Abstract:

Zimbabwe is predominantly an agrarian country. Farming is the major source of livelihood and income for over 50% of all the country's citizens. Agriculture also contributes 18% to the Gross Domestic Product (GDP) of the country. It contributes significantly as a source of raw materials, food security, employment, foreign exchange earnings, and human and capital formation. This research aims to provide an overview of the nexus between agricultural policy, status of production, and trade volumes, with a focus on cereal crops (wheat and sorghum) in Zimbabwe. It is informed by the Diffusion and Innovation Theory, the Marginal Zone Theory, Planned Behaviour Theory, and Social Cognitive Theory, which link with agricultural development in the country. The study follows a descriptive qualitative methodology, where the researchers made use of published data from local and international data sources to conduct an analysis of the nexus between agricultural policy, status of production, and the trade volumes in the country. The study draws from secondary literature in both grey and academic formats. It also utilizes government reports and documents. The study shows that among the small grain category, the selected cereals are increasingly becoming important as they form part of the staple food basket in the country. The recent government focus on small grains is making a significant impact on their production. The study identifies leading agricultural policies in the country and infers their effect on production and trade volumes. The study further shows that due to the lack of resources to develop its economy in other sectors, Zimbabwe has focused on agriculture to develop itself. It concludes that farming with a focus on cereal production will continue to dominate the economy for many years to come.

Keywords: Agriculture, capital, cereals, endowments, international trade.

Introduction

Most parts of Zimbabwe have environments that are conducive to the production of crops and animal farming (Ngwenya, Lunga & van Eeden, 2022). As such, since independence in 1980, the country has endeavoured to formulate agricultural policies that foster increased production in the agriculture sector, with the surplus being exported. Any deficit would be catered for by imports (ZEPARU, 2021). The agricultural products produced include maize, wheat, sorghum, millet, beef, poultry, dairy, sugar, and horticultural products, among others. According to Nhamo,

Mathcaya, Mabhaudhi, Nhlengethwa, Nhemachena, & Mpandeli (2019), cereal crops in Zimbabwe form the staple food and, as such, have special treatment in terms of their production and trade. They need to be regulated to ensure food security in the country. Maize, as one of the main cereal crops, is a staple food crop grown and consumed by people with varying food preferences and socio-economic backgrounds in Zimbabwe. Zimbabwe is one major producers of cereal crops in SADC with substantial cereal volumes traded across the region. Zimbabwe, even though hit by droughts in 1981/2 and 1992, managed to be a net exporter of maize up to around 1998 (Rukuni & Tawonezwi, 2006; Ngwenya, Lunga & van Eeden, 2022). In order to enhance the production of cereals, Zimbabwe has adopted various agricultural policies since independence in 1980, so as to meet local consumption and export requirements (SADC, 2018; Ray & Schaffer, 2016).

In the wheat sector, Zimbabwe has been doing well as it produced 12,000 tonnes in 2009, which increased to 38,715 tonnes in 2017. However, due to high demand, imports have been going up from 243,139 tonnes in 2009 to 268,892 tonnes in 2017. Subsequent years have seen production going up. For instance, production went up to 300,000 tonnes in the 2023 production season (Nyandoro & Anderson, 2025). Sorghum production has also shown upward trends. For example, production rose from 70,000 tonnes in 2009 to 137,000 tonnes in 2014. Despite poor yields of 40,000 and 46,000 tonnes in 2015 and 2016, respectively, production rose to 69,295 tonnes in 2017. Subsequent years show that production has grown to 82,063 tonnes in 2023. Imports have been rising, though (Ngwenya, Lunga & van Eeden, 2022).

The study explored the nexus among the agriculture policies, production status, and trade volumes in Zimbabwe with a focus on wheat and sorghum crops for the period 2009 to 2024. The year 2009 marks the period when the country's economy started recovering from the economic challenges that came with the implementation of the land reform in the country. According to SADC (2018) and Ray & Schaffer (2016), this year also marks the beginning of the Government of National Unity that was credited with the implementation of various reforms and policies that propped up the economy from the downward trend that accelerated from the early 2000s. Wheat and sorghum, among the cereal crop sector, are important in Zimbabwe. Their significance stems from the focus of the Government of Zimbabwe on their production.

Zimbabwe has been implementing various agricultural policies since its independence. The main and current one is the National Agriculture Policy Framework (NAPF) of 2018-2030, supported by various programmes that include the Presidential Input Support Scheme and the Command Agriculture Programme. Despite these policies, production has been fluctuating, and this has been affecting trade volumes too, resulting in Zimbabwe being a net importer of cereal crops (World Bank, 2024). Given this background, the research problem lies in understanding the complex relationship between Zimbabwe's agricultural policies, wheat and sorghum production, and trade volumes from 2009 to 2024. The study focuses on identifying and evaluating the major agricultural policies in Zimbabwe, their effect on the production of cereals (wheat and sorghum crops), and the subsequent trade volumes. Wheat and sorghum are staple crops. They have economic importance and are drought resilient to some extent (Sithole & Olorunfemi, 2024). The focus on wheat and sorghum is motivated by the little attention (unlike maize) given to them by scholars in terms of production and trade in Zimbabwe (Kaponda & Chiwaridzo, 2024). Therefore, the proper

formulation of policies concerning the production and trade of these crops would ensure the country's food security.

Literature review

Zimbabwe's cereal production policies have aimed to enhance food security and agricultural productivity, but face challenges related to input access, market distortions, trade, and climate variability. Zimbabwe has implemented various policies that govern the agricultural sector from production to marketing the produce. According to the Ministry of Agriculture, Land Reform and Rural Development (2023), the main policies include the National Agriculture Policy Framework (NAPF) of 2018-2030, the Presidential Input Support Scheme, and the Command Agriculture Programme. These are in addition to earlier policies that include the Willing Buyer, Willing Seller Settlement Programme (1980), the Liberalised Policies (1991), Land Acquisition and Fast Track Land Reform Programme (2000), the Mixed Approach under Zimasset Food Security and Nutrition Cluster (2013) and Comprehensive Agricultural Policy (2012)), National Agriculture Policy Framework 2018-2030, Zimbabwe Agriculture Input Policy 2017-2021, and Zimbabwe Agricultural Growth Programme 2016-2023.

These policies aim to transform the agricultural sector by increasing production and competitiveness (World Bank, 2024). They focus on various key areas such as food and nutrition security, agricultural knowledge, technology and innovation, production and supply of agricultural inputs, development of agriculture infrastructure, agricultural marketing and trade development, agricultural finance and credit, access, tenure security and land administration, and sustainable agriculture. The whole purpose is to ensure food security in the country, and Zimbabwe has, to a large extent, managed to achieve that goal over the years.

According to Mpala & Simatele (2023), these policies generally outline strategies for agricultural development. However, inconsistencies in input and output markets, as well as the impact of climate change, have affected both production and trade volumes. Various government and donor-funded schemes have created distortions in the input market, making it difficult for private dealers to be the main source of inputs for small-scale producers (Lima & Lessard, 2023). The sector also has inconsistent marketing and trade policies hindering efficient grain distribution. In addition, according to WFP (2023), the sector has suffered inconsistencies in policy implementation and a lack of coordination between different stakeholders. Climate change has also been a hindrance to the proper implementation of the policies, as droughts that have been experienced over the years resulted in change to policies and this affected yields and hence, trade volumes. As a result, the country became a net importer of cereals to cover the food requirement gaps.

Agriculture contribution

Erenstein et al. (2022) assert that agriculture is an important source of raw materials for other industries such as textiles. The multiplier effects of increased agricultural production and income become more important due to the increased demand for industrial output and the associated demand for labour and other inputs. Also, the domestic agricultural sector is the principal source of food for non-agriculture workers in the country. For economic diversification to be successful,

domestic food producers should produce a surplus. It also contributes to employment. Labour force in agriculture is approximately 26,4 %, making it a significant contributor to the reduction of unemployment levels (FAO, 2025; Chinsinga & Chasukwa, 2018).

Agriculture also contributes to foreign currency reserves (GoZ, 2024). This is the case as most cash crops are exported and bring in foreign currency. In addition, food sufficiency has reduced dependence on imports, hence saving foreign currency to be used in other areas of need. It also contributes to physical capital. Capital is required for the creation of off-farm jobs and provision of supportive facilities which improve the productive life of capital and efficiency of its utilisation. The three main sources of capital are foreign direct investment, aid, and domestic supply, mainly from agriculture. Therefore, agriculture is a significant sector in the economy of Zimbabwe.

Apart from Zimbabwe, other countries in the region have also taken an active role in propping up their agricultural sector by implementing policies so as to increase production, and either increase exports or reduce imports of the cereals (IMF, 2024). The importance of the agricultural sector in Africa in contributing to food security is reflected in how it is prioritized in the development agenda (World Bank, 2024). For example, Malawi and Mozambique have a majority of their population also reliant upon agriculture (World Bank, 2019). Agriculture remains the backbone of Malawi's economy, contributing approximately 30% to the national GDP (World Bank, 2024). Agricultural exports contribute significantly to foreign exchange (FAO, 2020). In Mozambique, agriculture also plays a significant role, contributing approximately 26-30% to the national GDP, and employing over 70% of the population, mainly in rural areas (World Bank, 2023). Most of the agriculture in Mozambique is for subsistence, and as a result, it remains a net importer of food.

Zambia's cereal policy primarily focuses on supporting maize production due to its status as the main staple food in the country. The government has implemented programmes like the Farmer Input Support Programme and the Food Reserve Agency to support farmers (SADC, 2023). There is also a growing emphasis on diversifying crops and promoting sustainable agricultural practices to improve food security and nutrition. Overall, cereal policy in Zambia is evolving to address the complexities of food security, nutrition, and sustainable agricultural practices, while also recognising the importance of maize as the dominant staple (FAO, 2025).

South African agriculture is highly diversified with both crop and livestock production (FAO, 2025). It is a major producer and net importer of wheat and wheat products (SADC, 2023). Just like Zimbabwe, the Government of South Africa adopted various agricultural policies to transform the production and trade of agricultural commodities locally, regionally, and internationally. Most of these policies proved to be a success to a great extent (UNECA, 2023). This makes South Africa an agricultural success story in Southern Africa.

Importance of cereals in Zimbabwe

Cereal crops are an important ingredient of the food basket of Zimbabwe, and thus have important policy implications (Anseeuw et al, 2012). Investigations surrounding these crops assist in the formulation of appropriate food security legislation governing their trade (Sarris & Morrison, 2010). It is therefore important to understand the effect of agricultural policy on cereals. Cereals play an important role in food security and rural livelihoods in the country. The main crops in the cereals category grown in Zimbabwe include maize, wheat, sorghum, millets, and rice. The economic benefits of the crops include income generation, employment creation for the agriculture sector and its value chain, and contribution to foreign currency reserves.

Zimbabwe's agricultural policies, particularly those related to land reform and grain market control, have had a significant impact on cereal production and trade (Lima & Lessard, 2023). Land redistribution, while aiming for equity, led to disruptions in large-scale commercial farming, while market liberalisation, though intended to boost private sector involvement, initially struggled with input costs and access to markets. According to Nyandoro & Anderson (2025), the land reform implemented in the early 2000s saw the redistribution of land from large-scale commercial farms to smallholder farmers. While it was intended to promote more equitable land ownership and agricultural production, the land reform resulted in a decline in overall cereal production, particularly maize, due to disruptions in farming practices, lack of experience among new settlers, and limited access to inputs and finance. The government had to intervene so as to mitigate the devastating effects (Dube, 2020). The policy interventions further created a complex and often unstable environment for cereal production and trade.

Importance of wheat and sorghum in Zimbabwe

According to Nyandoro & Anderson (2025), wheat plays an important role in the economy of Zimbabwe. It contributes to food security, where it forms a significant part of the staple food basket. The country's production of the crop aims to feed about 10 million of the population, the greater part of the population being in the urban areas of the country. The cereal crop also contributes about 4% to the country's Gross Domestic Product (GDP) (IMF, 2024). This makes it a significant crop for the economy of the country. Wheat production provides employment and income to those involved in its production and value chain. Therefore, it plays an important role as a source of livelihood for many people. It has also contributed to food self-sufficiency in the country (Chidoko, 2022). This has been a result of government support in its production in terms of funding and policies.

Despite the importance of wheat production, it has faced various challenges. Climate change has affected progress in agriculture in general (UNECA, 2023). This has also affected the availability of adequate water for irrigation, especially during winter crop seasons. These challenges have affected the quality of the crop. According to SADC (2021), the Government of Zimbabwe and other stakeholders are playing a significant role in urging innovation and adaptation strategies so as to mitigate the adverse effects of climate change in the agricultural sector in general.

In addition, sorghum, being a small grain crop, has also received more focus in the ongoing small grain promotional campaign by the Government of Zimbabwe (Lima & Lessard, 2023). Like other cereal crops, sorghum contributes significantly to food security. It is a staple food in most parts of the country, mostly in the drylands where its production is dominant. It is also more drought-tolerant than most cereals, and it is a significant crop for dryland agriculture, ensuring food security in areas of adverse weather and climatic conditions (Dube, 2020).

Sorghum is important as it has many uses, besides being a staple food. It is used as animal feed, especially for cattle and poultry. It is also used in industry, where it is processed into industrial products such as ethanol, glucose, and starch. It is also mostly known for its use in beer brewing, both traditional and commercial production (Nyandoro & Anderson, 2025). Sorghum is also a nutritious grain, particularly rich in carbohydrates, protein, fiber, and several vitamins and minerals. It is a good source of energy and can contribute to various aspects of health (Chinsinga & Chasukwa, 2018). As such, it is a source of income to farmers and all those involved in its value chain. Therefore, sorghum is important as a source of food, income, and industrial development in the country.

Theories underpinning Agricultural Development in Southern Africa

Agricultural policies, production status, and trade volumes are interconnected through complex relationships. As such, generally policies influence production levels, which in turn affect trade flows, be they exports or imports (Lima & Lessard, 2023). Subsidies, price controls, and trade restrictions in Zimbabwe have shown that they distort production decisions, leading to surpluses or shortages, thereby ultimately impacting international trade patterns. On the other hand, changes in production, such as increased output due to technological advancements or adverse weather events, such as the current climate change being experienced in the country, have influenced trade volumes and necessitated agricultural policy adjustments (Nyandoro & Anderson, 2025).

In Zimbabwe, various theories that try to explain production and productivity in agriculture can be cited. The main theories include the Diffusion and Innovation Theory, the Marginal Zone Theory, the Planned Behaviour Theory, and the Social Cognitive Theory. According to Chamunorwa, Sakadzo & Kugedera (2021), the Zimbabwean government has implemented several programmes aimed at boosting agricultural production, in line with the propositions of the given four theories.

The Theory of Diffusion and Innovation explains the spread of new agricultural technologies within a population. It explains how, why, and at what rate new ideas and technologies spread through a population. In the context of agriculture, this theory describes how new farming techniques, equipment, or practices are adopted by farmers over time. The characteristics of the innovation, the communication channels used to spread information, and the characteristics of the adopters are considered factors that influence the adoption of innovations (Chamunorwa et al, 2021).

The other theory is the Marginal Zone Theory. It is primarily applied in archaeology and biology. In archaeology, it suggests that agriculture arose in areas where hunting and gathering became unsustainable, forcing populations to adopt new subsistence strategies. In biology, specifically within the spleen, the marginal zone is a critical area for immune responses, where immune cells

interact and filter blood-borne antigens. According to Lima & Lessard (2023), this theory attributes the nexus between agriculture and development to population pressure and environmental changes. According to the theory, agriculture is a result of the response to cyclical population pressure on the edges of previously well-populated areas. Humans initially existed in equilibrium with their environment. Population growth and environmental disruptions resulted in people moving to less favourable areas. In the marginal zones, the invention of agriculture restored equilibrium through the provision of a more reliable food supply (Chamunorwa et al, 2021).

The other theories that explain agricultural production are the Theory of Planned Behaviour (TPB) and Social Cognitive Theory (SCT). The TPB and SCT are both influential frameworks in social psychology used to understand and predict human behaviour. However, TPB focuses on how attitudes, subjective norms, and perceived behavioral control influence intentions and subsequent behavior, while SCT places more emphasis on the interplay between personal factors, environmental influences, and behavior itself, highlighting concepts like self-efficacy and observational learning (Chinsinga & Chasukwa, 2018). According to the theories, farmers' attitudes, beliefs, and social influences influence the adoption of new technologies and practices. The Theory of Planned Behaviour suggests that an individual's intentions to perform a behaviour are influenced by their attitudes toward the behaviour and their perceptions of social norms. Social Cognitive Theory highlights the interplay between individual cognitive processes, social interactions, and the environment in shaping behaviour (Chamunorwa et al, 2021).

Dube (2020) asserts that in Zimbabwe, agricultural development is intricately linked to various models, where the country presents opportunities for diverse approaches, including large-scale commercial farming and smallholder systems, each having its own challenges and potentials. Generally, by applying the Diffusion of Innovations Theory, we can see how agricultural policies (the social system) influence the adoption of new farming practices (the innovation) by farmers (the members) and how this affects production and trade. Furthermore, the Marginal Zone Theory, which posits that agriculture expanded into less productive areas due to population growth, can be applied to understand Zimbabwe's agricultural landscape (Chamunorwa et al, 2021). In Zimbabwe, this manifests as a complex interplay between agricultural policies, production status (including both commercial and smallholder farming), and trade volumes, particularly in the context of land reform and market access challenges. Also, the Theories of Planned Behavior (TPB) and Social Cognitive Theory (SCT) can be valuable frameworks for understanding how agricultural policies impact production and trade in Zimbabwe. Applying these theories can help explain why farmers adopt certain practices, how policies influence those practices, and ultimately affect production and trade volumes.

Methodology

The study employed a descriptive qualitative methodology. In order to identify a robust set of agricultural policies that have enhanced the status of agriculture in Zimbabwe, the focus was mainly on the following sub-areas:

- *Leading agricultural policies in Zimbabwe.*
- *Production levels (Wheat and Sorghum crops)*
- *Trade volumes (Wheat and sorghum)*

The aim is to unpack the nexus between agricultural policies in Zimbabwe, production levels, and trade volumes.

Research Design: The study used a descriptive qualitative methodology. The research made use of secondary data, which is data published by international data sources, to do an analysis of the nexus between agricultural policies in Zimbabwe, production levels, and trade volumes. The study also made use of online reports and articles, and similar documents. In other words, the study made use of online literature and document analysis. Furthermore, it made use of hard copy materials sourced from the officials in the Ministry of Lands, Agriculture, Fisheries, Water and Rural Development, at the Ministry's Head Office in Harare. The materials obtained include policy documents, cereal output, and agricultural trade volumes from which trade statistics of wheat and sorghum were obtained. The departments that provided information are the Department of Agricultural, Technical and Extension Services (Agritex), the Agricultural Marketing Authority (AMA), the Agricultural Rural Development Authority (ARDA), and the Grain Marketing Board (GMB). These are parastatals operating under the ministry's mandate.

The descriptive qualitative methodology was suitable for exploring the complex interplay between agricultural policies, production levels, and trade because it allows for an in-depth understanding of the lived experiences and perspectives of stakeholders, as well as the contextual factors influencing these relationships (Lima and Lessard, 2023).

Data Collection: Secondary data was obtained from online sources and hard copy material from the Ministry of Lands, Agriculture, Fisheries, Water, and Rural Development, and its associated parastatals. The information sourced included policies in place, challenges being faced in the implementation, production, and trade of the cereal crops, focusing mainly on wheat and sorghum.

Data Analysis: A descriptive qualitative analysis was carried out on online material and sourced documents that included historical records and official reports.

Results and discussion

Agricultural policies adopted in Zimbabwe

Zimbabwe has adopted several agricultural policies since its independence in 1980. The purpose was to boost agricultural output to feed the growing population (GoZ, 2024). These policies include the National Agriculture Policy Framework (NAPF) of 2018-2030, which is supported by various programmes that include the Presidential Input Support Scheme and the Command Agriculture Programme, among others.

The National Agriculture Policy Framework (NAPF) (2018-2030) addresses issues concerning crop and livestock production, marketing, and trade. The framework has been crafted to enhance the country's competitiveness in the world market. Reforms and policies in agriculture are formulated around this framework. Agriculture policies in Zimbabwe do not target specific crops per se, but the whole sector in general. Wheat and sorghum have been singled out to some extent, though, as wheat is targeted for winter cropping, while sorghum is one of the main small grains that are targeted and encouraged to be grown in dryland areas of the country.

Table 1 below gives various policies adopted by the Government of Zimbabwe to boost production and productivity in agriculture.

Table 1: Land and Agriculture policies in Zimbabwe

Policy	Description
Willing buyer, willing seller resettlement programme (1980)	The government distributed 2.46 million ha in the first five years to model 12-acre schemes, which became successful.
High regulation and control policies	Maintaining the dual agricultural system. Continuation of the pre-independence government controls, with bias towards black small-scale and communal farmers (these received subsidised inputs and protected marketing).
Liberalised policies (1991)	Trade liberalisation begins, founded on the macroeconomic reforms' proposed market-based economy. Abandonment of controls and subsidies, although the grain sector remained partially controlled. The start of efforts to write national agricultural policies.
-Land acquisition and Fast Track Land Reform Programme (2000) -Return of regularisation	Production falls drastically after the FTLRP. All efforts to craft national policy fail, and the government becomes highly involved in trade regulation again. The central bank bankrolls national agricultural projects, and marketing of most produce (cereals are tightly controlled).
Mixed approach	The government partly liberalises agricultural trade again. The grain trade is uncontrolled for the first time. The government and funds input projects to communal and resettled farmers.
Mixed approach (under Zimasset Food Security and Nutrition Cluster (2013) and Comprehensive Agricultural Policy (2012))	The government introduces the Maguta programme. This was also coupled with the Presidential Input scheme during the period (2015) that benefitted 300,000 small-scale farmers from \$28 million facility. Diversify cropping patterns at the national level by supporting the production of small grains, especially in the drought-prone areas.
National Agriculture Policy Framework 2018-2030	To create a stable enabling environment and flow of investment that sustainably enhances the capacity of the agricultural sector to anchor national economic growth to upper middle-income status by 2030.
Zimbabwe Agriculture Input Policy 2017-2021	To facilitate a sustainable increase in production, productivity, and competitiveness of Zimbabwean agriculture
Zimbabwe Agricultural Growth Programme - 2016-2023	To contribute to the development of a diversified and efficient agriculture sector that promotes inclusive green economic growth.

Source: Compiled from policy documents from the Ministry of Agriculture, Zimbabwe (2025)

The policies given in Table 1 were meant to increase production for local consumption and export. The Government of Zimbabwe maintained the dual agriculture system it inherited from the colonial period. The emphasis was on small-scale and communal black farmers. It subsidized inputs and offered other supportive initiatives to enhance food sufficiency in the country. The Government's involvement heavily favoured the production of cereal crops that included wheat and sorghum (Ministry of Agriculture, 2025).

In 1990, the Government of Zimbabwe adopted the Economic Structural Adjustment Programme (ESAP). This led to a liberal and market-oriented macroeconomic policy stance according to the World Bank (2024). This affected production as it eliminated subsidies to farmers who were not yet ready to stand on their own feet. Over the years that followed ESAP, production continued to decline. As a result, the Government of Zimbabwe adopted several policies and reforms so as to prop up the country's agricultural sector. The most notable one among these policies and programmes was the Land Acquisition and Fast Track Land Reform Programme (FTLRP) of 2000. Production fell drastically after the FTLRP. All efforts to craft national policy failed, and the government became highly involved in trade regulation again. The Central Bank bankrolled national agricultural projects, and marketing of most produce (cereals were tightly controlled) (Tshuma, 2014).

Thereafter came the mixed approach period under the Zimbabwe Agenda for Sustainable Socio-Economic Transformation (ZIMASSET). This programme enhanced production through its Food Security and Nutrition Cluster (2013) and Comprehensive Agricultural Policy (2012). The government introduced the Maguta programme. This was also coupled with the Presidential Input scheme during the period (2015) that benefitted 300,000 small-scale farmers from a \$28 million facility (WFP, 2023). It diversified cropping patterns at the national level through supporting the production of small grains, especially in the drought-prone areas (Dube, 2020).

Later in 2018, the Government came up with the National Agriculture Policy Framework (2018-2030). This was meant to create a stable, enabling environment and flow of investment that sustainably enhances the capacity of the agricultural sector to anchor national economic growth to upper middle-income status by 2030. Dube (2020) asserts that this framework was buttressed by the Zimbabwe Agriculture Input Policy of 2017-2021, which sought to facilitate a sustainable increase in productivity and competitiveness of Zimbabwean agriculture. The Zimbabwe Agricultural Growth Programme (2016-2023) also contributed to the development of a diversified and efficient agriculture sector that promotes inclusive green economic growth.

Cereal production in Zimbabwe

Zimbabwe endeavours to boost cereal production through various programmes focusing on climate-smart agriculture, improved farming techniques, and market access for farmers. The efforts are meant to enhance food security in the country (Lima & Lessard, 2023). Through Climate-Smart Agriculture and Resilience, the Government is seized with the Integrated Small Grain Project (which focuses on increasing resilience and productivity of small grains), the Pfumvudza/Intwasa Programme (which aims to improve crop yields), Conservation Agriculture (minimal soil disturbance, crop rotation, and maintaining ground cover), and Drought-Resistant Seed Varieties (which encourages the use of drought-resistant seed varieties).

Furthermore, the Government of Zimbabwe, through Improved Farming Techniques, focuses on multi-crop threshers, which help alleviate the manual labour involved in threshing cereals and expand training and extension services on good agricultural practices. It also works to improve soil fertility management. Also, the Government is seized with market access and value addition in the sector. It implements initiatives that aim to improve farmers' access to markets for the cereal produce, and also explores ways to process small grains into products such as flour (GoZ, 2024).

To enhance the production of wheat and sorghum, Zimbabwe has adopted various agricultural policies since its independence in 1980. These policies were meant to increase production. The surplus would be exported. Table 2 below shows cereals production, consumption, and trade volumes for Zimbabwe in tonnes. Despite low production levels as shown, the agricultural policies have managed to enhance production in the country. The exports are depressed, though, due to high local consumption.

Table 2: Cereals Production, Consumption, and Trade Volumes for Zimbabwe (tonnes)

Year	Production (tonnes)	Consumption	Imports	Exports	Net Export/Import
Wheat					
2009	12,000	255,077	243,139	62	(243,077)
2010	18,000	353,480	335,480	0	(335,480)
2011	23,000	310,705	287,766	61	(287,705)
2012	20,000	205,842	186,955	1,113	(185,842)
2013	25,000	223,101	198,211	110	(18101)
2014	34,250	235,259	201,010	1	(201,009)
2015	20,000	249,783	231,293	1,510	(229,783)
2016	20,000	288,891	268,892	1	(268,891)
2017	38,715	307,606	268,892	1	(268,891)
2018	45,000	153,061	108,068	7	(108061)
2019	94,685	116,002	51,617	300	(51,317)
2020	212,530	313166	102,719	2,083	(100,636)
2021	337,212	417,821	80,609	10	(80.599)
2022	250,000	350484	100,608	124	(100,484)
2023	300,000	424490	124,497	7	(124,490)
Sorghum					
2009	70,000	147,830	77,830	0	(77,830)
2010	73,675	103,740	30,065	0	(30,065)
2011	95,000	118,757	23,757	0	(23,757)
2012	65,000	369,403	3,668	129	(304,403)
2013	69,000	79,134	10,406	272	(101,134)
2014	137,000	142,972	6,011	39	(5,972)
2015	40,000	51,279	11,307	28	(11,279)
2016	46,000	84,780	38,895	115	(38,780)
2017	69,295	108,075	38,895	115	(38,780)

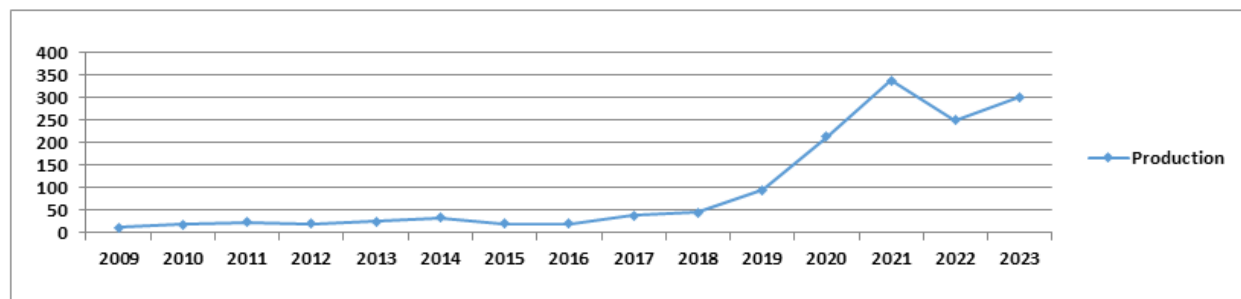
2018	75,324	78067	7,713	4,970	(2,743)
2019	66,280	77,632	18,318	6,966	(11,352)
2020	143,055	162,293	19,318	80	(19,238)
2021	128,907	148,156	19,319	70	(19,249)
2022	78,861	85370	6,729	220	(6,509)
2023	82,063	87436	7,006	1,633	(5,373)

Source: Calculated from FAO Statistics Division data (2025).

Wheat production and trade

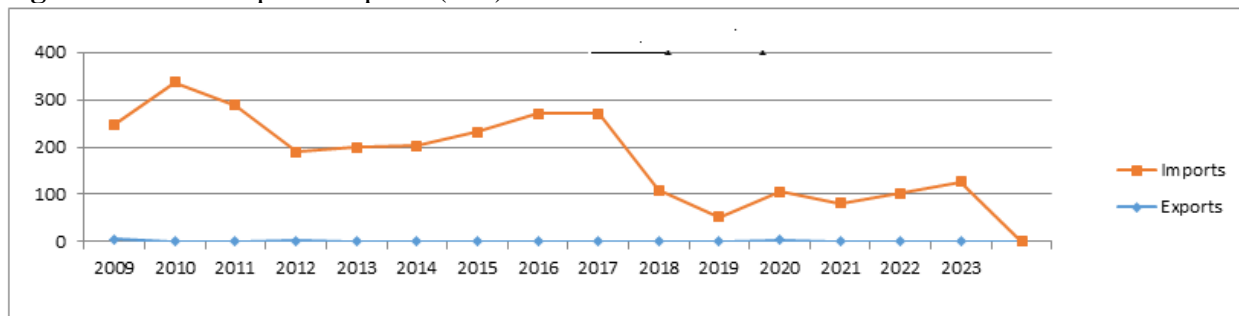
Wheat production in Zimbabwe has been steadily increasing, with the country achieving record harvests in recent years and becoming self-sufficient (Lima and Lessard, 2023). In 2023, Zimbabwe produced approximately 300,000 tonnes of wheat. This success is attributed to various factors, including revamped irrigation schemes, government support, and the adoption of high-yielding varieties. The support by the Government of Zimbabwe is producing tremendous results in the sector. The winter season cropping is also adding immensely to the quantities being produced per year. All these schemes are attributed to the policies that have been implemented to boost the production of the crop. In the wheat sector, Zimbabwe has been doing well, as it produced 12,000 tonnes in 2009 and increased the yield to 38,715 tonnes in 2017. The production levels continued to increase thereafter to 300,000 tonnes in 2023. Due to high demand, imports have been going up from 243,139 tonnes in 2009 to 268,892 tonnes in 2017, until it reached 124,497 tonnes in 2023. The available data shows insignificant figures on exports that declined from 62 tonnes to 7 tonnes over the same period. Figures 1 and 2 show trends of wheat production and trade volumes, respectively.

Figure 1: Zimbabwe wheat production (000) metric tonnes



Source: Constructed using FAO Statistics Division data (2025)

Figure 2: Wheat exports/imports (000) metric tonnes

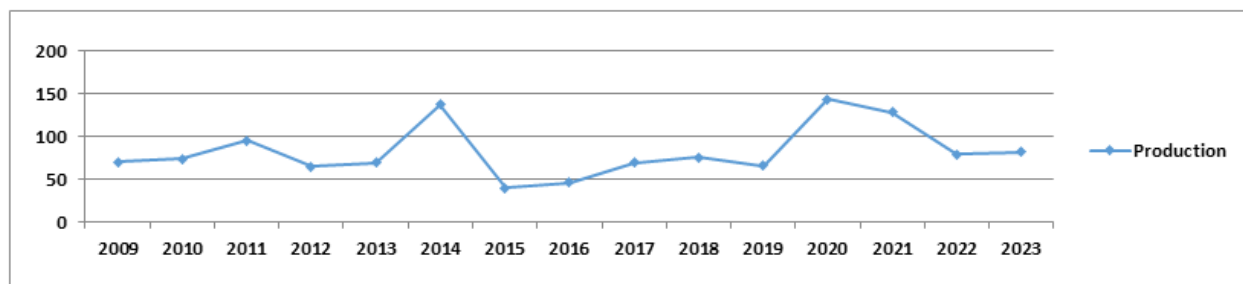


Source: Constructed using FAO Statistics Division data (2025)

Sorghum production and trade

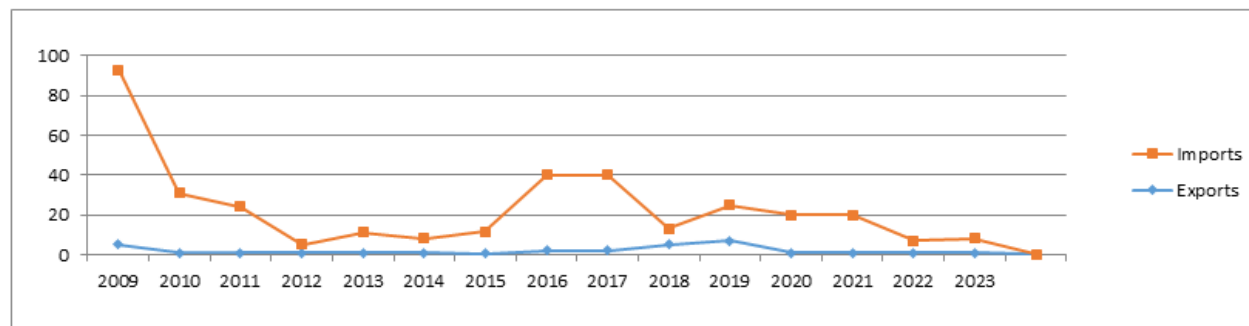
Sorghum is a significant crop in Zimbabwe due to its drought tolerance and nutritional value. It is grown in dry areas of the country, according to Chidoko (2022). While maize production dominates, sorghum remains an important food source (SADC, 2023). It is increasingly recognised for its resilience in the face of climate change and other adverse environmental conditions. Despite its importance as part of the main staple food, sorghum production in Zimbabwe faces challenges like poor agronomic practices, lack of certified seeds, and high production costs. However, the Government of Zimbabwe has managed to enhance its production by urging farmers, especially the communal ones, to grow it on a large scale in dry areas of the country through offering extension services. Sorghum production also showed good trends. Production rose from 70,000 tonnes in 2009 to 137,000 tonnes in 2014. Production rose to a record 143,055 tonnes in 2020, but fell to 82,063 tonnes in 2023. These fluctuating statistics are due to the drought experienced during the various cropping seasons. Imports have been rising during the period as a result of high demand for the crop for its various uses as food, as well as for its industrial use. There were no significant exports over the same period. Figures 3 and 4 show trends in sorghum production and trade volumes, respectively.

Figure 3: Zimbabwe sorghum production (000) metric tonnes



Source: Constructed using FAO Statistics Division data (2025)

Figure 4: Zimbabwe sorghum exports and imports (000) metric tonnes



Source: Constructed using FAO Statistics Division data (2025)

Generally, production of wheat and sorghum has been on the increase due to government support. Despite this increase in production, the imports have been on the rise too due to the high demand for the crops for consumption and also for industrial use, especially in the case of sorghum. The potential effects of the policies, despite enhancing production, have been depressed. The period under study was marred by economic underperformance due to policy inconsistencies in the agricultural sector, and hence the subsequent low exports and high imports. Given that these crops are an important component of the staple food basket in the country, they will continue to receive attention from the Government of Zimbabwe so as to achieve food sufficiency in the country.

The trends in production are attributed to adverse climatic conditions that have been bedevilling the agricultural sector in the country of late. Climate change has affected farming activities, hence the depressed production (GoZ, 2024). This has also affected export performance, resulting in high imports to complement local produce and meet the deficit of food requirements in the country. Furthermore, government funding has been inadequate due to other competing government obligations. According to the Ministry of Agriculture (2025), more funding has been channelled to importing food because of droughts experienced over the years.

Recommendations

Zimbabwe has well-formulated policies on agriculture. The National Agriculture Policy Framework (NAPF) of 2018-2030 is one of the best policies that Zimbabwe has come up with in its bid to boost agricultural production. It is carving its position as one of the significant agricultural players in the region, a status that was significantly reduced during the implementation of the land reform, especially from the year 2000. Despite the well-grounded agricultural policies, the whole implementation exercise needs to be improved. The implementation is derailed by inadequate funds that are channelled towards the sector. Also, some policies are abandoned midway. New policies come in as new officers are appointed in the sector. The study recommends that, in order to enhance wheat and sorghum production in the country, close monitoring of policy implementation is necessary. According to Chidoko (2024), infrastructure financing is important for enhancing agricultural production. The Government should formulate specific policies for specific cereals, wheat, and sorghum, included. There is also a need to come up with a Centre for Grain Research and Trade, which has a mandate of

advising the Government on matters of grain production. This is necessary as cereals are important for food security in the country.

Conclusion

Wheat and sorghum are in the small grain category, a sector that has been given much attention in recent years by the Government of Zimbabwe. With the greater attention given to these cereals, a lot of progress has been made despite policy implementation challenges and inadequate funding. The government's attention itself is commendable, as this will force other stakeholders in the agricultural sector to focus on the small grain sector, which includes wheat and sorghum. This is the right track as Zimbabwe addresses the 17 Sustainable Development Goals (SDGs) that recognise the need to end poverty through economic growth. Agriculture plays a crucial role in achieving several of the SDGs.

Directions for further studies

The research has been limited to wheat and sorghum in Zimbabwe. Further studies could incorporate more crops. This would give a wider spectrum in the analysis. This dimension is important as it will address policies needed in the sector that enhance overall production and trade. This is important as comprehensive policies that embrace the whole sector would be developed for the good of all other staple cereals, especially maize.

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The moderating effect of financial leakages on the relationship between Capital Expenditure (CAPEX) and economic growth in Zimbabwe

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Abstract

This paper assesses the moderating effect of financial leakages (corruption) on the relationship between capital expenditure (CAPEX) and economic growth. Corruption is an exogenous factor with negative effects on the efficiency and effectiveness of CAPEX use in the public sector. This paper empirically examines the moderating effect of corruption on the relationship between CAPEX and economic growth. Autoregressive distributed lag model was used to determine the moderating effect as the model tests both short run and long run effects. The model also accepts regression of variables co-integrated at different levels. The results show that CAPEX has positive effects on economic growth. However, corruption is cancerous on the allocation and use of the CAPEX, both in the short and long run. Financial leakages were found to have a negative moderating effect on the relationship between CAPEX and economic growth both in the short and long term. The moderation is stronger in the long term as compared to the short term. Government should tackle financial leakages (corruption) head on to reduce financial haemorrhage in Zimbabwe's infrastructure projects.

Key Words: Capital Expenditure (CAPEX), Economic Growth and Financial Leakages.

Introduction

CAPEX for the government of Zimbabwe for the year 2023 was ZWL3,96 trillion, about 3.3% of the country's GDP. In 2024 it was forecast to increase to ZWL12,4 trillion, being 4.2% of GDP. The numbers show a deliberate increase in CAPEX, seen as an engine for economic growth. Zimbabwe has witnessed extensive development in CAPEX at Robert Gabriel Mugabe International Airport, Victoria Falls Airport and Joshua Mqabuko Nkomo Airport. The Harare to Beitbridge highway of 586km and major roads in Harare have been rehabilitated. However, according to Transparency International, corruption in Zimbabwe remains high. In Transparency International's 2023 Corruption Perceptions Index (CPI), Zimbabwe scored 24 on a scale from 0 (highly corrupt) to 100 (very clean). When ranked by score, Zimbabwe ranked 149th among the 180 countries in the index. In 2020, the country CPI was 24, ranking 149th out of 180 countries. The results for 2022 and 2021 were near identical, with CPI of 23. This paper examines the relationship between CAPEX and economic growth amid financial leakages in the short and long run.

Literature Review

According to the Keynesian theory of public expenditure (Keynes, 1936), the government must intervene in the economy through taxation and government spending to foster output, growth and employment. This theory is founded on the belief that government expenditure stimulates businesses to provide goods and services. Adolph Wagner (1835–1917) contended that redistribution of wealth and income is a provision in the collective need for less economic inequality as the government makes decisions in the general interest. Adam Smith, in the book *The Wealth of Nations*, identified the main drivers and causal processes of growth to formulate and promote policies that could achieve the objective of ‘universal opulence.’ Smith (1976) asserts that the driving force of growth is *saving*, what he referred to as ‘parsimony,’ and that saving will lead to and be matched by equal levels of investment, involving the employment of stock as capital in production which is necessary for capital accumulation.

Financial leakages (Corruption)

Corruption is the abuse of entrusted power for private gain, a diversion of funds from iterative processes. It is the abuse of public power for private gain, and a violation of formed rules governing the allocation of resources by officials in response to offers of financial gain (Wickberg, 2021). Financial leakages are prevalent in both developed and emerging countries, and have increased with financial globalisation (Gossel, 2018). It is rent seeking and dishonest behaviour by those in positions of power and leads to erosion of institutional capacity of governments as procedures are disregarded and resources siphoned off, resulting in underfunding of critical processes and programmes (Wickberg, 2021).

Research Methodology

The aim of this study is to assess the moderating effect of financial leakages (corruption) on the relationship between CAPEX and economic growth. The study used existing secondary data from the World Bank. Attempting to empirically uncover long-run equilibrium relationships is tantamount to separating them from the overlaid short-run dynamics, as contended by Kripfganz and Schneider (2023). This study employs the Autoregressive Distributed Lag (ARDL) model and the Error Correction Model (ECM) for cointegration to investigate the long-run and short-run relationship between economic growth and CAPEX and its determinants, as contended by Rasool et al. (2022). To implement the bounds testing procedure, the conditional ARDL Error Correction Model (ECM) is modelled using an equation.

ARDL Bound cointegration test model.

$$\Delta EG_t = \tau + \beta_0 EG_{t-1} + \beta_1 CE_{t-1} + \beta_2 CP_{t-1} + \sum_{i=1}^p \alpha_{1i} \Delta EG_{t-i} + \sum_{i=0}^p \alpha_{2i} \Delta CE_{t-i} + \sum_{i=0}^p \alpha_{3i} \Delta CP_{t-i}$$

ARDL Model

$$EG_t = \alpha + \sum_{i=1}^p \beta_1 EG_{t-i} + \sum_{i=0}^q \beta_2 CE_{t-i} + \sum_{i=0}^r \beta_3 CP_{t-i} + \varepsilon_t$$

Where?**P**=optimum lag length**EG**= Economic Growth**CE**=Capital Expenditure**CP**=Financial leakages β_i = coefficients ε_t = error term

The model interrogates the relationship between CAPEX and economic growth amid the independent variable corruption. Qamruzzaman and Jianguo (2018) contend that the ARDL is one of the best econometric methods compared to others in a case when the variables are stationary at I (0) or integrated order I(1).

Data Sources

The quantitative data used in this study were gathered from secondary sources. CAPEX was taken from Ministry of Finance Economic Planning and Investment Promotion. The GDP was taken from the World Bank. Financial leakages (corruption) indices were taken from the World Bank Databases. Considering the limitations of data availability, the data for the fourteen years was quarterised using the Lisman and Sandee (1964) technique.

Descriptive Statistics

The study found that the average quarterly economic growth (GDPG) in Zimbabwe ranges between 5.19% and -2.97%, as depicted by the maximum and minimum values portraying the existence of severe disparities in growth. The disparity is also reflected by the standard deviation value (1.98%) which is greater than the mean (1.35%) signalling high volatility in growth. The mean (financial leakages) level in Zimbabwe for each quarter stood at -0.33 which falls within the high-level category, as the grading ranges between -2.5 to 2.5 with lower figures indicating lower level of corruption control (high level of corruption). This is also supported by the maximum and minimum values (-0.19 and -0.57, respectively) which fall within the high level of corruption category.

Table 1: Data Descriptive

	LNGDP	GDPG	LNCAP	CORR
Mean	1.624	1.352	4.630	-0.333
Median	1.584	0.707	4.618	-0.311
Maxim	2.667	5.186	8.167	-0.188
Minim	0.796	-2.965	1.698	-0.568
Std. Dev	0.418	1.983	1.477	0.122
Skew	0.346	0.100	0.241	-0.683

Kurtosis	2.977	2.745	2.893	2.166
J-Bera	1.119	0.245	0.569	5.976
Prob.	0.571	0.885	0.752	0.050
Sum	90.961	75.701	259.3	-18.63
S.S Dev	9.559	216.4	115.1	0.820
Observe .	56	56	56	56

Source: Author's Computation using E-Views 13 (2024)

Table 2: Correlation Analysis

	FDI	GDPG	LNCAP	LNGDP	LNTRADE	CORR
GDPG	0.182	1.000				
LNCAP	-0.420	-0.272	1.000			
LNGDP	-0.026	-0.381*	0.596*	1.000		
CORR	-0.007	-0.070	-0.142	-0.126	-0.057	1.0000

Source: Author's Computation using E-Views 13 (2024)

Table 3: Augmented Dickey-Fuller (ADF) Unit Root Test Results

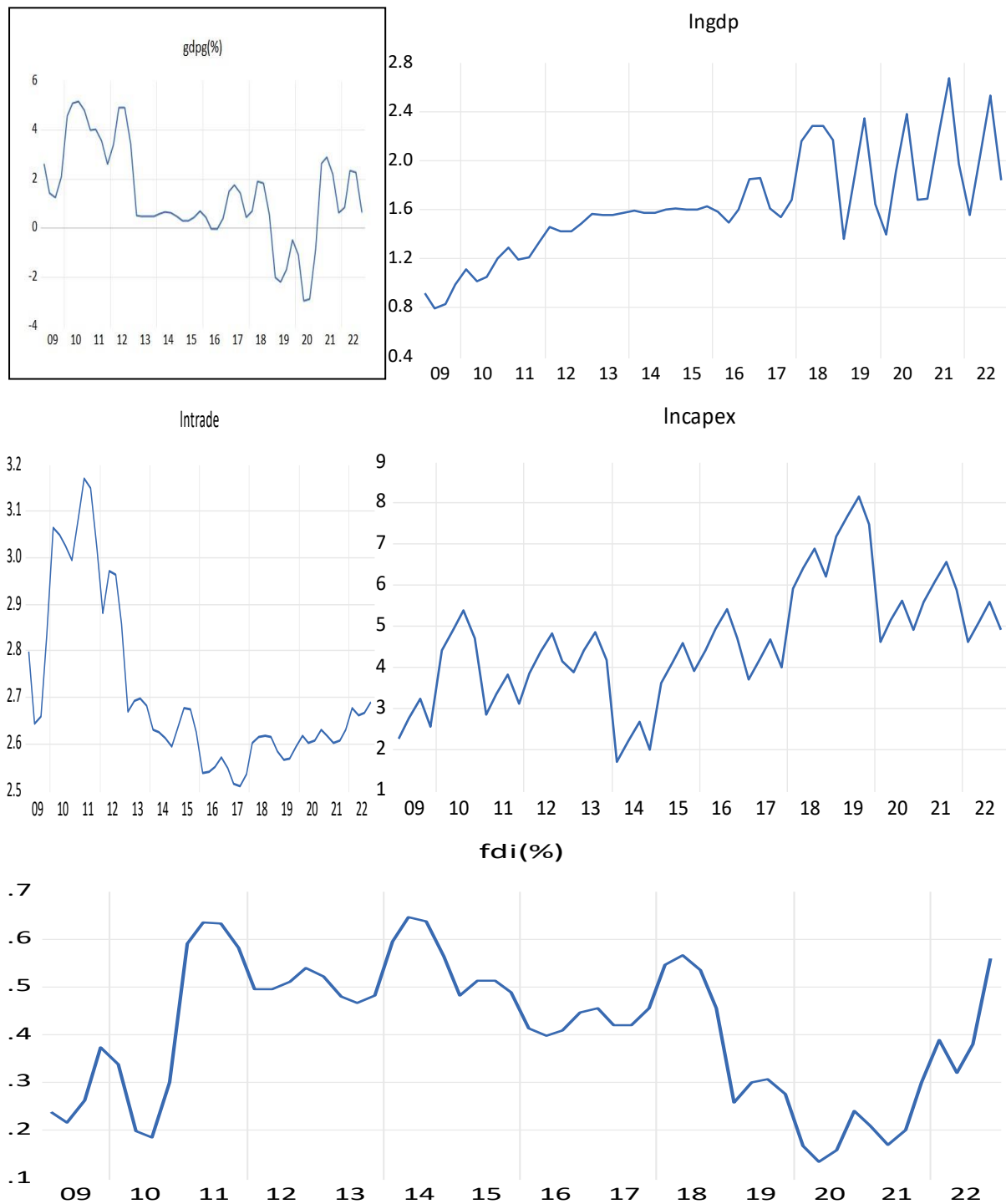
Variable	Order	Intercept	Trend and intercept	Without a trend and intercept	Decision
LNGDP	0	-0.2060	-3.1905	0.9545	1(1)
	1	-14.189	-14.192	-13.992	
GDPG	0	-2.106	-3.4468	-1.5298	1(1)
	1	-3.7066	-6.5071	-3.7184	
LNCAP	0	-2.7529	-3.2704	-0.1490	1(1)
	1	-8.1657	-8.2604	-8.2065	

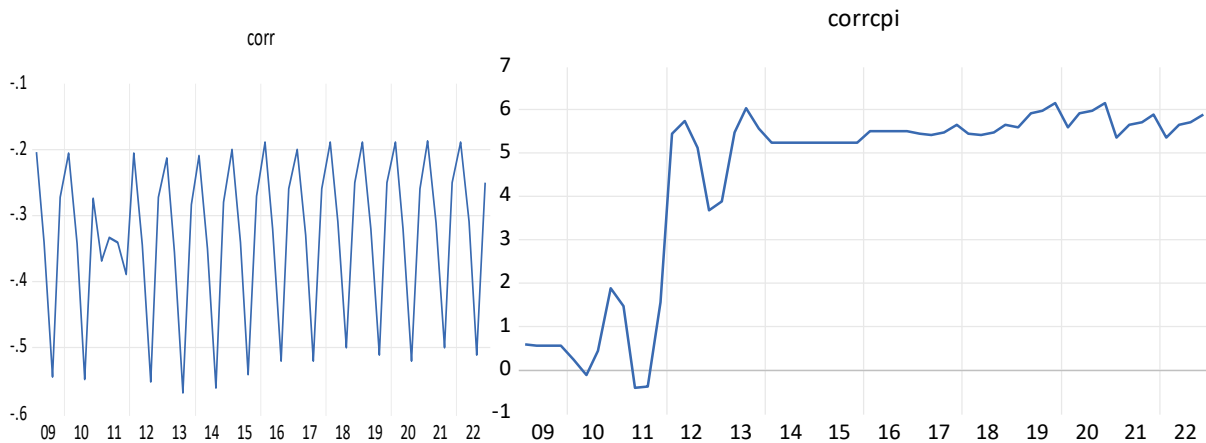
CORR	0	-3.7788***	-3.2319***	-3.7853***	1(0)
	1	-3.4997	-3.4434	-5.6669	

Note: *** denotes statistical significance at 1% level

Source: Author's Computation using E-Views 13 (2024)

Figure 1 Graphs of Time Series





Source: Author's Computation using E-Views 13 (2024)

Figure 1 demonstrates an informal way of identifying the stationarity of the variables. The variables are in levels before the application of unit root tests. The variables do not oscillate around the mean and are, therefore, not stationary in levels. The results for the ADF and PP tests are shown in Tables 3 and 4 respectively in levels and first differences, where appropriate, including an intercept, intercept with a trend as well as without a trend or intercept in the test regression. When the test statistic is more negative than the critical value, it implies that the null hypothesis that the variable contains a unit root can be rejected, whereas if the test statistic is not more negative than the critical value, then the null hypothesis cannot be rejected. The results with intercept, trend and intercept and no trend and intercept indicate that the control of corruption is stationary at levels as the null hypothesis can be rejected at the 5% significance level or higher. The test statistics for the log of real GDP, GDP growth, CAPEX and foreign direct investment indicate that the null hypothesis cannot be rejected at level terms for all specifications, meaning that the series have at least one-unit root. Turning to the Phillips-Perron test results, the findings largely confirm the conclusions from the ADF tests as both LR GDP, GDPG, and LR CAPEX, are identified to be non-stationary at level $I(1)$. Financial leakages (corruption) are stationary in levels. The combination of $I(1)$ and $I(0)$ variables makes it affirmable to proceed with the ARDL model estimation. The findings from the above two-unit root tests that were applied inform that the dependent variable was $I(1)$ whilst the independent variables were either $I(1)$ or $I(0)$ when examined with an intercept, or with trend and intercept, and without a trend and intercept. These conclusions thus make it suitable for the analysis to proceed using the ARDL method.

Table 4: Phillips-Perron (PP) unit root test results

Variable	Order	Intercept	Trend and intercept	Without a trend and intercept	Decision
LNGDP	0	-1.8327	-5.4956	0.3100	1(1)
	1	-11.579	-12.425	-10.078	
GDPG	0	-1.8857	-2.091	-1.5816	1(1)
	1	-4.8529	-4.5271	-4.9090	

LRCAPEX	0	-2.1077	-2.7095	-1.2758	1(1)
	1	-6.2336	-6.7659	-6.3876	
CORR	0	-10.263***	-21.570***	-1.8630***	1(0)
	1	-34.5517	-33.567	-35.0218	

Note: *** denotes statistical significance at 1% level

Source: Author's Computation using E-Views 13(2024)

Diagnostic Tests Results

Lagrangian Multiplier Test for Residual Autocorrelation

Serial autocorrelation refers to the correlation that occurs when one period residual is correlated with residuals in previous lags. According to Lütkepohl *et al.*, (2006), a null hypothesis of no serial correlation is accepted if the computed p-value exceeds 0.005 at 5% level of significance. On the other hand, a null hypothesis of no serial correlation is rejected if the computed p-value is less than 0.005 at 5% level of significance. The study employed the Breusch–Godfrey LM Test to ascertain the existence of serial correlation problems. Results in Table 5 indicate a p-value of 0.4371, which is greater than 0.005 at 5% level of significance. Therefore, the null hypothesis of no serial autocorrelation was accepted, concluding that the model does not suffer from serial correlation problems.

Table 5: Serial Correlation LM test for Autocorrelation

Breusch-Godfrey Serial Correlation LM Test:

Null hypothesis: No serial correlation at up to 2 lags

F-statistic	0.608311	Prob. F(2,37)	0.5496
Obs*R-squared	1.655414	Prob. Chi-Square(2)	0.4371

Source: Author's Computation using E-Views 13(2024)

Lag Selection

As mentioned in the methodology, the first step in estimating the ARDL model is the determination of the optimal lag length. Table 5 shows the results for the VAR lag length selection criterion and revealed 4 as the appropriate optimal lag. According to Kutu and Ngalawa (2016), issues of serial correlation in the residuals are resolved with the right lag length selection. More results are shown in the appendix (see Table 5).

Table 6: ARDL Lag Length Selection

VAR Lag Order Selection Criteria

Endogenous variables: LNGDP LNCAPEX CORR CORRCAP FDI____ LNTRADE

Exogenous variables: C

Date: 12/14/23 Time: 09:53

Sample: 2009Q1 2022Q4

Included observations: 52

Lag	LogL	LR	FPE	AIC	SC	HQ
0	25.12879	NA	1.93e-08	-0.735723	-0.510579	-0.649408
1	158.1646	230.2543	4.67e-10	-4.467870	-2.891866	-3.863667
2	244.7197	129.8326	7.06e-11	-6.412297	-3.485432	-5.290206
3	324.6490	101.4486	1.51e-11	-8.101883	-3.824156	-6.461904
4	400.7186	78.99535*	4.39e-12*	-9.643021*	-4.014434*	-7.485154*

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

Source: Author's Computation using E-Views 13**Heteroscedasticity Test**

The fourth parameter to be tested is the assumption of unequal variances or heteroscedasticity. The assumption of heteroscedasticity means that different samples have the same variance even when coming from different populations. In ARDL analysis, heteroscedasticity means the residuals are not well-fitted with the predicted values. Failure to comply with this assumption could significantly affect the results or even invalidate them. Various models can be used but this study employed the Breusch-Pagan Godfrey Test. The calculated p-values are shown in Table 6. Since the calculated p-values are greater than 0.05 this signals that a null hypothesis of no serial correlation is accepted at 5% level of significance.

Table 7: Heteroscedasticity Results

Heteroskedasticity Test: Breusch-Pagan-Godfrey

Null hypothesis: Homoskedasticity

F-statistic	1.668406	Prob. F(12,39)	0.1126
Obs*R-squared	17.63927	Prob. Chi-Square(12)	0.1271
Scaled explained SS	9.358025	Prob. Chi-Square(12)	0.6721

Source: Author's Computation using E-Views 13(2024)**Bound Test Results**

According to Pesaran et al. (2001), when the calculated F statistic is greater than the upper bound critical value, the null hypothesis is rejected. This signals that the underlying variables

in the study are co-integrated. If the F-statistic fails to exceed the lower bound critical value, the null hypothesis is accepted, informing that there is no co-integration among the variables.

Table 8: ARDL F-Values

ARDL F-Bounds Test		
Critical Value	Lower Bound Value 1(0)	Upper Bound Value 1(1)
1%	3.06	4.15
5%	2.39	3.38
10%	2.08	3.00
F-Statistic	4.208	

Source: Author's Computation using E-Views 13(2024)

Equally, if the F-statistics fall between the upper and lower bounds, the co-integration or order of integration must be known in order to make a conclusive reference. Based on this study's results in Table 7, the calculated F statistic of 4.208 exceeds the upper bounds at 5 percent significance levels. This implies the variables have a long run relationship in line with previous studies such as Oteng-Abaiye (2011), Odihambo (2015) and Mazorodze (2018). These studies observe a cointegrating relationship between economic growth and government expenditure.

Empirical Findings Error Correction Results

The bound test co-integration results reveal that the variables are co-integrated at level 1(0) and at first difference 1(1) in the long run. Subsequently, the study established long run and short run equations together with the adjustment term. Optimal lags were automatically chosen using information criteria, AIC. The regression output is reported in Table 8 which also presents the result of the error correction model (short-run form) and long run form of the ARDL. The coefficient (-0.582) of the ECT term (speed of adjustment coefficient or error correction term) is negative and statistically significant at 5 percent level of significance, thus satisfying a convergence condition. This, therefore, suggests that LNGDP adjusts to LNCAPEX, and CORR, in the long run. About 58.2 percent of the disequilibrium in the preceding periods has fallen back to equilibrium in the current period. In other words, it takes approximately 2 years to reach the equilibrium level in this model. Therefore, long-run relationship or equilibrium has been restored among the variables. The R-Squared value of 0.79 which is the explanatory power of the model is high, and hence suggests that LRCAPEX, CORR and other control variables are good determinants or predictors of economic growth in the short-run. The remaining 21 percent account for other macroeconomic determinants of economic growth which are not accounted for in this study.

Table 9: ECM Results

Dependent Variable: D(LNGDP)
 Method: ARDL
 Date: 12/14/23 Time: 10:08
 Sample: 2010Q1 2022Q4
 Included observations: 52
 Dependent lags: 4 (Automatic)
 Automatic-lag linear regressors (4 max. lags): LNCAPEX CORR CORRCAP
 FDI___ LNTRADE
 Deterministics: Restricted constant and no trend (Case 2)
 Model selection method: Akaike info criterion (AIC)
 Number of models evaluated: 12500
 Selected model: ARDL(3,0,0,0,4,0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
COINTEQ*	-0.582466	0.099906	-5.830161	0.0000
D(LNGDP(-1))	0.081588	0.081685	0.998809	0.3232
D(LNGDP(-2))	-0.496894	0.095435	-5.206604	0.0000
D(FDI___)	1.329191	0.344011	3.863802	0.0004
D(FDI___(-1))	0.188113	0.374873	0.501805	0.6183
D(FDI___(-2))	0.942212	0.378096	2.491992	0.0165
D(FDI___(-3))	0.718036	0.349799	2.052709	0.0459
R-squared	0.786309	Mean dependent var		0.016309
Adjusted R-squared	0.757817	S.D. dependent var		0.321308
S.E. of regression	0.158122	Akaike info criterion		-0.726245
Sum squared resid	1.125121	Schwarz criterion		-0.463578
Log likelihood	25.88238	Hannan-Quinn criter.		-0.625545
F-statistic	27.59748	Durbin-Watson stat		1.880585
Prob(F-statistic)	0.000000			

* p-values are incompatible with t-Bounds distribution.

Source: Author's Computation using E-Views 13(2024)

Results for Model 2: Moderating Effect of Financial Leakages (Corruption) on the Nexus between Capital Expenditure and Economic Growth

Displayed in Model 2 are the results on the moderating effect of corruption (financial leakages) on the CAPEX economic growth nexus. After introducing the interaction effect (LNCAPEX*CORR), the coefficients for both CAPEX and financial leakages were negative and significant in the short run. This supports the view that CAPEX, and control of corruption, are both essential contributors to economic growth. In the short run, a 1% increase in CAPEX and control of corruption reduces economic growth by 0.13% and 0.24% respectively. In the long run, the study reveals a significant negative effect of CAPEX on economic growth. A 1% increase in CAPEX reduces economic growth by 0.05% after including the interaction effect) and the effect is significant. The transformation in the coefficients of CAPEX from 0.08 (insignificant) to -0.05 (significant) implies that although government expenditure positively affects economic growth slightly, the level of corruption adversely affects the impact. This suggests that financial leakages in Zimbabwe is a drag and not a push factor for government CAPEX policies. The result thus provides empirical evidence of a conditional relationship between CAPEX and economic growth in Zimbabwe. The findings suggest that for economies to reap the fruits of CAPEX, governments should control or eradicate financial leakages.

Robustness of the Model Checks**Table 10: VAR Granger Causality/Block Exogeneity Wald Tests**

VAR Granger Causality/Block Exogeneity Wald Tests			
Date: 12/03/23 Time: 00:06			
Sample: 1992- 2022		Included Observations: 54	
<i>Dependent variable: LNGDP</i>			
Excluded	Chi-Sq	Df	Prob
LNCAPEX	15.379622	2	0.0006
CORR	15.23935	2	0.0005
All	24.81808	4	0.0002
<i>Dependent Variable: LNCAPEX</i>			
Excluded	Chi-Sq	Df	Prob
LNGDP	22.30563	2	0.0000
CORR	15.16478	2	0.0005
All	22.40944	4	0.0002
<i>Dependent Variable: CORR</i>			
Excluded	Chi-Sq	Df	Prob
LNGDP	0.420667	2	0.8103
CAPEX	0.246098	2	0.8842
All	1.500382	4	0.8266

Source: Author's Computation using E-Views 13(2024)

To check for the robustness of the model results, the study conducted a Granger causality test using Block exogeneity wild tests. The result of the test is shown in Table 11. The outcomes of the Granger causality test reflect causality among capital expenditure, financial leakages and economic growth in Zimbabwe. The outcomes from the Granger causality test display a bidirectional causality relation between capital expenditure and economic growth (LNCAPEX \rightarrow LNGDP) and (LNGDP \rightarrow LNCAPEX). Some scholars have confirmed the causality running from government expenditure to economic growth (see for instance Mazorodze, 2018; Olugbenga & Owoye, 2007).

Table 12: FMOLS; DMOLS & CCR estimation results						
FMOLS Results			DMOLS Results		CCR Results	
LNGDP	Coeff.	P > Z	Coeff.	P > Z	Coeff.	P > Z
Constant	4.1897	0.000	1.6316	0.000	1.699	0.000
LNCAPEX	0.2656	0.0793	0.1514**	0.0843	0.106*	0.003
CORR	-0.271*	0.001	-0.269*	0.002	-0.271*	0.004
CORR*LRCAPEX	-0.5714*	0.0482	-0.231***	0.001	-0.234*	0.036
R-Square	0.60751		0.95891		0.92461	
Adjusted R-Square	0.56750		0.83168		0.79154	

Note:***, **, * denotes statistical significance at 1%, 5% and 10% level, respectively

Source: Author's Computation using E-Views 13 (2024)

The study also conducted a Dynamic and Fully Modified Ordinary least squares regression (DMOLS and FMOLS), together with the Canonical Cointegrating Regression (CCR) using LNGDP and GDPG as the independent variables respectively. This would determine the moderating role of control of financial leakages on the capital expenditure-economic growth nexus in Zimbabwe. The results are shown in Tables 12 and 13. The results from all the three models (DMOLS, FMOLS and CCR) confirm that the interaction between corruption and capital expenditure derails economic growth in Zimbabwe. The results remain the same in terms of signs of the coefficients when LGDP is replaced by GDPG in Table 8. Model (3) in Table 8 also illustrates the moderating effects of financial leakages on the capex-growth nexus for robustness. GDPG was used as the independent variable and the ARDL results confirm the rest of the findings. The impulse response results in the appendix also confirm the results on all these models.

Table 13: FMOLS; DMOLS & CCR estimation results

FMOLS Results			DMOLS Results		CCR Results	
LRGDP	Coeff.	P > Z	Coeff.	P > Z	Coeff.	P > Z
Constant	1.9251	0.000	1.9251	0.000	1.9255	0.000
LRCAPEX	0.048	0.001	0.048	0.001	0.045*	0.001
CORR	-0.299	0.001	-0.298	0.002	-0.298*	0.004
CORR*LRCAPEX	-0.268	0.003	-0.268	0.003	-0.267*	0.003
R-Square	0.76923		0.76833		0.76923	
Adjusted R-Square	0.68317		0.68492		0.68317	
Durbin Watson Test	2.58619		2.57604		2.58541	
Prob (F-Statistic)	0.00000		0.00000		0.00000	

Note:***, **, * denotes statistical significance at 1%, 5% and 10% level, respectively

Source: Author's Computation using E-Views 13 (2024)

Discussion

Moderating effects of Financial Leakages

Financial leakages occur in almost every construction project, both in developing and developed countries. This severely compromises the positive image of the industry (Mejía, et al., 2020). American Society of Civil Engineers claims that corruption accounts for an estimated US\$340 billion of worldwide construction cost each year (Sohail and Cavill, 2008). Similarly, according to the indexing of Transparency International, construction is one of the most corrupt industries among the various economic sectors (Owusu and Chan, 2018). When budgets allocated to procure these essential human needs are misappropriated, the net result is a socio-economic setback (Owusu, Chan, and, Ameyaw, 2019). It has hostile effects at various levels and leads to poor performance in terms of quality non-conformance, resource underutilisation and cost overruns (Bowen, Edwards, and Cattell, 2015).

Conclusion

What has emerged from the current discussion and ongoing debate on the moderating effects of financial leakages (corruption) issue is that corruption is cancerous and retards economic growth, through negative corrosive effects on capital expenditure. To be effective, measures against corruption must therefore address these underlying causes and not the symptoms. The government needs to sharpen, deepen and expand its understanding of the root causes of

financial leakages (corruption). To uproot it, corruption needs to be tackled head on and mercilessly. Corruption takes advantage of government bureaucracy and unknowledgeable officials who handle infrastructure projects with large capital outlay. Arresting corruption helps a country overcome institutional weaknesses. The judiciary should ensure transgressors receive punitive custodial sentences. This would be a strong deterrent for would be corrupt individuals and officials.

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The nature of internal audit practice challenges prevalent in public institutions of higher learning: a systematic literature review

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Abstract

Institutions of higher learning, particularly universities, have for long received goodwill and support as hubs entrusted with developing key human capital and skills, generating knowledge products and giving evidence-based policy direction to governments essential for national development. There has, however, been an increased level of scrutiny and greater demand for such institutions to demonstrate greater value for money in view of the levels of public and private investment and trust in their programmes and operations. To that end, practices such as internal auditing have been identified as essential in safeguarding resources, promoting accountability, transparency and ensuring integrity within such institutions. However, internal audit practices in public universities, especially in developing country contexts, face persistent challenges that compromise their effectiveness. This systematic literature review interrogates these challenges in greater detail. This is achieved through synthesising empirical findings from 50 peer-reviewed studies (published between 1999 and 2025) retrieved using PRISMA 2020 guidelines from Scopus, Web of Science, JSTOR, and Google Scholar. Guided by agency theory, which underscores the need for oversight to address conflicts between agents and principals, the review identifies five recurrent challenges. These are limited auditor independence, insufficient professional competence, lack of top management support, inadequate resourcing, and political interference including intimidation. These challenges are exacerbated by weak reporting structures and a persistent audit expectation-performance gap. The findings suggest that improving internal audit effectiveness requires strategic interventions across practice, policy and theory. Recommendations include investing in auditor capacity development, enforcing structural and operational independence, strengthening governance oversight, and aligning internal audit functions with institutional strategic objectives. These measures can enhance audit resilience, promote public trust, and improve decision-making and performance in higher education institutions. This review contributes to the discourse on public sector auditing by highlighting contextual barriers and offering, through several recommendations, a roadmap for reform and future research.

Key words: Governance, Higher Education, Internal Audit, Public Institutions and Organisational Management.

Introduction And Background

Effectiveness of the internal auditing system is an issue that has been recently taken into consideration in both private and public organisations, and even at the level of the government all around the world (Eulerich & Eulerich, 2020; Mbura 2013). Arguably, this is based on two interlocking narratives. The first relates to various increased reports on corporate scandals and frauds, privacy invasions, compromised ethics and governance lapses (Institute of Internal Auditors, 2020). The second orbits around the significance of the internal auditing system in

ensuring that performance and standards are adhered to in order to facilitate the achievement of an entity's objectives (Eulerich & Eulerich, 2020; Chambers & Odar 2015). While such dynamics and intricacies are being appreciated in the management of organisations, the Institute of Internal Auditors (2020) notes that breakthroughs in technology, an increase in electronic commerce and globalisation repercussions, including certain organisational restructuring exercises among others, suggest that the management of both private and public organisations has become more complex and is likely to become more chaotic. This necessitates effective internal audit processes.

Eulerich and Eulerich (2020) buttress such narratives on the importance of effective internal audit in organisational management, concurring with arguments made by Anderson et al. (2012) by noting an increased relevance of internal audit in organisations as they are being confronted with a multitude of new challenges. These include an increasing economic complexity, extended regulatory requirements, and technological advances; including political and economic crises which tend to have worldwide negative effects. It is also noteworthy that their frequency is much higher than in the past. The developments have, therefore, been accompanied by an increasing relevance of internal auditing as a key element for the assurance of corporate governance processes, risk management, and the internal control systems (Anderson et al. 2012; Institute of Internal Auditors, 2020). Based on such a trajectory, and the socio-economic and political subtleties that saddle on organisations in their performances, both private and public entities are increasingly concerned with designing their internal control systems and risk management effectively and efficiently. Additionally, there is the need to ensure planned activities and guidelines are actually implemented.

The trajectory of the complexity of organisational management and the relevance of effective internal management in contemporary times has applied to organisations in both the developed and developing world, while institutions of higher learning are not an exception. The Baker Tilly Institute (2021) notes that at the international level public institutions, particularly colleges and universities, face heightened scrutiny over governance practices in the wake of increasing regulatory oversight, economic uncertainty, high-profile scandals and violent crimes. At the same time, and within the context of private institutions of higher learning, there have been several events that have shaped how trustees and board members perceive risk in their institutions (Baker Tilly Institute, 2021; DeSimone and Rich, 2020). This situation has been worsened by the worldwide financial crisis that has reduced government spending for many public services, including universities. Moreover, the COVID-19 pandemic halted various socio-economic and political activities, thereby impacting university funding. However, despite all these concerns, DeSimone and Rich (2020) assert that various institutions at international level, in both developed and developing countries, have maintained their internal audit function. This is especially the case for those with larger enrolments and endowments, those that receive public funding and those that have an audit committee.

In the context of Zimbabwe, internal audit in institutions of higher learning has also remained too important to ignore. The Government, through the Minister of Finance and Economic Development (MOFED) has made it mandatory for all institutions to have internal audit functions that aid the role of the external auditors in carrying out their work (MOFED, 2015). Furthermore, the government, in its 2016 National Budget statement presentation advised public sector institutions to establish internal audit committees as a means of enhancing the role of the internal audit function in the public sector. Such measures are also noticeable in education. A historiographical overview of Zimbabwe reveals that the government attempted to decentralise the tertiary education system within the first decade after independence. The National Council for Higher Education was established in 1990 as an institution responsible

for quality assurance in higher education. Currently, its broader-scoped successor institution is the Zimbabwe Council for Higher Education (ZIMCHE), established in 2006 (Garwe, 2014). ZIMCHE has the objective "...to promote and co-ordinate education provided by institutions of higher education and to act as a regulator in the determination and maintenance of standards of teaching, examinations, academic qualifications and research in institutions of higher education..." (Zimbabwe Council for Higher Education Act [Chapter 25:08] - Section 5(1). According to the Council of Higher Education Act, the Ministry of Higher and Tertiary Education is responsible for universities, polytechnics as well as colleges, with all state universities structurally designed to operate as parastatals. They are semi-autonomous and are run through councils and boards (Samkange, 2014). At the same time, private institutions of higher learning are expected to register under the Zimbabwe Council for Higher Education Act [Chapter 25:08] but maintain a high degree of autonomy in the management of the institutions.

As a way of responding to the recommendations of the Institute of Internal Auditors, both private and public institutions of higher learning in Zimbabwe have adopted internal control systems or processes that provide value-added services critical to efficient and effective organisational management (Garwe & Thondhlana, 2018). In institutions of higher learning, internal audit practitioners are charged with assisting in the effective discharge of responsibilities, promoting the establishment of cost-effective controls, assessing risks and recommending measures to mitigate those risks (Institute of Internal Auditors, 2020).

While tertiary institutions in Zimbabwe have established and implemented internal control functions in their management systems, the efficiency of internal audit in the management of these institutions has since been questioned, especially in public institutions. The ineffectiveness and incompetence of public sector internal audit departments is noted by Vincent Chakunda in an interview with Chadenga (2021). He notes that public internal audit departments are weak as they invariably fail to unearth graft in public institutions. It is noteworthy that the auditor-general has been able to unearth malpractices and corruption in public entities that somehow remains undetected by internal audit systems. Internal audit systems are responsible for furnishing top management with analyses, appraisals, counsel, and information on internal financial activities (Chadenga, 2021; Institute of Internal Auditors, 2020). In 2018, online news outlet Bulawayo24.com reported that lecturers at the University of Zimbabwe claimed the institution was being run by some corrupt top executives, hence prejudicing the university millions of dollars. The scheme was allegedly being executed through overpricing of goods and services, flouting of tender board procurement guidelines, splitting of tenders and haphazard construction projects made to secure rich pickings. In that regard, millions of dollars were allegedly being siphoned out of the institution through non-core activities such as tree felling, purchase of lawn mowers, solar lighting systems and legal fees, despite the institution having an internal audit system.

Research carried out by Guzura and Chigora (2009) after the first eight years of the new millennium shows that corruption has gone unnoticed in Zimbabwean tertiary institutions, inspite of the presence of internal audit units. To date, nothing with corruption continuing unabated (Chadenga, 2021). Public institutions of higher learning, whose numbers have increased to cater for a growing demand in higher education, were historically thought to be immune from corrupt practices by virtue of their centrality in the training of leaders in commerce, politics and society at large.

In light of the economic and political environment prevalent in Zimbabwe in the 21st century, public institutions had to grapple with several challenges. These, in turn, have led to the emergence and exacerbation of corrupt practices making internal audits elusive. The problems

attached to this include the increasing loss of confidence and a rise in unethical cultural practices that affect the educational institutions, traditionally places for imparting knowledge and making people more disciplined. Considering the arguments stated above, internal audit units still exist in institutions of higher learning in Zimbabwe, yet their effectiveness has been punctured due to some of the issues highlighted previously, and which remain simply tips of a larger iceberg.

Literature Review

Understanding key concepts

Auditing

Demirović, Isaković and Proho (2021) assert that internal audit is an independent activity whose role is to provide independent expert opinion, advice and recommendations for business improvement. They add that it helps the legal entity (company/institution) in the realisation of set goals by applying a systematic approach to assessing the adequacy of established risk management processes, internal controls, business management and application of prescribed procedures among others. Such a definition is in line the Institute of Internal Auditors (2020), who believe internal auditing is an independent, objective, assurance and consulting activity that adds value and improves an organisation's operations. In this regard, it helps an organisation accomplish its objectives by bringing a systematic and disciplined approach to evaluating and improving the effectiveness of risk management, control, and governance processes at an organisational level.

McGee (2020) describes auditing as a process by which an impartial individual designated as an auditor examines and expresses their opinion on an organisation's financial statements in accordance with their appointment and any applicable legal requirements. To that effect, an auditor must be a specialist who reviews the internal control system and acts as an examiner for financial statement preparers (Metwaly et al., 2023). As further elaborated by the Auditing Standards of England and Wales, an internal control system is the entire set of controls, whether financial or otherwise, put in place by management to ensure that an organisation's operations are conducted in a systematic and effective way, protecting its assets and securing them as securely as possible while also guaranteeing the accuracy and completeness of its records. It includes internal auditing as well as internal checks. Internal audit is an impartial appraisal role within an organisation for the review of the system of control and the quality of performance as a service to the organisation (Mökander, 2023). An internal auditor would thus be a worker whose job it is to make sure the company's internal control system is operating efficiently and entrusted with the responsibility to report back to management to maintain accountability (Alqudah et al., 2023).

Internal auditing accountability in public institutions

According to Donnelly and Donnell (2023), accountability is the act of proving success or accomplishment to another person. It entails disclosing, elaborating, and defending one's actions or manner of carrying out one's duties (Ferry et al., 2023). According to Mana et al. (2023), accountability is also the duty to show that work has been done in compliance with established guidelines and standards and that officers report performance outcomes fairly and honestly in relation to assigned tasks and/or plans. It entails carrying out procedures in a transparent manner while adhering to due process and giving feedback. As a complement to public management, Cordery, Arora and Manochin (2023) see accountability as a defining feature of contemporary democratic governance, where those in authority must be held responsible for their choices, policies and spending. Higher education has evolved into a legitimate profession with the ability to impact public financial management. Given this, it is appropriate for any organisation to have an efficient accounting control system with internal audits to ensure compliance with statutory requirements, protect the company's assets, and provide good monitoring and check against the financial statements (Carcello et al., 2020). Currently, it is crucial to update auditing practices to evaluate the sufficiency, dependability, efficiency and effectiveness of other controls, which include procedures, standards and budgeting systems. This is particularly so due to the growing demand for change in the public sector including good governance, transparency and accountability (Saputra & Yusuf, 2019).

Studies on responsibility in higher education are numerous (Macheridis & Paulsson, 2021). What is also noteworthy is that accountability is frequently viewed in much of the earlier literature as vague and fragmented, evolving over time based on variables like ideology and governmental goals (Macheridis & Paulsson, 2021). Since it depends on the individual holding a position of responsibility, accountability is sometimes referred to as context-dependent (Dillard & Vinnari, 2019). Accordingly, responsibility connects a particular officeholder to the social structure in which they function (Ceva & Ferretti, 2021). Therefore, despite the abundant literature, there is yet no consensus on how accountability is delivered and how a desire for increased accountability should be understood (Romzek, 2000). This study, therefore, seeks to deepen discussions on this concept as well as add some clarity to the debates, while also critically interrogating previous understandings.

Theoretical Framework

This review is premised on the Agency Theory. Eisenhardt (2015) asserts that the goal of agency theory is to address issues that may arise in agency relationships, or between principals (such as shareholders) and their agents (business leaders). Agency theory tackles two aspects, with the first pertaining to issues that occur when the principal and agent have conflicting goals or desires, and the principal cannot confirm what the agent is doing. The second aspect pertains to issues that occur when the principal and agent have different risk attitudes (Badara & Saidin, 2014).

Alzeban and Gwilliam (2014) define such an intermediary as an auditor who reviews financial documents that might include inaccurate or partial financial information. This could be due to the principal judging the agent's conduct based on these, among other things. It is also important to point out that an internal auditor may also be interested in the financial domain, which includes the audit of financial statements. According to Eisenhardt (2015), agency theory can be used to examine, empirically, whether cross-sectional disparities in internal auditing methods represent the various contracting relationships resulting from organisational form

variances. From the perspective of agency theory, an internal audit would help and so the internal auditor's primary objective would be to lessen the degree of inefficiency associated with the knowledge asymmetry between the principal and the agent. Consequently, it may be regarded as a technique to guarantee that corporate governance is interpreted as striking a balance between the egocentric behaviour of all members of the firm and their expectations (Dobija, 2017).

From the perspective of agency theory, an internal audit helps to lessen information asymmetry. According to the agency theory, an internal auditor's primary objective is to lessen the degree of inefficiency associated with the knowledge asymmetry between the principal and the agent. Consequently, it may be regarded as a technique to guarantee that corporate governance is interpreted as striking a balance between the egocentric behaviour of all members of the firm and their expectations (Dobija, 2017). By applying the agency theory to the current study, it can be concluded that the Act of Parliament and public financial management laws serve as the agency's guiding principles in the public sector. Blair, cited by Mallin (2007), notes that although managers are meant to act as representatives of a company's owners, they need to be closely watched, and institutional frameworks need to have checks and balances to ensure they do not abuse their position of authority. Accordingly, most agency theorists agree that if the agent's (director's) actions are not restrained or controlled, or if the interests of the agents and principals do not coincide, agency issues will be present in the agency relationship (Van Puyvelde et al., 2013). With respect to institutions of higher learning, this study contends that interaction between the government (as the principal) and respective university management (as the agents) is where agency theory is most useful. The principal would want to maximise wealth by increasing the company's value through the actions of the agent, the latter of which is expected to perform based on the vision and aspirations of the principal.

Internal audit practices challenges in public institutions of higher learning

Regardless of the industry, an audit committee's goals are to enhance governance and supervise internal and external audit operations (Alzeban & Gwilliam, 2014). They perform an oversight function by offering the board and management their unbiased opinions and suggestions regarding the organisation's risk management, governance and control procedures (Mihret & Yismaw, 2017). To guarantee that the best assurance is provided, the board needs to be aware of the roles played by assurance providers who supervise the efficient use of assurance services.

In certain situations, the audit board can be thought to have failed to provide the assistance needed for the IAF to carry out its duties effectively. According to Chepkorir (2015), the effectiveness of the minister's audit may be negatively impacted by a lack of independence, diligence and experience. Peecher (2014), in his study on the predicament of internal auditors, identified various factors creating barriers to efficacy of audit committees and internal audits themselves. These included the failure to hold management responsible for conclusions, suggestions, and agreed-upon actions; inadequate response to claims of coercion and intimidation pertaining to internal audits; failure to apply professional scepticism by being too willing to accept management explanations; presence of politically appointed and compromised audit board members as well as the presence of audit committee members intimidated by the seniority of the audit client.

Laws, auditing standards and regulations do not define audit quality, as emphasised by Shokiyah et al., (2023). The report also highlights that auditing standards provide guidance on what must be done to ensure that audits are conducted satisfactorily. Additionally, it emphasises that adherence to the criteria is proof that a quality audit is being carried out.

According to a study by Baharud-din et al., (2014), one of the issues affecting the department's efficacy is the calibre of internal auditing.

According to the International Internal Audit (IIA) standard on auditor proficiency, Internal Audit Firms (IAFs) must possess the solid expertise needed to carry out their audit responsibilities (Vitalis et al., 2024). To show proficiency, one can obtain professional certifications like Certified Information System Audit (CISA), Certified Fraud Examiner (CFE) and Certified Internal Auditor (CIA), to name a few. The success of the IAF depends on having a robust, capable and reliable human resource base. Alqudah (2023) further emphasises that a trustworthy and efficient internal audit function is largely dependent on competence.

All engagements must be carried out by people who possess the proficiencies and abilities that the department requires, according to the International Standard of Internal Auditing (Proficiency Standard). In addition to having the necessary credentials, internal audit departments should be able to prove their acquisitions to other staff members. The inability to recruit personnel who can adapt to the evolving demands of the public sector and the necessary competences has an impact on the IAF's efficacy and efficiency (Renschler et al., 2023). It is challenging to meet the demand for qualified internal auditors since it is necessary to look at both the knowledge and abilities needed for internal auditing, as well as the ability to apply these abilities across a variety of sectors. As a result, internal auditors must possess a broader set of skills, abilities and characteristics (Renschler et al., 2023).

Furthermore, as contended by Al Mandhari et al. (2023), internal auditors need to demonstrate proficiency in a variety of fields, including operational perspectives, system analysis and control evaluations. According to Ernst & Young's (2018) research, the growing importance of internal audits causes a skills gap, and they show that there is still a demand for more qualified internal auditors. This is supported by the Finance, Accounting, Management Consulting and Other Financial Services (FASSET) Sector Education and Training Authority (SETA), which acknowledges that internal auditing is a competence that is in short supply in South Africa (FASSET, 2017).

A study by Adam (2023) confirms that public organisations encounter difficulties in attracting the ideal mix of talent that can meet stakeholder needs and add greater value to the organisation. He notes that public organisations have difficulty keeping internal audit employees on board for the necessary amount of time to allow them to make a substantial contribution to the organisation. Internal auditing is utilised in many organisations to prepare workers for managerial positions, which burdens the remaining personnel (David, 2014). As posited by Zisu and Shefer (2024), budgetary restrictions have had a detrimental effect on public sector internal audit departments' capacity to draw and keep talent, especially in technical fields like data mining, cybersecurity and information systems.

In addition, studies conducted by scholars such as Ilias et al. (2023) show that the incapacity of internal audit in the public sector to adapt to new requirements, the growing technical skills gap, and the incapacity to deal with reduced resources continue to be significant challenges. Sahdan (2017) agrees, noting the almost global lack of competent internal audit staff, with such realities being affirmed in contexts such as South Africa (Bramasto et al., 2023) where the problem is described as being of urgent concern. Additionally, Bramasto et al. (2023) note that a shortage of skilled staff is one of the biggest problems facing internal audit operations in the public sector.

Meanwhile, Brierley et al. (2013) report that comparable findings were obtained from other studies conducted in developing nations, such as those on the quality of internal auditing in the Sudanese public sector. Haliah et al (2024) further report that internal audit employees in this

context lack the requisite training, experience and education, and they were unable to access continuing professional development opportunities to stay current. This was also confirmed by Deffor's (2017) research at the National Treasury which showed that IAFs lacked a competent and adequate audit staff. Establishing IAFs was, therefore, then mandated for public entities under the MFMA (2003) and the PFMA (1999). Demonstrating that internal auditing is valued in the public sector has led to a high demand for audit specialists.

Concerns over personal security of internal auditors

Work by Alazzabi et al. (2023) reports on internal auditors being intimidated, compelled to hide information or even being beaten up in their line of work. Further, according to the Institute of Internal Auditors South Africa (IIASA, 2018), internal audit professionals express concern about their employment and personal life in several reports sent to the organisation. IIASA (2018) reports internal auditors' biggest challenges were intimidation and victimisation.

The use of violence or threats that would make someone with normal sensibilities fear damage or injury is known as intimidation (Lenz & Sarens, 2017). According to the auditing perspective, intimidation occurs when customers or other interested parties pose actual or perceived threats to auditors' ability to carry out their work impartially (Alazzabi et al., 2023). The Global Internal Audit Survey conducted in 2005 found that the prevalence of intimidation was higher in Africa (48%), than in Europe (15%) and the Middle East (18%). Therefore, it is concerning that there are so many instances of intimidation in Africa's public sector. These incidences influence the internal audit fraternity in general. The examples below demonstrate the extreme steps taken to influence the independence and objectivity of internal auditors

According to Brinkley (2015), an audit function is independent and objective if it is self-sufficient, self-reliant, free from undue influence and operates on its own. Internal auditors must be impartial in their job, according to the IIA, which defines internal auditing as an independent role. According to the standard, independence is defined as the absence of elements that compromise the internal audit function's ability to fulfil its responsibilities impartially. According to Kibara (2017), the independence and objectivity of the internal audit function are determined by its reporting structure. The foundation of the audit profession is the idea of audit independence, which is predicated on the public's trust in the function's capacity to fulfil its obligations (Alazzabi et al., 2023). Studies by Egbunike and Egbunike (2017) support this idea, stating that the independence and objectivity concept is crucial for both internal and external audits. Without both, auditing would be like a giraffe without a neck. They are both regarded as essential components of the profession. Because of this, standards are used by accounting and auditing regulators to emphasise independence and objectivity.

According to Bramasto et al. (2023), internal auditing is the first line of defence against inadequate reporting, financial irregularities and bad governance. In order to carry out this role, the IIA mandates that the Chief Audit Executive (CAE) provide functional reports to the board of directors, audit committee or other appropriate governing body. Approval of the internal audit charter and risk-based internal audit plan, receipt of communications from the chief audit executive regarding the performance of the internal audit activity in relation to its plan and other issues, and approval of decisions regarding the appointment and dismissal of the chief audit executive are all examples of functional reporting.

To achieve the degree of independence necessary to perform internal audit duties, the CAE must have direct and unrestricted access to senior management and the board through a dual reporting model (Renschler et al., 2023). The independence of the internal audit function is enhanced when it reports to a level within the organisation that has the power to safeguard and

advance the function, guarantee that it has extensive audit coverage and prevent interference with its mission. Getting support and reporting to the board of directors, senior management and audit committee can help increase audit client involvement. The ultimate source of the internal audit function's autonomy and power is its functional reporting line. At least once a year, the chief audit executive must present the board with evidence of the internal audit activity's organisational independence (Institute of Internal Auditors Research Foundation, 2009).

The audit profession has been questioned and scrutinised because of previous accounting crises that have happened both locally and internationally. Global corporate scandals include the WorldCom incident in 2002 and the Enron catastrophe in 2001. Recent local financial scandals include those involving the Passenger Rail Agency of South Africa (PRASA), the Tshwane Metro Police Department, the Department of Home Affairs, the VBS Bank and for Tongaat Hulets. Despite the institutions' internal audit responsibilities, this has been made worse by the rise in corruption, irregular spending and subpar service delivery (Halimah & Radiah, 2016). Further, because of their involvement in corporate scandals and failures, internal audit functions' role in promoting accountability and transparency is under the limelight (Beasley et al., 2018). Stakeholders began to insist on the disclosure of these activities' involvement in company failures, as well as their degree of accountability. In recent decades, a lot of attention has been paid to the presence of an expectation gap between what the public believes internal audit functions should accomplish, and how they have defined their objectives and responsibilities (PWC, 2013).

Although the audit profession has been permitted to function in a self-regulatory setting, stakeholders are starting to wonder if this can continue. Furthermore, Abiodun (2020) contends that a profession must demonstrate that it performs the duties specified in its mandate to establish its professional activities and obligations. To put it another way, a profession is required to perform what it claims it will do. Wiggins et al. (2014) provoked debate regarding the historical significance of the audit in a case study of Ernest & Young's involvement in the failure of Lehman Brothers. This research is significantly impacted by some of the significant issues raised in this case study. It is inferred that changes in the profession have rendered the auditor's obligation to the public obsolete (Vitalis et al., 2024). Although these issues were raised in connection with external audit, internal audit and its relationship with management are also pertinent. This is illustrated by Toshiba's case, where an internal audit found that the company had exaggerated earnings by at least \$1.2 billion between 2009 and 2014 (Coram et al., 2015). Although the firm had good corporate governance on paper, it was found that the case showed that effective corporate governance practices are not always implied by a competent corporate governance structure. Myths disclose a lot about how other people interpret the world, according to Chambers (Vitalis et al., 2024). The author lists a few myths, including the idea that auditors are nit-pickers and faultfinders. Sifile and Ngwenya (2015) agree with Chambers (Jachi & Mandongwe, 2019) that while auditees may hold certain misconceptions about auditors, most of them are false. According to Coram et al. (2015), people who are found wanting usually have unfavourable ideas about an audit to disparage it for their own benefit. According to Sifile & Ngwenya (2015), customers place a great deal of importance on the audit impression when audit services are outsourced. Kahyaoğlu et al. (2020) insist auditors have been severely chastised for failing to satisfy society's expectations for at least three decades, due to the audit expectation performance gap.

A study by Christopher (2015) aimed to verify if internal audit, a corporate control procedure, is operating efficiently in public institutions in Australia. To create an internal audit evaluation framework, the study consulted published literature, agency theory and best practices. After

this, a survey tool was created using the framework to investigate if internal auditing is set up to improve governance in the Australian public university system. From the findings, most university internal audit departments operate under adaptable structure and functional arrangements to fulfil the theoretical goal of improving governance through internal audit. A small percentage of functions failed to meet best practices for fulfilling the theoretical role of internal auditing. Furthermore, the flexible arrangements do not ensure internal audit functions currently adhering to best-practice norms will do so in the future. The absence of government laws or the profession's mandated requirements for compliance are contributing causes to non-compliance and flexible operating arrangements. The study provides avenues for further research to confirm the findings with other stakeholders.

Choi and Chun (2021) investigated connections between organisational performance and various aspects of responsibility. Ordinary least squares multiple regressions and ordered logistic regressions were used to analyse the data from Korean higher education institutions. To identify any sectoral variations in the connections, they analysed their models using both the complete data and the data from public institutions alone. Overall, the findings demonstrate that businesses achieve better performance when there is greater responsibility. Specifically, most of the performance metrics in every institution have a favourable relationship with legal accountability. Conversely, it is unclear how legal responsibility and procedural transparency relate to one another. In every business, there is a consistent and positive correlation between procedural transparency and student happiness and hierarchical responsibility. Political accountability is significantly linked to student satisfaction only in public institutions. Higher political accountability in making external policies is positively related to student satisfaction, whereas higher political accountability in internal management is negatively associated with student satisfaction.

Ziniyel et al (2018) did work to evaluate the impact of internal auditing practices on financial management. Their research problem was examined using a descriptive cross-sectional research approach. Primary data were gathered from audit, accounting and institution leaders on various campuses of a Ghanaian university using a questionnaire and interview guide. Descriptive statistics and the binary logistics regression framework were used to examine the data. According to 58.8% of the respondents, the survey shows that internal auditors' financial performance in relation to the university's mandatory recommendations is excellent. The university's internal auditors possess the necessary training and expertise to affect financial performance. Furthermore, managerial support and the independence of the internal audit function were found to be important factors influencing the university's financial success. The university's internal audit is now dealing with issues such as shortage of office space, staff and accommodation. Lastly, it has been determined that management's execution of the internal audit's suggestion is ineffective. The study concluded that to affect financial performance, appropriate internal auditing procedures are required. The potential for improving financial performance is limited by the difficulties with internal auditing procedures. It is advised that the university's administration prioritise hiring new internal auditors for each faculty rather than enhancing the current ones.

To solicit for opinions on the issue under the study, descriptive statistical analysis was used to analyse the responses because the study was exploratory in nature. The findings show that all Malaysian public universities have an internal audit unit, which is in line with the requirement of Treasury Circular Nos. 9/2004 and PS 3.1/2013. Two-thirds of the respondents are involved in evaluating the effectiveness of the risk management process and the older public universities were noted to have already achieved an advanced level with well-established risk management

practices. Meanwhile, the majority of the newer public universities still have a basic or developing level of risk management practice.

Bello et al. (2018) investigated how top management support affected the link between organisational performance and internal quality dimensions in federal universities in Nigeria. 400 samples of top-level internal audit employees from 40 federally controlled colleges in Nigeria were selected for the study's analysis. The data was generated using a questionnaire instrument and then subjected to Confirmatory Factor Analysis (CFA) and Exploratory Factor Analysis (EFA) to identify underlying dimensions. The results of the data collection and analysis, which employed inferential statistics, showed that the performance of Nigerian federal universities is greatly and favourably impacted by the interaction of internal audit competence, independence and size with top management support. The findings provide ground for new policy initiatives to strengthen internal audit and enriched the literature by providing the moderating effect of top management support as instrumental to organisational performance. It is, therefore, recommended that internal audit competence, internal audit independence and internal audit size should be given more attention and mechanism through which these qualities can be employed and sustained for more internal audit service delivery and efficiency in Nigerian federal universities.

Macheridis and Paulsson (2021) conducted a study that aimed to investigate the implementation of the internal quality assurance system (IQAS) on HEIs performance, mediated by financial management accountability. The commitment from foundation leadership on financial management accountability and their implications for HEIs' performance is also carefully examined. The leadership of private HEIs under Region IV Service Institutions provided samples of 108 respondents for this study. The sample method that was selected was purposive sampling, which is a subset of non-probability sampling. The hypothesis was tested by statistical data analysis using the structural equation model. The findings show that while IQAS implementation has a significant impact on HEI performance, it has little effect on financial management responsibility. Furthermore, the dedication of foundation leadership significantly improves HEI performance and financial management accountability. Financial management accountability also has a significant positive effect on HEIs' performance. Financial management becomes important because the entire activities of HEIs should end with financial reporting. Therefore, financial and non-financial aspects are two interrelated and complementary aspects in the accreditation process. The findings of this study suggest that performance measurement is very crucial as a part of efforts to meet the general accountability requirement for organisations, particularly in HEIs.

A study on the challenges of establishing internal audit structures in the Sudanese public sector was carried out by Brierley et al (2001). The lack of internal auditing in the Sudanese public sector is explained in this study by direct observation and interview research methodologies. In the context of a very limited technological infrastructure and a lack of coordination and cooperation among the various parties responsible for internal audit in the public sector, the specific issues raised in this paper - low salary levels, low levels of staff training and expertise, and low staff esteem and motivation - are seen. Internal audit in the Sudan takes place against a background of economic stagnation and political instability, and within a culture in which corrupt and irregular practice is endemic and institutionalised at all levels of society. In such circumstances, and without the political will to strengthen its potential and practice, it is likely that internal audit will continue to be marginalised in the foreseeable future.

Methodology

This study adopted a systematic literature review (SLR) approach to examine the nature of internal audit practices and the challenges facing internal auditors in public institutions of higher learning. The objective of the review was to generate a comprehensive, evidence-based understanding of the current state of internal audit functions in public universities and colleges, particularly within developing country contexts. The review aimed to synthesise insights across studies to identify recurring patterns, institutional challenges and contextual factors shaping audit performance in higher education. It also sought to lay a foundation for the development of reform frameworks that can strengthen internal audit practices within these institutions.

The review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines to ensure methodological rigour, transparency and replicability. The review covered literature published over a 26-year period, from 1999 to 2025. This timeline was chosen to capture both foundational research and contemporary developments, including post-pandemic shifts in public sector governance and auditing practices. Emphasis was placed on studies relevant to the evolving institutional and governance dynamics in public universities, particularly in Africa and other developing regions where financial oversight remains a persistent concern.

Four major academic databases were used to conduct the literature search; Scopus, Web of Science, JSTOR and Google Scholar. These databases were selected due to their comprehensive indexing of peer-reviewed research in relevant fields such as public administration, education management, internal auditing, governance and financial accountability. The search strategy involved combining key terms and Boolean operators, using search strings such as: “internal audit practices” AND “public universities”; “audit challenges” AND “higher education” AND “public institutions”; “audit independence” OR “internal control systems” AND “Africa” OR “developing countries”; and “public accountability” AND “internal auditors” AND “universities.” The initial search yielded a total of 1,280 articles. After removing 260 duplicate records, 1,020 unique articles remained for screening. These were first reviewed based on their titles and abstracts, leading to the exclusion of 790 records that did not meet the inclusion criteria. The remaining 230 full-text articles were then assessed for eligibility. Based on this assessment, 55 studies were ultimately selected for inclusion in the final synthesis. The selection process is illustrated using the PRISMA 2020 flow approach, covering identification, screening, eligibility and inclusion phases.

To ensure consistency and reduce bias, the study selection process was conducted independently by two reviewers. In cases where disagreements arose regarding the eligibility of studies, a third reviewer was consulted to reach a consensus. A standardised data extraction template was developed and used to collect key information from each study included. This information included the author(s), publication year, geographic focus, research design, objectives, and main findings related to internal audit practices and challenges. The inclusion criteria for the final selection required that studies be empirical in nature (quantitative, qualitative, or mixed methods), focus on internal audit functions within public institutions of higher learning, be written in English, and also fall within the publication window of 1999 to 2025. Studies that dealt solely with private sector auditing, theoretical papers lacking empirical data, or those not directly related to internal audit functions in higher education were excluded. This approach ensured that the synthesis was grounded in evidence-based research directly relevant to the scope of the study.

Each of the selected studies was evaluated for methodological quality using the Mixed Methods Appraisal Tool (MMAT, 2018 version). Only studies that met a moderate to high methodological quality threshold were retained. This quality appraisal step ensured that the synthesis and conclusions drawn from the review were based on methodologically robust evidence. Given the heterogeneity in study designs, institutional settings, and outcome measures, a statistical meta-analysis was not feasible. Instead, a narrative synthesis approach underpinned by thematic analysis was used. This allowed for the identification of key patterns and recurring themes across different contexts. Thematic analysis of the selected literature revealed several consistent issues that impact internal audit performance in public higher education institutions. These include insufficient structural independence of audit units, limited professional capacity and training of internal auditors, inadequate resource allocation, weak institutional support from university leadership, and broader governance and regulatory challenges that limit audit effectiveness.

This synthesis approach enabled the organisation of findings into coherent thematic categories that reflect the lived realities of internal audit practices in public universities, especially in contexts characterised by financial constraints, regulatory gaps and political interference. The PRISMA flow framework summarising the selection process is described as follows: Of the 1,280 records initially identified, 260 duplicates were removed, leaving 1,020 articles for title and abstract screening. From these, 230 full-text articles were assessed, and 55 met the eligibility criteria and were included in the final review. By employing a rigorous and transparent review process, this methodology provides a strong foundation for the subsequent analysis of internal audit practices and challenges in public institutions of higher learning. The PRISMA flow diagram below outlines the selection process from initial identification to final inclusion:

Table 1: PRISMA Flow chart: Inclusion criteria

Stage	Number of Records	Notes
Records Identified	1,280	Database search from Scopus, Web of Science, JSTOR, Google Scholar
Duplicates Removed	260	Duplicate articles across databases
Records Screened (Title/Abstract)	1,020	Screened based on relevance to audit in public higher education
Full-Text Articles Assessed for Eligibility	230	Reviewed in-depth against inclusion criteria
Studies Included in Final Synthesis	55	Empirical, high-quality studies on internal audit practices and challenges

Source: Researchers 2025

Results And Discussion

The systematic review identified several core challenges hindering the effectiveness of internal audit practices in public institutions of higher learning. These challenges are categorised and discussed below, drawing on both primary findings and previous scholarly literature.

Lack of Auditor Independence and Objectivity

A recurring challenge in the reviewed literature is the compromised independence of internal auditors in public universities. Despite the IIA's requirement for internal auditors to operate free from undue influence, many institutions lack the structural and managerial safeguards necessary to ensure this. Several studies (Peecher, 2014; Alazzabi, Mustafa, & Karage, 2023) document cases where auditors have been subjected to intimidation, coercion, and political pressure. This is particularly evident in developing countries where governance structures are weak. The IIA SA (2018) reported that internal auditors in South Africa were frequently threatened or pressured to withhold adverse audit findings. Similar findings emerged from the Global Internal Audit Survey (2005), which revealed that intimidation was reported in 48% of internal audit functions across Africa. Chepkorir (2015) and Kibara (2017) emphasise that when internal auditors are politically appointed or report within the same chain of command they are tasked to audit, independence and professional scepticism are severely undermined. As a result, auditors are less likely to challenge unethical practices or recommend corrective action, rendering the audit function ineffective.

Inadequate Competence and Professional Capacity

A lack of professional competence and technical expertise is another major challenge affecting the internal audit function in public universities. According to Vitalis et al. (2024), the effectiveness of any internal audit depends significantly on the skills and qualifications of audit personnel. However, many institutions struggle to attract or retain adequately trained staff due to financial limitations and poor career development prospects. Bramasto et al. (2023) note that the shortage of skilled personnel is one of the most critical human resource issues affecting internal auditing in South Africa's public sector. Similarly, Renschler et al. (2023) argue that the growing complexity of the public sector—driven by digitalisation, cybersecurity and data governance has widened the skills gap, with many internal audit departments failing to keep pace with these evolving demands. Professional certifications such as the CIA, CISA, or CFE remain rare among university audit personnel, as highlighted by Alqudah (2023) and the FASSET SETA (2017) who categorise internal auditing as a scarce skill. This deficit directly impacts audit quality and the credibility of audit reports in public institutions.

Weak Support from Top Management and Governing Boards

The review also found that insufficient support from top management and governing boards impedes the internal audit function's ability to fulfil its mandate. When management fails to endorse or act on audit recommendations, internal audit becomes a procedural formality rather than a mechanism for governance improvement. In Ghana, Ziniyel et al. (2018) observe that, despite competent internal audit personnel, audit effectiveness was curtailed by weak management action on recommendations. Similarly, Bello et al. (2018) found that in Nigerian universities, top management support significantly moderates the relationship between internal audit quality and institutional performance. This challenge is exacerbated when internal audit functions are underfunded or viewed with suspicion by leadership, reducing their influence and operational scope. As Christopher (2015) notes in his study on Australian universities, flexible audit structures without strong governance mandates can lead to inconsistent or superficial audit engagement with strategic decision-making.

Structural and Reporting Line Inefficiencies

Another significant challenge is the absence of clear and functionally independent reporting lines. Ideally, internal audit units should report functionally to an independent audit committee

or board, as per IIA standards (Institute of Internal Auditors, 2009). However, many public universities operate within bureaucratic or politically influenced systems where internal audit is subsumed under senior management control. Renschler et al. (2023) emphasise the importance of dual reporting—administratively to the CEO or VC, and functionally to the board or audit committee. Without this model, auditors lack the authority and protection needed to investigate and report without fear of reprisal. The literature further shows that weak institutional frameworks prevent internal audit systems from being fully integrated into governance systems. In many cases, audit functions exist in name but are operationally disconnected from core financial and managerial processes, limiting their impact on institutional reform (Brierley et al., 2001; Christopher, 2015).

Political Interference and Governance Challenges

Political interference and misalignment with institutional governance norms emerged as critical impediments to audit effectiveness. In politically charged environments, audit appointments are often made based on affiliation rather than merit, leading to audit functions that lack both credibility and autonomy. Peecher (2014) outlines how audit committee members are sometimes intimidated by senior managers, particularly in politically connected universities. Furthermore, Chepkorir (2015) highlights how the appointment of politically connected individuals to oversight roles undermines audit objectivity and weakens institutional checks and balances. The situation in Sudan, as documented by Brierley et al. (2001), illustrates how economic instability and institutionalised corruption can marginalise internal audit altogether. In such contexts, the absence of political will effectively nullifies any formal audit structures, leaving institutions vulnerable to fraud and mismanagement.

Resource Constraints and Budget Limitations

Financial and infrastructural limitations are persistent challenges that affect the operational capacity of internal audit functions in public universities. Budgetary constraints hinder the recruitment of qualified staff, investment in audit technologies and provision of resources for continuous professional development. Zisu and Shefer (2024) point out that departments often lack the technical expertise needed for areas like IT auditing, data analysis or cybersecurity, due to inadequate funding. Similarly, David (2014) notes that internal audit departments in the public sector are often used as training grounds for management, leading to high turnover and the loss of institutional memory. In Ghana, Ziniyel et al. (2018) found that inadequate office space and audit resources negatively affected internal audit operations. These constraints limit the scope and depth of audit reviews, delay report turnaround, and reduce the function's value to institutional governance.

Misconceptions and Low Audit Awareness

Another subtle but impactful challenge identified in the literature is the general misconception of the internal auditor's role. Sifile and Ngwenya (2015) argue that auditors are often perceived as faultfinders rather than partners in institutional improvement. This cultural misalignment leads to resistance, poor cooperation during audits and, at times, active hostility from staff. According to Chambers, as cited in Vitalis et al. (2024), many myths surround internal audits, including beliefs that auditors are overly critical, slow or disconnected from operational realities. These perceptions, often fuelled by negative audit findings, create an adversarial atmosphere that limits audit access and reduces effectiveness.

Growing Expectation Gap and Public Scrutiny

Finally, internal audit functions in public universities face increasing scrutiny from the public, media and oversight bodies. High-profile corporate and public sector scandals—such as those at Enron, PRASA, VBS Bank and Toshiba, have placed internal auditors under the microscope (Beasley et al., 2018; Coram et al., 2015). Stakeholders now expect internal audits to serve as a bulwark against mismanagement, corruption and service delivery failures. However, as Halimah and Radiah (2016) and Abiodun (2020) note, there exists a persistent expectation-performance gap, where internal auditors are criticised for not achieving outcomes that are often beyond their control, especially in resource-constrained and politically influenced environments.

Internal audit practices in public universities are shaped by complex institutional, political, and professional dynamics. Independence, competence, management support, structural clarity, and sufficient resources are all prerequisites for effective audit performance. However, the reviewed literature demonstrates that these elements are frequently lacking or underdeveloped, especially in developing country contexts. Addressing these challenges requires not only institutional reform but also political will, investment in capacity building and a cultural shift in how the audit function is perceived and supported within higher education institutions

This systematic literature review sought to explore and synthesise evidence on the challenges faced by internal audit functions in public institutions of higher learning. The findings reveal a complex, multifaceted picture in which internal audit functions often struggle to fulfil their governance role due to structural, political and capacity-related constraints. Despite the formal presence of internal audit units in most public universities, their actual functionality and influence remain limited. These challenges are not just operational but are embedded in the broader governance ecosystem within which universities operate.

Key among the challenges identified are limited audit capacity, characterised by skill shortages and lack of ongoing professional development; compromised independence and objectivity due to interference and coercion; poor organisational support from university leadership and governing boards; and a failure to enforce or implement internal audit recommendations. The review also underscores the negative effects of political influence and intimidation on the effectiveness of internal audit practices, as well as the impact of limited financial and technological resources. These problems are particularly acute in developing countries, where public sector governance remains fragile and often politicised.

The cumulative effect of these constraints is the erosion of internal audit effectiveness, which in turn weakens accountability, transparency and financial stewardship in public universities. When internal audit functions are unable to perform optimally, they cannot adequately serve as a check against mismanagement, poor resource utilisation and policy failure. This review, therefore, confirms that while the internal audit function has potential as a tool for reform and accountability in public higher education, its utility is undermined by a lack of institutional will, enabling policy frameworks and technical capability.

Recommendations

Recommendations to Practice

Strengthening the internal audit function in public universities requires a professionalisation of the audit workforce. Internal auditors must be afforded opportunities for continuous training

and should be encouraged or supported to pursue professional certifications such as CIA, CISA and CFE. Such credentials not only raise the technical capacity of the internal audit team but also enhance its credibility and acceptance across the institution. In addition, universities must establish functional and operational independence for their internal audit units. This includes granting direct reporting lines to university councils or audit committees, rather than limiting audit reporting to the finance departments or line managers. Audit recommendations must be given institutional weight, and their implementation should be monitored as part of university performance frameworks.

Furthermore, greater attention should be paid to resourcing internal audit departments. This includes providing sufficient office space, staffing and logistical support to allow auditors to carry out comprehensive and timely engagements. Modern auditing requires access to digital tools and systems for risk-based auditing, data analytics, and real-time reporting, which many public universities currently lack. Internal audit units should be equipped not only with human talent but also with the technological infrastructure to match their growing responsibilities in increasingly complex institutional environments.

Recommendations to Policy

Policy reforms at national and institutional levels are needed to standardise and strengthen internal audit functions in higher education. Ministries of Higher Education, in collaboration with national audit offices or internal audit directorates, should establish guidelines on the minimum standards required for internal audit units. These standards should cover staffing levels, qualifications, reporting arrangements and quality assurance procedures. A uniform regulatory framework can help reduce the variability in audit performance across universities and promote greater accountability.

Additionally, public policy must address the issues of audit independence and intimidation. Internal auditors in public universities must be protected under national whistle-blower and anti-corruption laws. Policies that ensure the functional independence of internal auditors, including protection from retaliatory transfers or dismissals, are critical to empowering audit staff to carry out their duties without fear or favour. National audit bodies or inspectorates should provide external oversight and periodic reviews of internal audit effectiveness in public universities.

Lastly, given the budgetary constraints faced by many public institutions, policies should mandate ring-fenced funding for internal audit activities. Without dedicated financial support, internal audit units remain vulnerable to underfunding, especially during times of economic austerity or shifting political priorities.

Recommendations to Theory

The theoretical frameworks underpinning internal audit effectiveness in higher education must be expanded to reflect the realities of public sector dynamics. Traditional governance and agency theories, while useful, may not fully account for the informal power structures, political interference, and institutional resistance that characterises many public universities. There is a need to incorporate insights from institutional theory and public management literature, particularly regarding how norms, values and power asymmetries shape internal audit outcomes.

Moreover, this review supports the development of contextual audit effectiveness models that go beyond technical capabilities to include socio-political and cultural variables. For instance, the extent to which audit committees operate independently, or the degree of management buy-in, can significantly affect audit impact. Future theoretical developments should also consider the psychological and behavioural dimensions of audit practices, including issues of morale, ethical resilience and organisational culture. Understanding how these factors interact with audit performance can enrich the internal audit body of knowledge and lead to more responsive, context-sensitive models of audit effectiveness.

Limitations

Although this systematic review offers valuable insights, it is not without limitations. The first limitation pertains to language bias, as only studies published in English were reviewed. This may have led to the exclusion of relevant research published in other languages, particularly in non-Anglophone regions of Africa, Asia or Latin America. A second limitation lies in the geographical focus of the reviewed literature. While the review included studies from several developing countries, there is a notable emphasis on sub-Saharan Africa. This may limit the generalisability of the findings to other regions with different institutional arrangements.

Thirdly, this review excluded theoretical or purely conceptual papers in favour of empirical studies, which may have resulted in an underrepresentation of broader normative and theoretical discussions. Furthermore, while thematic synthesis allowed for a structured narrative, the diversity in methodological approaches and contexts prevented the use of meta-analytic techniques that might have provided more quantifiable comparisons. Another potential limitation is publication bias. Studies showing successful internal audit implementations may be more likely to be published than those documenting failures or insignificant effects. Lastly, the review did not incorporate first-hand data or interviews with current internal auditors, which would have enriched the analysis with current perspectives and real-time institutional experiences.

Areas for Further Research

Building on the findings of this review, there are several promising directions for future research. One key area involves conducting comparative cross-country studies to explore how internal audit functions differ across regions and regulatory environments. Such research could identify best practices and reveal structural or cultural factors that enable or constrain audit effectiveness. Another avenue is the development of longitudinal studies that track the evolution of internal audit practices within specific public universities over time. This would allow researchers to assess the impact of interventions, policy changes, or institutional reforms on audit performance. More research is also needed on the psychological and organisational effects of intimidation and coercion on internal auditors. Qualitative studies focusing on auditor experiences and perceptions could provide deeper insight into how audit independence is compromised and the coping strategies then employed.

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An exploration of Memorable food experiences in Zimbabwe: towards food tourism development.

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Abstract

Food experiences are being promoted by several countries leading to developing and enhancing food tourism. Zimbabwe has unique culinary potential yet there is a gap in literature on food tourism in most African countries Zimbabwe included. This paper explores memorable food experiences towards food tourism development. This study was carried out in Harare as the capital city of Zimbabwe and in Victoria Falls the major tourism destination. 10 service providers responsible for designing, facilitating and marketing food experiences were purposively sampled. Twenty (20) international tourists were conveniently sampled. Interviews were conducted with research participants. Data collected was analyzed using thematic analysis. The major themes that emerged from the studies are that food experiences can be categorized as authentic traditional food experiences, consumption of unique exotic foods, Culinary Festivals and Events, Farm and Agricultural experiences food and beverage tours and Dining in unexpected settings. The study will benefit various stakeholders who have a role in facilitating and staging food experiences in Zimbabwe. The study recommends that food experiences that are found in various tourism destinations be documented so that they can be marketed and promoted. Food trails and food tours should also be packaged. This will help attract food enthusiasts to Zimbabwe thereby leading to food tourism development. Documenting and marketing food experiences will give the country competitive advantage and give tourists more reasons to visit other than flora and fauna. The findings can inform Zimbabwe's tourism strategy on elements of destination Zimbabwe that can be facilitated, staged and co-created into memorable food experiences.

Keywords: Food tourism, memorable food experiences.

Introduction

Food experiences may be in the form of experiences which are production related or which are consumption related (Mohamed *et al.*, 2020). Waheed and Kumar (2024) observed that there is need for food experience products to be developed and presented to various tourist markets. Food is a fundamental part of the tourism sector that attracts tourists and also determines their satisfaction with the destination (Hiamey *et al.*, 2020; Knollenberg, 2021). There are countries which are well known for their cuisines such as France, Italy and Thailand, however, Zimbabwe is less known for its food yet it has foods, serving styles, dining customs, preparation and cooking methods from various ethnic groups Consequently, many destinations market their food and associated activities and experiences to attract tourists (Jeaheng & Han, 2020). Given this

exploration and the resultant promotion of food experiences, tourists can also travel to Zimbabwe solely for the food and related experiences and this can lead to the development of food tourism. Relevant literature will be reviewed below.

Literature review

Given that establishing food experiences is an important step towards food tourism development, there is need to explore food experiences in Zimbabwe. Yang *et al.*, (2024) found that tourism destinations are now concerned with providing tourists with memorable food experiences, as such there is need to unearth such food related experiences. According to Wolf (2008), visitors mostly prefer dining out when they travel and they often spend much on food and beverages and other food related experiences. Shenoy (2005) concurs and further denotes that eating is an important part of the visitor experience and the visitor must not only consume what they are hearing and seeing but what they can taste at a particular destination. Long (2004), mentions that food may be interpreted as a lens to understanding the destinations' local culture.

There has been considerable growth in food tourism and it has become one of the most vibrant and innovative tourism sub-sectors (Mnguni & Giampiccoli, 2022). García-Pérez and Castillo-Ortiz (2024) found that there are limited studies on food experiences in Africa. Many African countries except for South Africa are lagging behind in terms of Food tourism development and Zimbabwe is not an exception Food tourism has financial benefits to a country. More than a third of expenditure in the tourism sector is spent on food since it is an essential part of the travel experience (Jeaheng & Han, 2020). Food thus serves to attract tourists and enhance their experiences at a destination while at the same time benefiting local economies and promoting sustainable development through the use of local resources (Mnguni & Giampiccoli, 2022).

Objective of the study

To determine memorable food experiences in Zimbabwe: towards food tourism development.

Methods and Materials

This study is qualitative in nature. Findings will help stakeholders to know the various food related experiences that can be experienced and facilitated in Zimbabwe. Twenty (20) international tourists were conveniently sampled from Victoria Falls and Harare respectively. The study was conducted in Harare because it is the capital city of Zimbabwe and tourists usually visit this destination. Victoria Falls was selected for the study because it is a major tourism hub. Nine (9) food experience service providers and one (1) key informant were purposively sampled. Interviews were conducted with these stakeholders to gather data on the food experiences they know or have participated in. Using interviews allowed the researchers to explore memorable food experiences that can be inculcated in the development of food tourism in Zimbabwe. The data was analysed using the thematic analysis approach. Data was transcribed and the researchers identified emerging themes from the interviews. The findings are presented in the next section.

Results and discussion

It is worth noting that, while the survey was conducted in Victoria Falls and Harare, the data for this study could extend beyond these two locations because data provided by service providers focused primarily on everything that Zimbabwe has to offer in terms of food-related unforgettable experiences. Furthermore, the involvement of a destination marketing organisation (DMO) representative broadened the scope of the study, providing a comprehensive understanding of Zimbabwe as a destination. This study relies solely on tourist insights about their experiences with the sites they had visited at the time of data collection. The research participants were asked to detail food related experiences found in various food settings they visited in Zimbabwe. The major themes that emerged were; authentic traditional food experiences, consumption of unique exotic foods, Culinary Festivals and Events, Farm and Agricultural experiences food and beverage tours and Dining in unexpected settings.

Authentic traditional food experiences

Food that offers tourists a chance to enjoy authentic dishes and experiences have been identified as one of the categories of food related experiences. Many participants (P1, P26) highlighted the richness of Zimbabwe's traditional ethnic food. The research participants had this to say;

In sharing her experiences, P1 asserted that,

... I visited a local village and participated in harvesting maize and then roasting it on an open fire and just learning about their culture was good. The other time I was in Zim I went to Boma and experienced lots of dishes that were tasty, ate the mopani worm for the first time and was given a certificate, I was dressed in some local cloth for the dinner, oh and we had the drumming session, they taught how to play the drum and we played the drum and danced as they sang in their native language. I really enjoyed that. There is this place I also went to and we ate local thick porridge with buffalo and cow feet, the taste was amazing.

Another tourist, P26 pointed out that,

I had the opportunity to sit down with a lot of local ladies and try some local delicacies like peanuts stew and the baobab and I found that eating, especially in Zimbabwe, was a lot more communal than what I was used to.

The study results show the richness of Zimbabwe's traditional food culture. This is in synchrony with Mintz and Du Bois (2002), who states that food is a fundamental part cultural heritage and offers an insight into the cultural identity and acts as a conduit for conveying traditions. There are establishments that are known for offering authentic food experiences, tourists who desire to taste Zimbabwe's indigenous dishes can visit such establishments. There is a constellation of activities which one can be exposed to such as cooking *sadza* on an open fire, grinding peanuts to make peanut butter among a host of other activities. These activities are immersive food experiences that one can partake in Zimbabwe. Food can be consumed in a communal dining and by so doing tourist can be immersed into the culture of the people as they will be sharing the meal.

Consumption of unique and exotic foods

Another characteristic that emerged was the eating of unusual and exotic foods. Several interviewees (21, 1, 10) described eating distinctive Zimbabwean foods, particularly Mopani worms, game meats (crocodile, kudu), and local delicacies such as baobab and peanut stew, as a gastronomic experience.

P21 said,

...apart from just eating the food Mopani worms okay you don't want to be going and picking them I guess but it is something that's unique okay Sub-Saharan Africa will offer you crocodile they will offer you various game meat but I'm not sure if you can get Mopani worms anywhere else...

P 25 had this to say,

The food related food experiences found in Zimbabwe is KwaMereki (where people buy meat and braai and get to eat out door) There will also be music of all different kinds and entertainment.

Findings concur with Rozin (2006), who found that novel food experiences evoke both curiosity and a sense of adventure, which contributes to lasting food memories. Tourists enjoy trying new dishes especially the neophilics however, some tourists have neophobia and do not like tasting unique dishes. This implies that there is need to offer a wide range of foods from different countries so that neophobics who do not like to taste new foods can eat food they are accustomed to from their country of origin.

Culinary Festivals and Events

Interviews with service providers revealed that Zimbabwe has a variety of wine and food festivals that can provide travelers with exceptional food-related tourism experiences. These celebrations range from tiny neighborhood gatherings like 'nhimbe' and 'doro remukwerera' (rain-making rites) to larger ones with global appeal. Community-level festivals are typically only accessible to tourists by chance because they are not on the national schedule of events and are more seasonal. Above all, they are claimed to be sacred and part of Zimbabwe's well guarded cultural and history, which not everyone has access to or participates in.

However, the ability to participate in even a small portion of the food-related activities that define these events would present travelers with a cultural immersion that they would never forget. Bigger public events and celebrations provide travelers with a variety of experiences, including food and beverage tasting, food exhibitions, cookery demonstrations, and performing arts, which make them majestic. These sentiments are expressed in the following voices:

Participant 15 an overlander and tour guide made interesting remarks,

"As a guide who has travelled places here in SADC, I can say Zimbabwe offers memorable food experiences through the variety of food served on cultural festivals such as rainmaking ceremonies. I know they call them 'doro remukwerera' elsewhere but I am Tonga myself so let me talk of the 'malende' or 'mpande' and the 'monze' as they are referred to in other Tonga groups. When I am travelling with my groups on these trips that cut across Africa, and I am in Zimbabwe during a time I know there are such ceremonies, I always take my guests to the ceremonies. What is very memorable about these events, even though tourists do not get rites to rituals performed in the inner rooms by the rain-

maker, is the increase in the tempo of song and dance once the rain-maker communicates the message about the rains and the harvest for the upcoming season. The celebratory atmosphere in which the food is served afterwards is just hilarious. Even though tourists sometimes do not eat the food, they just love watching these events unfold. Truly these are very rare instances but very memorable. I think I have had only three encounters over my lifetime as a guide. It is more than fifteen years now”

Participant 23 a Head Chef from Harare said,

“Though not well marketed, the Harare International Food and Drink Festival brings together local and international food vendors, chefs, and beverage companies annually. Visitors will be allowed to sample a wide range of contemporary and traditional dishes from the diverse regions of Zimbabwe. Food lovers also indulge in a variety of beverages, inclusive of local craft beers and wines.

A key informant from ZTA opined that,

Festivals offer a lot of upscale food experiences here in Zimbabwe. We have the likes of the Gango festival that celebrates the cultural significance of a traditional snack made from cornmeal, peanuts, and spices, originating from the southern region of Zimbabwe. We have the Chimanimani Food festival which is a celebration of local cuisine and local produce in the scenic Chimanimani region. We also have the Harare International Festival of the Arts (HIFA). Its last edition was in 2019. It featured the Curry Night- a popular event which celebrated Zimbabwean and Indian cuisine. Local chefs and restaurants would offer a diverse range of curry dishes, displaying the fusion of flavors and cooking techniques between the two culinary traditions. Visitors enjoyed the night of delicious curries, live cultural performances, and a whole lot of lively entertainment. Then the biggest of them all so far is the Victoria Falls Carnival. This one combine adventure, music and food for a memorable experience.

It is vital to remember that food festivals provide two-sided experiences, appealing to both food customers and culinary professionals. They provide tourists with insights into the primary highlights of a country's rich culinary legacy, while travelling culinary artisans have the opportunity to share culinary skills. These findings support Yang *et al.* (2020), who believe that food festivals are at the center of culinary tourism. Food plays an important moderating function in any type of gathering or event, regardless of size. An appreciation for local cuisine and food-related customs is a ubiquitous component of the travel experience, which has become a must-do activity for the majority of international tourists. In the Zimbabwean context, it is important to note that these festivals exist, and service providers recognize their ability to create memorable culinary experiences. However, they appear to consistently confront a poor growth trajectory, limiting tourists' capacities to encounter one at random when they arrive, whether as business, leisure, or adventure travelers.

Farm and Agricultural experiences

Local farm visits are a prominent component of Victoria Falls' tour program. During data collection, a review of tour operators' posted tour packages revealed that practically all tour operators visited at least one village, whether on a half-day or full-day tour. Interviewees had this to say about farm-related experiences.

Participant 13 an Executive chef said,

What I know is that besides the fine dining experiences we offer here, or in hotels, tourists are normally taken to local farming areas and villages such as Kompisi, Mukuni and Monde. I have been to Mukuni village myself. You know, the village offers tourists the chance to explore traditional agricultural lifestyles in a rural setting. Depending on the season, tourists participate in farming activities such as planting, weeding, and harvesting, while they learn about traditional farming practices from the local farmers. Tourists also get a chance to witness the processes of making traditional food products and have a taste of local cuisine. It might not seem enjoyable to us because we are used to it, but I tell you, international tourists love it. Some never got a chance to experience farm life, worse still very fresh food, like plucking a real pumpkin from the pumpkin plant then preparing it for breakfast.

As Participant 30 the ZTA official noted,

Harare is generally surrounded by farms that tourists can visit on appointment. I cannot pinpoint as many but the one coming to my mind just now is Chisipiti Farm, located just outside Harare and KwaTerry which is quite far from Harare in Ingezi. Tourists visiting the farms can engage in activities such as milking cows, herding cattle, and tending the crops.

Participant 6 Tourist said,

"I did the Lion Encounter Village Tour and Dinner and it was awesome. Basically, what The Lion Encounter organization did yesterday is, they took us as a group to a village specifically for a traditional Zimbabwean dinner. We had a guided tour of the Mpisi village, where we interacted with residents, learned about the community's customs, and witnessed traditional activities such as the feeding of local chickens. The tour culminated into a communal dinner prepared by a local chef. We had thick maize porridge (sadza), stewed spinach, grilled goat meat and these local chickens for dinner. For me, it is a memorable food experience because yesterday I immersed myself in the local culture of eating with my hands and eating meat from animals that I have seen being slaughtered. It was funny. It is my first time."

The most often visited villages were Mukuni, Monde, and Kompisi. According to interview data, in addition to recreational activities, these local farm tours offer distinctive dining experiences. Seeing crop fields, interacting with animals, and learning about sustainable farming practices helps travelers appreciate the products on their plates. This understanding has the potential to transform a simple meal into a valuable and memorable experience for Zimbabwe visitors. Furthermore, the researchers discovered that farm visits boost sensory engagement beyond the plate. That is, agricultural visits involve more than just taste. These study findings support Birch and Memery (2020) discovery that local farm visits effectively bridge the gap between consumers and food producers. This helps tourists comprehend, enjoy, and emotionally connect with the cuisine they eat in a destination.

The findings are consistent with Yeboah and Ashie (2024), who believe that farm-to-table activities such as visiting organic farms, foraging for ingredients, and creating meals using local goods are all instances of farm-to-table activities that fall under the category of food tourism. In terms of farm-to-folk experiences, visitors can learn about local gastronomic traditions through hands-on cooking classes in which they prepare meals from their own freshly harvested produce. These findings are consistent with Guruge (2020), who stated that farm to folk experiences allow

guests to explore a community's diverse food landscape while also developing a deep awareness for the link between farming techniques and the nation's unique gastronomic delights. This is in line with growing trends on slow movement.

Beverage related tours

Stakeholders that facilitate and deliver food experiences identified various beverage related tours that tourists can participate in when they visit Zimbabwe. Some participants interviewed, like P3, had this to say.

There is growing interest in how beer tastes to the extent that nowadays some breweries are opening up for brewing tours, introducing tap rooms, or even setting-up on site museums. In Victoria falls we have our very own The River Brewing Company which offers brewing tours. They have their signature tour named, 'The Zim in a glass' which features a wide range of delicious craft ales and non-alcoholic sodas made from the finest local ingredients and a few from the United States of America and Germany. However, it is not very popular but it's a must experience for beer lovers.

P30s' sentiments show that tea and coffee plantation tours offer a blend of scenic beauty and agricultural education. P3 brought out another element of beverage tours that tourists can participate in when they visit Zimbabwe. Findings are in sync with Papcunová et al (2024) and Doloreux et al., 2024's arguments for brewery tours, where they found that brewing tours are emerging as a vital component of food and gastronomic experiences that create lasting memories and promote the eagerness for repeat visits in tourists. Further, they alluded that by focusing on local brewing traditions and the consumption of locally produced beverages, beer tasting tours can be marketed. Beverage tours seem not to be popular in Zimbabwe unlike in other countries that are renowned for wine tourism. This may be because Zimbabwe has limited brewery facilities and those available are not being capitalised for food tourism and are kept restricted yet they can attract those interested in viewing scenery related to brewery ingredients, their processing, production and consumption.

Dining in unexpected settings

On dining in unexpected settings, an interviewee stated that:

The bush dinner at Jafuta conservancy lodge is really memorable. It was a fusion of cuisines that blended African flavors with international food service standard. It was a buffet like we always had but I enjoyed being under the stars and surrounded by the natural environment while I eat my food (P17)

P10 said, *for me dinner after having a sunset boat cruise on the Zambezi explorer was beautiful. The sound of water, the comfortable settings and the top-notch food and beverage service standards.*

Then P27 a respondent from Harare appraised the value of *Mbare Musika* street food markets and the popular *KwaMereki* as memorable food experiences offered in Zimbabwe.

In the heart of the city, there is Mbare Musika. This bustling market has a variety of street foods ranging from roasted corn on the cob, locally referred to as 'chibage chakagochwa',

different types of grilled meats, fried chicken, samosas, and traditional snacks like fried 'matemba' (small fish) and roasted peanuts. Tourists can savor these delightful treats while experiencing the vibrant atmosphere of the market, interacting with available local vendors, and exploring the lively street food culture of Harare. Tourists can also visit KwaMereki which houses a number of informal vendors offering street food and they can enjoy sadza with braaied meat, offals, cow head or heels with salads. Patrons eat food whilst placing food on the boot of their cars whilst they play their own music and dance and socialize with other people.

P6 said, "I enjoyed sitting around the fire and listening to stories shared by the villagers".

Findings support views of various authors who assert that tourists travel around the globe in order to experience food tourism products, activities like bush dinners, boat cruises with meals, picnic game drive, consuming street food, touring food and wine factories, participating in food festivals, food tours and consuming food (Quan & Wang, 2004; Smith and Xiao, 2008; Richards, 2015; FolgadoFernández *et al.*, 2017; Antón *et al.*, 2019.) On the other hand, the response from P6 emphasizes the social and cultural aspects of food consumption. Communal dining around a fire fosters a sense of community and cultural exchange, which is a key element in many traditional societies (Fischler, 2011). The act of sharing stories while eating reinforces oral traditions and strengthens social bonds (Sutton, 2001).

Conclusion

The goal of this study was to explore memorable food experiences in Zimbabwe: towards Food tourism development. It is clear that whilst Zimbabwe is endowed with rich culinary experiences, more needs to be done for them to be known and for them to be a pull factor to attract tourists. When tourists visit a destination in some instances they can see where the local ingredients are produced (visiting, farms and vineyards), they can witness the preparation and processing of ingredients, and they can appreciate the culture and traditions that supports how indigenous dishes are prepared and served. Food forms the basis for branding and marketing the destinations food experiences. Many destinations can capitalize on using food and related food experiences to stimulate tourists travel to Zimbabwe. Future studies should be quantitative in nature to quantify tourist demand for food experiences so as to ascertain the most popular types of food experiences and those that need improvement and marketing.

Recommendations

The study makes the following recommendations:

Documenting food experiences

It involves creating records of culinary events, restaurant reviews, and food production processes. These records can take the form of photographs, videos, written descriptions, and oral histories. This documentation helps to preserve culinary heritage, promote food-related businesses, and attract tourists interested in authentic food experiences. Furthermore, it can be used to analyze trends, improve service quality, and develop marketing strategies for food tourism destinations.

Creating digital platforms

Digital platforms that can be used in documenting and gathering details on food. This can be automated. These can help increase awareness on the various food experiences. This can be region or as per Zimbabwe's diverse ethnic groups as they are unique. Specific strategies for documenting food experiences.

Developing Food trails

Food trails serve as a strategic tool for destination marketing, with the aim of augmenting visitor numbers and promoting diverse goods and/or producers within a particular region or locale (Everett, 2016). It is possible to describe a trail as a narrow linear path that is primarily intended for people to travel for recreational purposes (MacNamara, & Dewhurst, 2013). Medina and Tresserras (2018) defined the trail as a path that follows in the footsteps of both the food and the people who ate it, as well as an adventure where you can enjoy both. There are various ways to experience a trail, including going on a bus trip, walking excursions of local markets and restaurants, or engaging in self-guided tours (Broadway, 2019). They aim to bring together many places with a food-related theme, offering a cohesive and comprehensive experience for visitors. These trails provide a holistic culinary and gastronomic narrative that explores the interconnectedness of individuals, processes, locales, and products (Timothy & Boyd, 2015).

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Perceived Environmental, Social and Governance (ESG) practices affecting investor behaviour amongst publicly traded companies in Zimbabwe: individual investors' perspectives

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Abstract

ESG considerations are increasingly becoming an important issue in investment decisions, influencing investor behaviour and long-term financial performance. This paper explores how environmental, social, and governance (ESG) practices affect investor intentions and behaviour among publicly traded companies in Zimbabwe. Using Stakeholder Theory, the study focused on individual investors on the Zimbabwe Stock Exchange, employing an explanatory design and quantitative approach. A self-administered questionnaire yielded 309 valid responses. Results reveal that environmental practices (path estimate = 0.296) and social practices (path estimate = 0.304) significantly influence stock purchase intentions, while governance practices (path estimate = 0.095) do not show a significant impact. Additionally, stock purchase intentions strongly predict actual stock purchase behaviour (path estimate = 0.716). The study recommends that Zimbabwean companies should prioritise and communicate their environmental and social practices to attract investors, as these factors notably influence stock purchase intentions. While governance practices are important on their own, they are most effective when integrated into a comprehensive ESG framework that aligns environmental, social, and governance efforts towards sustainable organisational performance. It is recommended that companies use big data to strengthen ESG disclosures and drive investor action.

Keywords: Environment, Social, Governance, Behavioural Intention, Purchase Behaviour.

Introduction

ESG investing, also known as socially responsible investing, has become increasingly important for organisations (Eccles, Lee & Stroehle, 2020). Companies are faced with increased investor expectations to disclose information about their practices affecting investors, the environment, and the community (Ellili 2022). ESG investing involves assessing a company's position regarding factors such as climate action, environmental stewardship, and social impact, whilst endeavouring to achieve desired levels of financial returns (Wang et al. 2023). In recognition of the fact that financial data alone is no longer enough for modern investors, organisations are now shifting towards comprehensive reporting on ESG, sustainability, and other non-financial aspects required by stakeholders (Abdullahi, Ardo, Hassan, and Ibrahim, 2021).

Globally, there is an advanced regulatory landscape for ESG practices, which aims to ensure transparency and comparability in ESG reporting (Bose, 2020). Regulations, including the European Union (EU)'s Non-Financial Reporting Directive (NFRD) and Sustainable Finance Disclosure Regulation (SFDR), mandate detailed disclosures on ESG factors to enhance accountability and provide investors with clear insights into companies' sustainability practices (Namzhilon, 2023; Frade & Froumouth, 2022). Despite the progress, the lack of uniform global standards still poses challenges for investors trying to compare ESG practices across diverse jurisdictions (Partiti, 2024). The ever-changing regulatory landscape highlights the importance of

comprehensive ESG reporting in influencing investor behaviour by aligning investment decisions with sustainability goals (Xiao et al., 2023).

Zimbabwe provides a particularly interesting case study for ESG practices and investor behaviour. The country's persistent economic and political challenges have historically overshadowed the regard for environmental and social governance in light of the need for sustainable development (Chigudu, 2020). However, regulatory reforms and a growing awareness amongst investors suggest a shift towards recognising the value of ESG integration (Madzoke et al., 2024). The regulatory frameworks for Environmental, Social, and Governance (ESG) practices remain weak compared to global standards, impacting investor behaviour significantly (Morris, 2023). Regulations, such as the Environmental Management Act [Chapter 20:27] of 2022, focus primarily on environmental protection through mandatory Environmental Impact Assessments (EIAs) (Ndlovu, 2021). But, the lack of comprehensive and enforced ESG regulations means that corporate governance and social responsibility aspects are not uniformly mandated, resulting in inconsistent ESG practices or violations across companies (Bosun-Fakunle, Mary, & Gbenga, 2023). This regulatory gap can influence investor behaviour by creating uncertainty and reducing the comparability of ESG performance among Zimbabwean firms (Matimura, Kiat & Rahadi, 2021). Investors may be hesitant to engage with companies that lack robust and transparent ESG practices due to concerns about potential risks and the effectiveness of their environmental and social strategies (Barko, Cremers & Renneboog, 2022). The ad-hoc nature of ESG disclosures and the absence of standardised reporting further worsen these issues, potentially leading to lower investor confidence and reduced investment in Zimbabwean firms (Maama & Marimuthu, 2022).

Thus, this study examined the following key variables within the Zimbabwean context: (1) stock purchase behaviour, reflecting actual investment decisions shaped by ESG data availability, financial intermediaries, and market conditions (Jonsdottir et al., 2022); (2) behavioural intention to purchase, driven by financial performance, market trends, and ESG factors, though often hindered by greenwashing and unreliable disclosures (Wong & Zhang, 2022); (3) environmental practices, including carbon reduction and renewable energy efforts, which attract investors but face credibility challenges (Karwowski & Raulinajtys-Grzybek, 2021); (4) social practices, such as labour and community engagement, which enhance reputation but are difficult to measure (Green & Roth, 2025); and (5) governance practices, such as board transparency, which build investor trust but risk being superficially implemented (Kovvali, 2023). These variables highlight the gap between ESG intentions and actual investment behaviour due to inconsistent reporting, financial trade-offs, and market constraints.

The subsequent sections focus on the literature review, research methodology, findings, and implications pursuant to contributing to knowledge development and the provision of implementable strategies for stakeholders and policymakers in the industry.

Literature review

Theoretical perspectives

This study is informed by the Stakeholder Theory (Freeman, 2010). According to the Stakeholder Theory, firms should prioritise the interests of all stakeholders (not just shareholders) by addressing environmental, social, and governance (ESG) concerns to gain legitimacy and enhance long-term performance (Huang, 2022). This theory is highly relevant in analysing how ESG practices affect stock purchase intentions and behaviour. Similarly, Zaharia and Zaharia (2021) perceive the triple bottom line (TBL) concept to be an extension of Stakeholder Theory that evaluates companies based on their performance in three areas: people, planet, and profit, as highlighted in Figure 1. This broad

perspective aligns with how investors might form intentions to support firms that demonstrate strong triple bottom line anchored ESG performance, as they anticipate these firms are more likely to achieve sustainable returns and positively impact society and the environment (Crace & Gehman, 2023).



Figure 1: Triple Bottom Line

Source: Crace and Gehman (2023)

However, while Stakeholder Theory suggests ESG practices should meet stakeholder expectations, practical implementation often encounters challenges. Firms may engage in superficial ESG initiatives aimed at improving their image without making substantial changes, potentially leading to disillusionment among investors who perceive these practices as insincere (Baldi & Pandimiglio, 2022). Therefore, while Stakeholder Theory highlights the importance of ESG in shaping investor intentions, the effectiveness of these practices in translating into actual investment behaviour can be undermined by concerns about authenticity and depth (Lokuwaduge & De Silva, 2022).

Conceptual framework and Development of hypotheses

Environmental practices and behavioural intention to purchase stock

Empirical studies have examined the link between environmental practices and behavioural intention to purchase stock, each offering unique perspectives. Sangeetha et al. (2024) investigated how environmental and economic concerns influence young investors' intentions to invest in renewable energy stocks, revealing that while environmental concern had a significant effect through the mediating role of attitude, economic concern was not statistically significant. Eaw et al. (2024) focused on adult investors in East Malaysia, analysing how social influence, perceived customer effectiveness, and financial literacy determine green stock investment intention. The study established that perceived customer effectiveness had a direct effect, while financial literacy operated through attitude. Gatti et al. (2021) addressed the adverse impact of greenwashing on investment behaviour, showing that deceptive environmental claims significantly reduce intention to invest, with falsification and manipulative practices proving most damaging. Lastly, Wang et al. (2024) applied the Fogg Behaviour Model to explore ESG investment intentions in China,

identifying future orientation, investment bias, and perceived ESG performance as key predictors, with attitude partially mediating these effects and government support serving as a moderator. Together, these studies underscore the complex interplay between environmental values, perceptions, and behavioural intention in sustainable investing contexts.

In light of this empirical position, this paper hypothesised that:

H₁: Environmental practices have a positive effect on the behavioural intention to purchase stock.

Social practices and behavioural intention to purchase stock

Empirical research has increasingly focused on how social responsibility influences investors' behavioural intentions. Hwang et al. (2022) distinguished between socially responsible and non-socially responsible institutional investors, finding that firms with increased SRI ownership tend to improve their future CSR scores. However, this increase in SRI ownership was paradoxically linked to negative short-term stock returns, particularly when activist investors targeted firms with initially low CSR scores, suggesting that anticipated CSR efforts may be perceived as costly by the market. Vyas et al. (2022) examined Indian investors' socially responsible investing behaviour and found that attributes such as collectivism, environmental attitudes, and religiosity, positively influenced non-economic investment goals, while materialism and risk tolerance had negative associations. Feng et al. (2022) assessed the long- and short-run relationships between ESG, CSR, and stock returns in Chinese-listed firms and revealed that while CSR positively influenced stock returns in the long term, ESG scores often had a detrimental effect. Similarly, Hafidzi and Qomariah (2022) studied Indonesian manufacturing firms during the COVID-19 pandemic and found that CSR positively affected stock returns, both directly and indirectly, through return on assets (ROA), though CSR had a negative impact on ROA itself. However, Viererbl and Koch (2022) highlighted that while supporting societal goals and sustainable development can enhance a company's image as socially responsible, excessive communication about CSR efforts can backfire.

Thus, this paper also hypothesised that:

H₂: Social practices have a positive effect on the behavioural intention to purchase stock.

Governance practices and behavioural intention to purchase stock

Several studies have explored how corporate governance practices shape investor behaviour and stock market dynamics, especially during times of crisis. Hsu and Liao (2022) examined U.S. firms during the COVID-19 pandemic and found that while good corporate governance, specifically effective board and ownership structures, helped mitigate stock price volatility and trading volume, it did not significantly enhance stock returns. They also noted the stabilising role of government interventions. Khawaja and Alharbi (2021) studied investor behaviour in the Saudi Stock Market and reported that corporate attributes such as firm reputation, financial reporting, and industry status significantly influenced investor decisions, whereas demographic factors like gender and age were not significant. Meanwhile, Alao et al. (2024) critically investigated how corporate governance failures, evident in scandals such as Enron and Wirecard, undermined investor trust and destabilised global markets. Their analysis showed that weak oversight, CEO duality, and manipulated earnings led to significant macroeconomic consequences, advocating for stronger regulatory frameworks. Pourmansouri et al. (2022) focused on Iran and revealed that high ownership concentration among major shareholders weakened corporate governance systems and board quality, both before and after the COVID-19 pandemic. They concluded that power asymmetries among shareholders negatively impacted governance efficiency and, by extension, investor confidence. Collectively,

these studies underscore the complex interplay between governance quality and investor behaviour across varying contexts and crises.

In light of this empirical support, this paper also hypothesised that:

H3: Governance practices have a positive effect on the behavioural intention to purchase stock.

Behavioural intention to purchase stock and purchase behaviour

Both the Theory of Planned Behaviour and the Unified Theory of Acceptance and Use of Technology (UTAUT) propose that intention is a precursor to behaviour (Ajzen, 1991; Dangaiso, Jaravaza & Mukucha, 2024). Numerous studies have demonstrated a strong link between intention and subsequent actions in stock market contexts (Kumari, Senani, & Ajward, 2023). This suggests that when an investor decides to buy stock, they are likely to follow through with the purchase.

In light of these claims, the study also predicted that:

H4: Behavioural intention to purchase stock has a positive effect on purchase behavior.

Figure 2 below highlights the hypothesised research model.

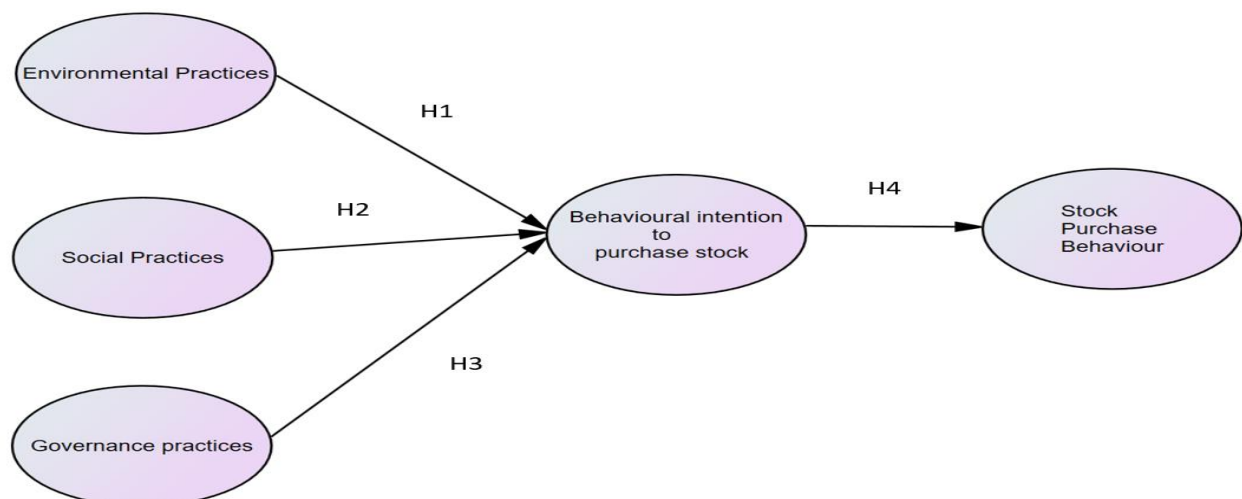


Figure 2: Hypothesized research model

Source: Author's construction (2024).

Materials and Methods

Design, population, and sampling

The study sought to examine causal relationships in a hypothesized model. Therefore, guided by the positivist research paradigm, an explanatory research design was employed (Saunders et al., 2023). The study employed the deductive quantitative research approach (Harque, 2022). The study targeted individual investors on the Zimbabwe Stock Market. A simple random sampling procedure was employed to select the participants (Easterby-Smith et al., 2021). Sample size determination was influenced by resource considerations, statistical factors, and sizes used in similar studies. To obtain responses, 400 questionnaires were distributed and 309 were returned, giving a reliable response rate of 77.3% (Saunders et al., 2023).

Measures

The measurement scales used in the study were adopted from the literature (Saunders et al., 2023). A 5-point Likert scale from strongly disagree to strongly agree was used to measure research constructs. These were conceptualised as environmental practices (Karwowski & Raulinajtys-Grzybek, 2021), social practices (Oh et al., 2024), governance practices (Kovvali, 2023), stock purchase intentions (Beheshti et al., 2025), and stock purchase behaviour (Kumari, Senani, & Ajward, 2023). A pretest was conducted using an investor sample of 30 participants (Saunders et al., 2023).

Data collection procedures and ethical compliance

Before data collection commenced, the research's purpose was explained, and participation was voluntary. In line with ethical standards for consumer research, all participants gave prior verbal informed consent. Saunders et al. (2023) note that the form of consent required depends on the nature of the research, the type of participants, and the research context. Verbal consent is acceptable in studies involving opinion or perception surveys using self-reported data. Furthermore, the data collection instrument included a section confirming participants' consent to take part in the study, which they all acknowledged by agreeing to answer the questionnaire. The questionnaires were delivered and collected after two weeks. Data was collected in the months of June and July 2024.

Data analysis methods

The study employed Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM) in AMOS to estimate parameters in the hypothesized model (Kline, 2023). The model fit indices utilised in this study were absolute fit indices and incremental fit indices. Convergent validity was assessed using Average Variance Extracted ($AVE > 0.5$) (Amora, 2021). Discriminant validity was assessed using the Sarstedt, Ringle, and Hair (2021) criterion (square root of $AVE >$ any correlation between the construct and any other construct in the model), while internal consistency was tested using composite reliability (> 0.7) (Haji-Othman & Yusuff, 2022).

Results

Sample Characterisation

The sample characteristics in Table 1 below show a predominance of male respondents, with 61.2% of the sample being male and 38.8% female. The age distribution indicates that the largest group is under 30 years of age (34%), followed by those aged 41-50 (30.1%) and 31-40 (28.2%). A small portion of respondents are aged 51-60 (7.1%), and only 0.6% are above 60 years of age. In terms of education, the majority hold a Bachelor's Degree (29.1%), followed by diploma holders (24.6%), while 14.9% have a Master's Degree, and 12% have secondary education or below. Finally, experience in stock market investing varies, with 36.9% having more than 10 years of experience, 33.7% having 2-5 years, 20.1% with 6-10 years, and 9.4% with less than a year.

Table 1: Sample Characterisation

Item	Frequency	Percentage	Valid Percent	Cumulative Percentage
Gender				
Female	120	38.8	38.8	38.8
Male	189	61.2	61.2	100.0
Total	309	100.0	100.0	
Respondents' Age				
< 30 years	105	34.0	34.0	34.0
31- 40 years	87	28.2	28.2	62.1
41-50 years	93	30.1	30.1	92.2
51- 60 years	22	7.1	7.1	99.4
>60 years	2	0.6	0.6	100.0
Total	309	100.0	100.0	
Respondents' Highest Education Level				
Secondary education and below	37	12.0	12.0	12.0
Certificate	60	19.4	19.4	31.4
Diploma	76	24.6	24.6	56.0
Bachelor's Degree	90	29.1	29.1	85.1
Master's Degree	46	14.9	14.9	100.0
Total	309	100.0	100.0	
Number of years of experience in stock market investing				
Less than a year	29	9.4	9.4	9.4
2 – 5 years	104	33.7	33.7	43.0
6 -10 years	62	20.1	20.1	63.1
10 years and above	114	36.9	36.9	100.0
Total	309	100	100.0	

Source: Primary data (2025).

Confirmatory Factor Analysis (CFA)

Following the approach recommended by Anderson and Gerbing (1988), a two-step process was employed to estimate the parameters. Confirmatory Factor Analysis (CFA) was performed first, followed by Structural Equation Modeling (SEM). The measurement model was assessed using CFA (Kline, 2023), beginning with an evaluation of the unidimensionality of factor loadings. Unidimensionality assesses how well the observed variables capture the variance in their underlying constructs, as measured by factor loadings (Hair et al., 2021). Factor loadings represent the correlation between observed variables and the corresponding latent factors (Kline, 2023). All

observed variables showed loadings above the recommended threshold of 0.5 (Hair et al., 2021), except for GOV5 (0.37), SPB3 (0.40), SPB4 (0.47), and SPB5 (0.46). Variables with loadings of 0.5 or higher indicate that they account for at least 50% of the variance in their parent constructs (Hair et al., 2021). As a result, GOV5, SPB3, SPB4, and SPB5 were excluded from further analysis due to poor fit in the CFA model. The measurement model is shown in Figure 3 below.

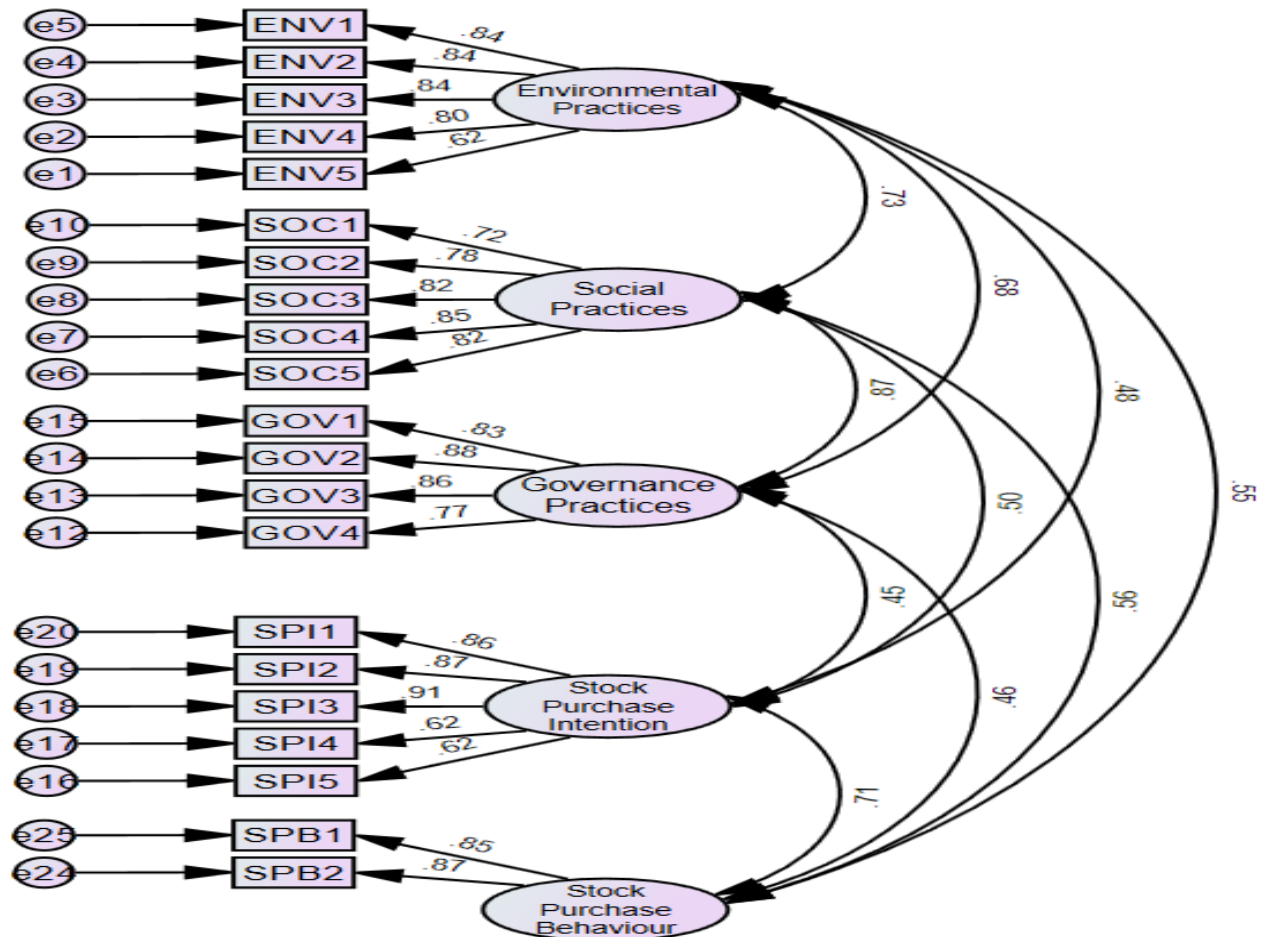


Figure 3. Confirmatory Factor Analysis (CFA).

Source: Primary data (2025).

Additionally, the fit between the hypothesized measurement model and the sample-implied model was evaluated. The results demonstrated that the model achieved a strong alignment with both absolute and relative fit indices. In absolute fit indices, the normed chi square was 4.817, whilst the goodness of Fit (GFI) = 0.902, Root Mean Square error of approximation (RMSEA) = 0.055, and Root Mean Residual (RMR) = 0.051. In relative fit, the Comparative Fit index (CFI) was 0.940, whilst the Incremental Fit index (IFI) was 0.940, Tucker-Lewis Index (TLI) = 0.930, and the Normed Fit Index (NFI) = 0.916. According to Hair et al. (2021), the measurement model had a very good fit.

Third, the validation of the measurement scales was conducted based on convergent validity, discriminant validity, Cronbach's alpha, and composite reliability (Kline, 2023). Convergent validity assesses the degree to which different indicators of the same construct share common variance (Hair et al., 2021). In this study, average variance extracted (AVE) was used, with a threshold of 0.5 or higher required to confirm convergent validity (Hair et al., 2021). As displayed in Table 2, AVE values ranged from 0.630 to 0.787, indicating the presence of convergent validity.

Discriminant validity was evaluated by comparing the Maximum Shared Variance (MSV) with the AVE. The MSV is calculated as the square of the highest correlation between a construct and any other in the model. According to Hair et al. (2021), for discriminant validity to be confirmed, MSV must be less than AVE. This condition was met, as shown in Table 2.

Reliability or internal consistency was assessed using Cronbach's alpha (CA) and composite reliability (CR). The lowest Cronbach's alpha value was 0.710 for Stock Purchase Behaviour, while the highest was 0.984 for Governance Practices. Similarly, composite reliability ranged from 0.854 for Stock Purchase Behaviour to 0.949 for Governance Practices. Based on the guidance of Hair et al. (2021), both measures exceeded the minimum threshold of 0.7, confirming reliability. The psychometric properties of the measurement model are presented in Table 2.

Table 2: Psychometric properties of the measurement model

Construct/Observed Variable	Standardised Factor Loading	Squared Multiple Correlations	Average Variance Extracted	Maximum Shared Variance	Composite Reliability	Cronbach's Alpha
Environmental Practices			0.630	0.534	0.893	0.786
ENV1	0.844***	0.712				
ENV2	0.839***	0.703				
ENV3	0.838***	0.702				
ENV4	0.800***	0.640				
ENV5	0.624***	0.389				
Social Practices			0.638	0.624	0.898	0.798
SOC1	0.718***	0.516				
SOC2	0.777***	0.604				
SOC3	0.820***	0.672				
SOC4	0.855***	0.731				
SOC5	0.817***	0.668				
Governance Practices			0.787	0.773	0.949	0.984
GOV1	0.827***	0.684				
GOV2	0.877***	0.770				
GOV3	0.862***	0.742				
GOV4	0.767***	0.589				
Stock Purchase Intentions						
SPI1	0.862***	0.743	0.702	0.534	0.922	0.878
SPI2	0.870***	0.757				

SPI3	0.911***	0.830				
SPI4	0.618***	0.382				
SPI5	0.617***	0.380				
Stock Purchase Behaviour			0.745	0.510	0.854	0.710
SPB1	0.854***	0.729				
SPB2	0.872***	0.761				

Notes: Standardised loadings marked *** denote $p < 0.001$.

Source: Primary data (2025).

Structural Equation Modelling (SEM)

In order to examine structural relationships between the constructs, SEM (Figure 4) was used to estimate parameters (Kilne, 2023). However, prior to SEM, the requirement of normality was checked. The values did not surpass thresholds, -2 to +2 for skewness and -7 to +7 for kurtosis (Hair et al., 2021); thus the requirement of univariate normality was satisfied.

The structural model was evaluated on three important criteria. Firstly, the model fit was examined. The SEM model produced a good fitting model evidenced by a normed Chi Square of 6.931, RMSEA= 0.08, RMR=0.065, GFI=0.930, IFI=0.956, CFI=0.995 and TLI=0.952. According to Kline (2023), there was evidence of a good fitting SEM model.

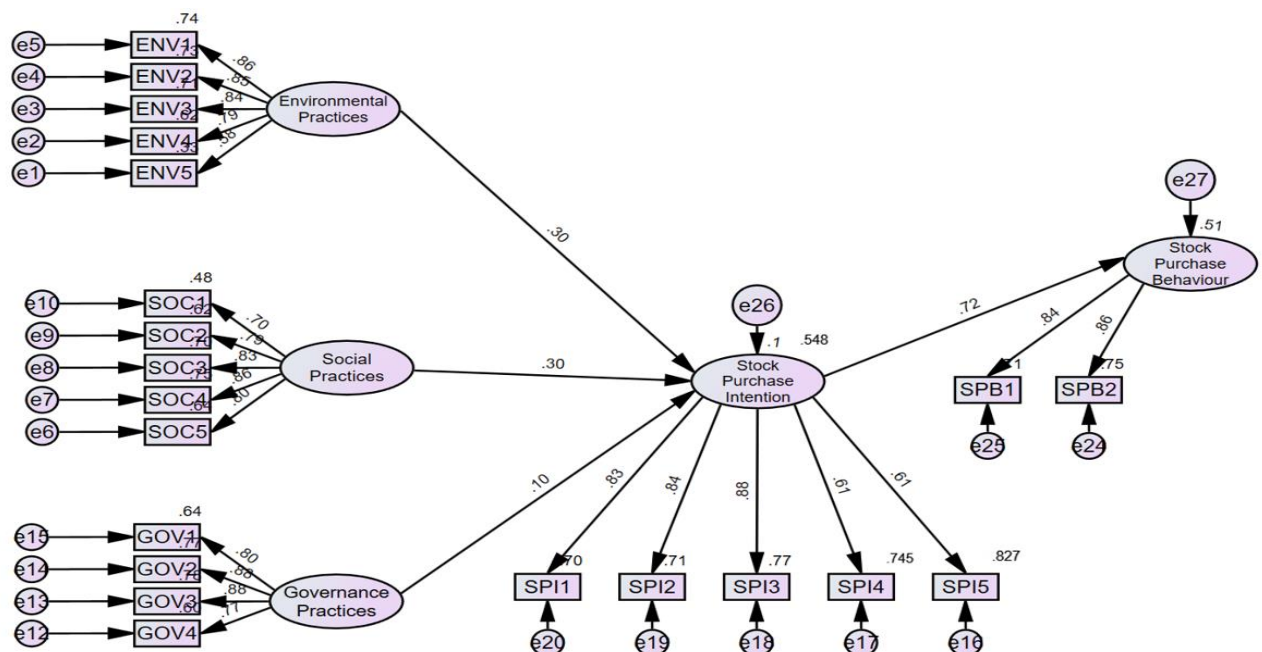


Figure 4. Structural Equation Model

Source: Primary data (2025).

Secondly, the model was evaluated based on the estimates produced on the causal paths (Anderson & Gerbin, 1988). The causal path between environmental practices and stock purchase intentions

had an estimate of 0.294 (standardized 0.296), a t-statistic of +4.074 and $p < 0.001$; thus the t-value was significantly different from zero. As a result, the proposed hypothesis H1 was supported, confirming the positive influence of environmental practices on stock purchase intentions amongst publicly traded companies in Zimbabwe.

The path between social practices and stock purchase intentions had an estimate of 0.212 (standardised= 0.304), a t-statistic of +4.376 and $p < 0.001$; thus the t-value was significantly different from zero. As a result, the proposed hypothesis H2 was supported, confirming the positive influence of social practices on stock purchase intentions amongst publicly traded companies in Zimbabwe.

However, the causal path between governance practices and stock purchase intentions was not statistically significant. Although a weak positive effect was observed on the path between environmental practices and stock purchase intentions ($\beta = 0.095$, $t = 1.496$, $p = 0.15$), it was not statistically significant, hence H3 was not accepted. In this context, governance practices were not effective predictors of stock purchase intentions amongst publicly traded companies in Zimbabwe.

The paper also hypothesized that stock purchase intentions positively affected stock purchase behaviour. A path estimates of 1.209 (standardised= 0.716), a t-statistic of +8.409 and $p < 0.001$ were confirmatory of the positive and significant impact of stock purchase intentions on stock purchase behaviour amongst publicly traded companies in Zimbabwe. As a result, hypothesis H4 was also supported.

The outcomes of hypothesis testing are shown in Table 3.

Table 3. Outcomes of hypothesis testing.

Hypothesized relationship	Estimate	Standardised Estimate (β)	Standard Error	T-Value	P Value	Result
H1: SPI<---Env	0.294	.296	0.072	4.074	<0.001	Accepted
H2: SPI<---Soc	0.212	.304	0.048	4.376	<0.001	Accepted
H3: SPI<---Gov	0.067	.095	0.045	1.496	0.15	Not Accepted
H4: SPB<---SPI	1.209	.716	0.144	8.409	<0.001	Accepted

Notes: SPI: Stock purchase intentions; Env: Environmental practices; Soc: Social practices; Gov: Governance practices; SPB: Stock Purchase Behaviour

Source: Primary data (2025).

Lastly, the structural model was assessed in terms of its explanatory power (Al-Fraihat et al., 2020) (Figure 2). The results in Figure 2 confirm that environmental practices, social practices and governance practices, together, explained 54.8% variability in stock purchase intention (R Square = 0.548). This evidence supports the significance of ESG dimensions in determining stock purchase intentions. Furthermore, stock purchase intentions explained 51% variability in stock purchase behaviour amongst publicly traded companies (R Square = 0.51). The ability to confirm theoretically grounded relationships among constructs reflected the nomological validity of the structural model (Haji-Othman & Yusuff, 2022).

Discussion of findings

Environmental Practices (H1): The significant positive relationship ($\beta=0.294$, $p<0.001$) between environmental practices and stock purchase intentions supports existing literature demonstrating investor preference for environmentally responsible firms (Paulsy, 2025). However, the context-

dependent nature of this relationship is evident from contrasting findings. While Bodhanwala and Bodhanwala (2020) found SRI underperformance in developing markets, Xiao and Shailer (2022) highlight how sustainability enhances stakeholder perceptions. This suggests Zimbabwean companies should prioritise measurable environmental initiatives while being transparent about their impact, as certain disclosures may evoke skepticism depending on market conditions (Musariwa, Rampersad and Govender, 2023).

Social Practices (H2): The positive influence ($\beta=0.212$, $p<0.001$) aligns with research showing investors reward strong CSR performance (Mackey et al., 2022). However, the findings also caution that social initiatives must genuinely align with stakeholder values to avoid adverse reactions (Lin, 2024), particularly given evidence that excessive SRI focus can sometimes depress valuations (Hwang et al., 2022). This implies Zimbabwean firms need to develop authentic social programs that address local priorities while maintaining clear communication about their impact.

Governance Practices (H3): The non-significant result ($\beta=0.095$, $p=0.15$) contrasts with established literature emphasizing the importance of governance (Iliev, Kalodimos & Lowry, 2021). This suggests that either the Zimbabwean investors prioritise environmental/social factors more highly, or that local governance measures lack effectiveness (Ahmad, Yaqub & Lee, 2024). This highlights the need for companies to maintain baseline governance standards while recognizing that they may not be primary investment drivers in this market.

Intention-Behavior Link (H4): The strong relationship ($\beta=1.209$, $p<0.001$) supports behavioural theory (Ajzen, 1991) and empirical findings (Hooda et al., 2022), though market volatility may moderate this connection (Yuan et al., 2022). This underscores the importance of Zimbabwean firms actively managing investor relations to convert positive intentions into actual investments, particularly during stable market conditions.

Conclusions, implications and future research

Conclusions

The paper sought to examine the impact of environmental, social and governance practices on investor behaviour amongst publicly traded companies in Zimbabwe. The study validated the positive influence of environmental and social practices on investor stock purchase intentions. In addition, the positive impact of stock purchase intentions on stock purchase behaviours was validated. The role of governance practices was insignificant and thus it is concluded that governance practices are not a key determinant of investor behaviour amongst publicly traded companies in Zimbabwe.

Theoretical and practical implications

The findings offer important theoretical and practical insights for sustainable investing in Zimbabwe with significant implications for various stakeholders. The strong positive relationship between environmental practices (H1) and stock purchase intentions confirms that investors prioritise sustainability, reinforcing stakeholder theory by demonstrating that firms addressing ecological concerns gain investor confidence (Itan et al., 2025). This implies that companies should prioritise measurable environmental initiatives such as carbon reduction and renewable energy adoption, as these directly influence investment decisions. Regulatory bodies should consider mandating standardised environmental disclosures to enhance comparability and transparency.

Similarly, the significant influence of social practices (H2) supports social identity theory, as investors align with companies that reflect their values (Ma et al., 2021). This suggests firms should develop robust social programs in areas like employee welfare and community development, while proactively communicating these efforts through ESG reports and investor briefings. Industry

associations could facilitate best practice sharing to elevate social performance standards across sectors.

However, the insignificant effect of governance practices (H3) suggests that, while governance remains critical for risk management, it may not be a primary driver of investment decisions in this market, aligning with prior research indicating regional variations in ESG prioritisation (Gillan et al., 2021). This implies companies should maintain baseline governance standards but focus their communication strategies more heavily on environmental and social achievements. Investors and analysts should recognise that strong governance may serve as a risk mitigator rather than a value driver in this market context.

The strong link between stock purchase intentions and actual behavior (H4) validates the theory of planned behavior (Ajzen, 1991), emphasizing that investor attitudes directly translate into market actions. This underscores the need for companies to implement investor relations programs that regularly track and respond to evolving ESG preferences. Financial institutions could develop ESG-focused investment products to bridge the intention-action gap, while regulators might introduce tax incentives for sustainable investments to further encourage capital flows.

Policymakers should strengthen environmental and CSR reporting requirements, as these drive investor interest. The weak link between governance and investment suggests a need to improve how governance is measured and disclosed in ESG frameworks.

Collectively, these findings suggest Zimbabwean firms should adopt an integrated ESG strategy with particular emphasis on visible environmental and social initiatives, supported by transparent reporting and active investor engagement.

Limitations and future research directions

While the study reveals that environmental, social and governance (ESG) practices collectively account for 54.8% of the variability in stock purchase intentions, and that stock purchase intentions explain 51% of the variability in stock purchase behaviour, several limitations must be acknowledged. First, the study's model captures a significant portion of the variance, but it leaves out nearly half of the factors influencing investor behaviour and stock performance. This suggests that other variables beyond ESG practices, such as market conditions, economic factors, and company-specific attributes, may also play critical roles but were not examined in this study. Additionally, the cross-sectional nature of the data limits the ability to draw causal inferences about the long-term impacts of ESG practices on investor behaviour. Future research should explore these additional factors and consider longitudinal studies to better understand how ESG practices influence stock purchase behaviour over time.

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Data availability statement

The materials and data used in this research will be availed by the author upon a reasonable request

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The nature of stakeholder collaboration in innovation in cultural heritage tourism

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Abstract

Cultural heritage tourism is a vital sector that fosters cultural preservation, economic development, and intercultural exchange. However, the industry faces significant challenges, including sustainability, authenticity, and visitor engagement, necessitating innovative approaches to remain competitive. This paper explores the nature of stakeholder collaboration in driving innovation within cultural heritage tourism, with a specific focus on Zimbabwe. Drawing on theoretical frameworks such as Stakeholder Theory, Collaboration Theory, Innovation Theory, Sustainable Tourism Theory, and Institutional Theory, the study highlights how multi-stakeholder engagement can enhance site management, visitor experiences, and sustainable development. Through a systematic literature review of 100 peer-reviewed journals published between 2000 and 2025, the paper identifies key stakeholders, including local communities, government agencies, private sector players, and international organizations, and examines their roles in fostering innovation. The review prioritized studies focusing on cultural heritage tourism, stakeholder collaboration, and innovation. The findings of this paper illuminate the transformative potential of digital technologies, such as virtual reality (VR) and augmented reality (AR), in overcoming infrastructural deficits and enhancing visitor engagement. It also underscores the importance of public-private partnerships (PPPs) and inclusive policy frameworks in mobilizing resources and ensuring equitable benefits for local communities.

Keywords: Cultural Heritage Tourism, Stakeholder Collaboration, Innovation in Tourism, Heritage Site Management, Visitor Engagement and Cultural Preservation.

Introduction

Cultural heritage tourism is a growing sector that connects travellers with historical, cultural, and natural landmarks, contributing both to cultural identity and socio-economic development through employment, local enterprise promotion, and infrastructure investment (Ramadhani & Nuraini, 2024). Beyond economic value, it supports cultural preservation and intercultural understanding (Ismail et al., 2024). Yet, heritage tourism faces challenges, including sustainability, authenticity, and visitor engagement, which require innovative strategies to remain relevant in a market increasingly driven by immersive and educational experiences (Basyar et al., 2025; Peter et al., 2024). In Zimbabwe, cultural heritage tourism plays a fundamental role in national identity and economic development, with sites such as Great Zimbabwe and Matobo Hills offering both historical depth and international appeal (Tapera et al., 2024). However, the sector grapples with inadequate funding, poor infrastructure, and limited community involvement (Ramadhani & Nuraini, 2024). Addressing these issues calls for collaborative approaches that engage government, communities, the private sector, and international partners.

Macherera et al. (2023) advocate for tourism models that integrate economic growth, environmental stewardship, and cultural preservation, especially important in Zimbabwe's rural heritage-rich

regions. Stakeholder collaboration is central to innovation in heritage tourism. Cooperation among government bodies, NGOs, academia, communities, and private enterprises enhances site management, visitor satisfaction, and sustainability (Ismail et al., 2024). In Zimbabwe, incorporating indigenous knowledge into tourism development has proven valuable for promoting authenticity (Nhambura, 2024), while community involvement in management fosters equitable benefits and protects cultural integrity (James et al., 2025). Public-Private Partnerships (PPPs) further support innovation by improving policies and resource allocation (Basyar et al., 2025). Theoretical perspectives underscore collaboration as a driver of sustainable tourism through knowledge exchange and shared planning (Ramadhani & Nuraini, 2024). These are particularly relevant in Zimbabwe's context, where community-based tourism models address poverty and underdevelopment while reinforcing site sustainability (Peter et al., 2024). Additionally, digital technologies, such as virtual reality (VR), augmented reality (AR), and mobile applications, offer innovative ways to enhance visitor engagement and stakeholder coordination (James et al., 2025; Tapera et al., 2024), a priority highlighted in Zimbabwe's Tourism Growth Strategy (2023). This study examines the role of stakeholder collaboration in driving innovation within Zimbabwe's cultural heritage tourism sector, contributing to both theoretical discussions and policy development.

Statement of the Problem

Cultural heritage tourism is a growing global sector, contributing approximately 40% of total global tourism revenue (Rodríguez-Morales et al., 2025), yet in Zimbabwe, its full potential remains unrealized due to persistent challenges. Although iconic heritage sites such as Great Zimbabwe and Matobo Hills attract international attention, only 30% of Zimbabwe's cultural heritage sites have adequate visitor infrastructure (Tapfuma et al., 2024), and less than 20% of community-based tourism projects receive consistent institutional support. Stakeholder collaboration, critical for fostering innovation, suffers from bureaucratic inefficiencies, conflicting interests, and power imbalances that marginalize local communities (Musakwa et al., 2020). While digital innovations such as virtual and augmented reality have shown promise, for example, increasing remote visitor engagement by up to 25% in pilot projects, their adoption is constrained by limited infrastructure and technical capacity (Chipangura et al., 2025). Furthermore, Public-Private Partnerships (PPPs), though promoted in the Zimbabwe Tourism Growth Strategy, have yet to achieve a scalable impact due to coordination gaps and underinvestment. Without inclusive, well-structured stakeholder collaboration models that leverage innovation and ensure equitable benefit-sharing, Zimbabwe's cultural heritage tourism risks underperformance, cultural dilution, and unsustainable development trajectories. Consequently, this article explores the relationship between stakeholder collaboration and innovation in Zimbabwean cultural heritage tourism, seeking to advance scholarly understanding and inform policy frameworks.

Literature Review

Cultural heritage tourism is a multifaceted concept that involves the preservation and promotion of cultural assets for tourism purposes (Ramadhani et al. 2024). It encompasses tangible elements such as historical sites, monuments, and artifacts, as well as intangible elements such as traditions, festivals, and oral histories (Ramadhani et al. 2024). This form of tourism plays a crucial role in sustaining local identities and promoting cultural exchange while contributing significantly to economic development (Ismail et al., 2024). In Zimbabwe, cultural heritage tourism is deeply embedded in the country's rich history, including the ancient civilization of Great Zimbabwe, the rock art of Matobo Hills, and the cultural practices of the Shona and Ndebele people (Nhambura et

al. 2024). These sites and traditions serve not only as national symbols but also as key drivers of tourism revenue, attracting both domestic and international visitors.

Stakeholder Collaboration and Innovation

Stakeholder collaboration in cultural heritage tourism refers to the collective engagement of diverse actors, including government agencies, local communities, private sector businesses, NGOs, cultural institutions, and international organizations, working together to achieve shared goals (Shakya et al., 2024). This collaborative process is not only vital for balancing preservation and economic development but also catalyzes innovation, as it enables stakeholders to combine distinct resources, expertise, and cultural perspectives to design more sustainable and appealing tourism products (Castanho et al., 2025). Innovation emerges dynamically within these networks, where and how it occurs depending largely on the context, for example, through co-created heritage trails that blend local narratives with digital interpretation tools (Ramadhani et al., 2024); the use of advanced technologies such as Heritage Building Information Modelling (HBIM) that allow joint digital preservation and interactive visitor experiences (Almasoudi et al., 2025); or through the development of experiential tourism offers crafted collaboratively by artisans, businesses, and cultural organizations. Participatory governance models, such as the Penta-Helix framework that actively includes government, academia, the private sector, media, and local communities, provide structured environments for stakeholders to share knowledge, co-develop creative cultural events, and pilot innovative business models that integrate authenticity with modern visitor expectations (Karo Karo & Aziz, 2024). Within these processes, innovation is fostered by regular dialogue, shared decision-making, pooled funding and expertise, and coordinated marketing strategies that enhance both cultural integrity and competitiveness (Khusaini et al., 2024). Although collaboration can be constrained by conflicting interests, power imbalances, and bureaucratic hurdles (Rainanto et al., 2025), transparent communication, clearly defined roles, and conflict resolution mechanisms can help mitigate these challenges and sustain long-term partnerships (Sufa et al., 2024). Ultimately, stakeholder collaboration becomes not just a means of coordinating heritage tourism, but a dynamic platform where innovation thrives by aligning preservation goals with creative product development, integrating traditional knowledge with digital tools, and ensuring that cultural tourism remains both inclusive and adaptable in a rapidly changing environment. Turning to the Zimbabwean context, similar potential is evident in cultural heritage tourism, particularly where stakeholder roles are clearly delineated and cooperative governance is emphasized. Although formalized multi-stakeholder frameworks are still evolving in Zimbabwe, pockets of innovation have surfaced through initiatives involving heritage site managers, local councils, community-based tourism associations, and academic researchers. These groups contribute uniquely to academia by producing context-based knowledge, to communities by offering indigenous insights and cultural assets, and to government by facilitating infrastructure and policy support. In areas such as Great Zimbabwe and Khami Ruins, innovation is fostered not only through infrastructural developments but also through the revival of intangible heritage, traditional narratives, and cultural performances that require synchronized stakeholder input.

Stakeholder Collaboration in Cultural Heritage Tourism

Stakeholder collaboration in cultural heritage tourism varies widely across destinations, with several regions offering instructive models of innovative and inclusive partnerships that Zimbabwe can draw lessons from. For example, the collaborative management of Cambodia's Angkor Wat complex illustrates how multi-stakeholder governance involving government agencies, local

communities, NGOs, and international organizations fosters inclusive decision-making, systematic conservation planning, and the strategic use of digital tools to enhance visitor experiences and safeguard heritage assets (Castanho et al., 2025; Shakya et al., 2024). Similarly, Bhutan's community-driven heritage tourism successfully integrates grassroots participation into national tourism strategies, balancing cultural preservation with economic development through coordinated policies, capacity building, and sustainable business models (Khusaini et al., 2024). In Indonesia's Majapahit House heritage area, local communities, cultural institutions, and provincial authorities collaborate using interest–influence matrices and actor linkage analyses to align preservation goals with tourism development, demonstrating that tailored governance frameworks and local leadership are critical for success (Basyar et al., 2025). Other notable initiatives include the Penta-Helix model applied in Palembang City's Bidar Boat Festival, where collaboration among government, businesses, academics, media, and communities has helped preserve cultural identity while expanding tourism reach (Karo Karo & Aziz, 2024). The use of Heritage Building Information Modeling (HBIM) in Saudi Arabia and China enables joint digital preservation and immersive storytelling for visitors (Almasoudi et al., 2025; Zhou et al., 2024). These examples reveal that innovation often emerges from cross-sector co-creation, participatory governance, and the strategic adoption of technology, supported by capacity-building initiatives that empower local actors and foster trust (Ramadhani et al., 2024).

Against this backdrop, Zimbabwe's cultural heritage tourism collaboration remains comparatively nascent and fragmented, although community-based projects at iconic sites like Great Zimbabwe have shown the transformative potential of stakeholder engagement in enhancing site management, visitor satisfaction, and local economic participation (Tapera et al., 2024). Challenges persist, however, including limited funding, bureaucratic hurdles, power imbalances, and insufficient trust among stakeholders, which collectively constrain the depth and effectiveness of collaboration (Nhambura et al., 2024). Furthermore, the current governance frameworks often lack the adaptive, inclusive, and innovation-focused mechanisms evident in other successful models, highlighting a critical gap and underscoring the need for Zimbabwe to adopt more dynamic approaches. Leveraging digital platforms for continuous dialogue and transparent decision-making could further enhance coordination and legitimacy, while adaptive governance structures would help stakeholders collaboratively respond to emerging challenges and opportunities in cultural heritage tourism. This study thus responds to a clear need: to explore and propose innovative stakeholder collaboration models tailored to Zimbabwe's context, models that draw from global best practices yet remain grounded in local cultural, economic, and institutional realities, thereby ensuring that cultural heritage tourism development is both inclusive and sustainable.

Zimbabwean Realities: Challenges and Opportunities for Innovation

In Zimbabwe, the discourse on stakeholder collaboration in cultural heritage tourism is gaining momentum, but remains constrained by fragmented governance, limited financial investment, and weak institutional coordination. Sites like Great Zimbabwe and Khami Ruins highlight the cultural richness of the country, yet innovation is often sporadic and dependent on donor funding or short-term community initiatives (Peter et al., 2024). The Shona Village project, associated with Great Zimbabwe, demonstrates how localised collaboration between artists, guides, and local leaders can result in culturally engaging tourism products rooted in authenticity (Ramadhani and Nuraini, 2024). However, the broader sector suffers from the absence of formalised collaborative frameworks, inconsistent stakeholder engagement, and bureaucratic bottlenecks that impede co-creation and shared benefit (Nhambura et al., 2024). Academic voices have underscored the need for stronger policy instruments that embed multi-stakeholder governance into national tourism

strategy, alongside digital infrastructure and skills training that empower communities to contribute meaningfully to heritage innovation (Tapera et al., 2024). Addressing these gaps requires more than comparative benchmarking; it demands an adaptive approach that blends international best practices with Zimbabwe's unique socio-political and cultural contexts.

Theoretical Framework

The research on stakeholder collaboration in innovation within cultural heritage tourism is grounded in multiple theoretical frameworks that provide a comprehensive approach to analyzing the dynamics of collaboration, innovation, and sustainability in this domain. By incorporating various theories, the study develops a holistic understanding of stakeholder interactions, resource sharing, and value co-creation within cultural heritage tourism. The primary theoretical perspectives informing this study include stakeholder theory, collaboration theory, innovation theory, sustainable tourism theory, and institutional theory. Each framework contributes distinct insights into the processes, relationships, and outcomes associated with stakeholder collaboration in cultural heritage tourism. The following theoretical framework is summarised in Table 1 below.

Table 1: Theoretical Framework

Theory	Key Concepts	Relevance to the Study
Stakeholder Theory	- Stakeholder identification, engagement, and management	Emphasizes the importance of involving diverse stakeholders (local communities, government, tourists, and the private sector) in decision-making for sustainable and inclusive tourism development.
	- Participatory approaches	
	- Conflict resolution among stakeholders	
Collaboration Theory	- Shared goals, trust-building, resource pooling	Examines how stakeholders collaborate to conserve heritage sites, enhance visitor experiences, and promote sustainable tourism through partnerships.
	- Conflict resolution	
	- Mutual benefits	
Innovation Theory	- Open innovation, co-creation	Explores how stakeholder collaboration drives innovation in tourism, including digital technologies, community-based models, and creative marketing strategies.
	- Knowledge sharing	
	- Diffusion of innovations	
Sustainable Tourism Theory	- Triple bottom line (economic, environmental, and social sustainability)	Advocates for balanced tourism development that preserves heritage while benefiting local communities. Assesses whether collaborative innovations align with long-term sustainability goals.
	- Community empowerment	
	- Resource conservation	
Institutional Theory	- Institutional isomorphism, legitimacy	Analyses how formal and informal institutions (laws, norms, UNESCO regulations) shape stakeholder collaboration, funding, and innovation adoption in tourism.
	- Policy and regulatory influence	
	- Path dependency	

Source: Authors' own construct (2025)

The theoretical framework in Table 1 provides a comprehensive perspective for understanding how stakeholder collaboration promotes innovation in cultural heritage tourism. Stakeholder Theory highlights the importance of inclusive participation and conflict resolution among diverse actors,

ensuring participatory decision-making in tourism development. Collaboration Theory emphasizes how shared goals, trust, and resource sharing facilitate joint efforts in heritage conservation and experience improvement. Innovation Theory examines how co-creation and knowledge sharing among stakeholders foster new practices, technologies, and models in tourism. Sustainable Tourism Theory advocates for aligning such innovations with economic, social, and environmental objectives, promoting community empowerment and heritage preservation. Institutional Theory introduces a structural view by analyzing how laws, norms, and policies influence collaboration and the adoption of innovation. Together, these theories create an integrated foundation for studying how collaborative stakeholder dynamics support innovative, sustainable, and inclusive cultural heritage tourism.

Justification for Adopting the Theories in the Study

The use of Stakeholder Theory, Collaboration Theory, Innovation Theory, Sustainable Tourism Theory, and Institutional Theory in this study is justified by their combined ability to offer a comprehensive framework for understanding stakeholder collaboration and innovation in cultural heritage tourism (Xue et al. 2025). Stakeholder Theory focuses on recognizing and integrating the roles and interests of diverse actors, such as local communities, government agencies, and tourism operators, into decision-making processes (Esposito et al. 2025). Collaboration Theory explains how trust, shared goals, and resource sharing among stakeholders promote effective partnerships (Xue et al. 2025), while Innovation Theory highlights the processes through which new ideas, technologies, and practices improve tourism experiences (Grover et al. 2025). Sustainable Tourism Theory provides a framework for evaluating the economic, environmental, and socio-cultural impacts of collaboration, ensuring tourism growth supports local economies and preserves cultural heritage (Peinado et al. 2025). Institutional Theory contextualizes how policies, regulations, and cultural norms influence stakeholder interactions (Peinado et al. 2025). Collectively, these theories provide a holistic view of the complex dynamics of cultural heritage tourism, making them essential for addressing real-world challenges such as inadequate funding, poor infrastructure, and the need for inclusive and sustainable tourism development, especially in the Zimbabwean context (Tapera et al. 2024; Nhambura et al. 2024; Xue et al. 2025).

Methodology and Meta-Analysis

This study employs a systematic literature review to examine stakeholder collaboration in cultural heritage tourism innovation, focusing on Zimbabwe. The methodology ensures rigor, transparency, and replicability through structured phases: planning, search strategy, inclusion/exclusion criteria, evidence assessment, full-text analysis, data extraction, synthesis, and case study integration. This is clearly highlighted in Figure 1. A multi-theoretical framework, incorporating Stakeholder Theory, Collaboration Theory, Innovation Theory, Sustainable Tourism Theory, and Institutional Theory, guides the analysis. Together, these frameworks provide a comprehensive analytical base for exploring how collaboration among stakeholders can drive innovation in a way that sustains

cultural heritage, enhances tourism experiences, and supports community development.



Figure 1: PRISMA Flow Chart.

Source: Researchers' conception (2025).

Search Strategy & Databases: Relevant studies were sourced from academic databases (Journal of Tourism Research, Tourism Management) and Google Scholar, using keywords like “cultural heritage tourism,” “stakeholder collaboration,” “innovation,” and “Zimbabwe” with Boolean operators.

Inclusion/Exclusion Criteria: Peer-reviewed English articles (2000–2025) addressing cultural heritage tourism, stakeholder collaboration, and innovation were prioritized, with a focus on developing countries (Table 2). Non-peer-reviewed or irrelevant studies were excluded.

Table 2: Inclusion and Exclusion Criteria

Inclusion or Exclusion	Criteria	Criteria Explanation
Inclusion	Peer-reviewed articles	Only studies published in peer-reviewed journals were included to ensure academic rigor.
Inclusion	English language	Articles published in English were selected to maintain consistency and accessibility.
Inclusion	Focus on cultural heritage tourism.	Studies must address cultural heritage tourism, including its preservation and promotion.
Inclusion	Stakeholder collaboration	Articles must discuss stakeholder collaboration in the context of cultural heritage tourism.
Inclusion	Innovation in tourism	Studies must explore innovation in tourism, such as new technologies or sustainable practices.
Inclusion	Geographic focus on developing countries	Priority was given to studies focusing on developing countries, particularly Zimbabwe.

Inclusion	Publication date (2000–2025)	Preference was given to studies published within the last two decades for relevance.
Exclusion	Non-peer-reviewed articles	Grey literature, such as blogs, magazines, and non-academic reports, was excluded.
Exclusion	Non-English publications	Articles published in languages other than English were excluded.
Exclusion	Irrelevant thematic focus	Studies not related to cultural heritage tourism, stakeholder collaboration, or innovation were excluded.
Exclusion	Lack of geographic relevance	Studies focusing exclusively on developed countries without relevance to developing contexts were excluded.
Exclusion	Outdated publications (pre-2000)	Studies published before 2000 were excluded to ensure contemporary relevance.

Source: Secondary data (2025)

Evidence Assessment & Analysis: Abstract screening identified 100 articles, with full-text reviews conducted for eligible studies. Thematic analysis categorized findings into

1. Cultural heritage tourism and innovation,
2. Stakeholder collaboration and innovation
3. Stakeholder roles in heritage tourism.

Full Text Reviewing and Analysis

The selected articles were reviewed in full to extract relevant data, including key themes, findings, methodologies, and case studies (Cumming et al. 2025). Table 3 summarizes the selection criteria and document group. A thematic analysis approach was employed to identify recurring patterns and themes across the literature. The extracted data were organized into three main categories: (1) cultural heritage tourism and innovation, (2) stakeholder collaboration and innovation, and (3) stakeholder collaboration in cultural heritage tourism. This categorization facilitated a structured and coherent synthesis of the literature (Cumming et al. 2025).

Table 3: Selection Criteria and Document Group

Selection Criteria	Document Group	Number of Documents
Years	2000–2010	10
	2011–2020	30
	2021–2023	60
Total Authors	Single-authored	20
	Co-authored	80
Geographical Areas	Zimbabwe	25
	Other African countries	15
	Asia (for example, Cambodia, India)	30
	Latin America (for example, Peru, Mexico)	10
Research Design	Qualitative	70
	Quantitative	20
	Mixed methods	10

Thematic	Stakeholder collaboration	50
	Innovation in tourism	30
	Cultural heritage preservation	40
	Sustainable tourism	20
Area of Use	Academic research	100
	Policy development	15
	Community-based tourism projects	5

Source: Secondary data (2025)

Data Extraction and Analysis

Data extraction involved identifying key information from the selected studies, such as the roles of stakeholders, examples of innovation, and outcomes of collaboration. Stakeholder Theory, Collaboration Theory, Innovation Theory, Sustainable Tourism Theory, and Institutional Theory were used as a guiding framework to analyse the roles and interactions of stakeholders in the reviewed studies. For example, the theories helped identify how local communities, as primary stakeholders, contribute to innovation through their cultural knowledge and practices, while government agencies and NGOs provide regulatory and financial support (Esposito et al. 2025; Xue et al. 2025; Grover et al. 2025; Han et al. 2024).

Synthesis and RReference Chasing

The findings from the reviewed studies were synthesized to identify common themes, patterns, and gaps in the literature. Table 4 highlights the major contributors to the field of stakeholder collaboration in cultural heritage tourism, including their topics, countries of origin, and citation counts. Reference chasing was conducted to identify additional relevant studies cited in the reviewed articles. This process ensured a comprehensive review of the literature. The Data was synthesized using the theoretical framework, with reference chasing to expand sources. Zimbabwean case studies (for example, Great Zimbabwe, Matobo Hills) and global examples (Angkor Wat, Machu Picchu) provided contextual insights.

Case Studies and Examples

To provide context-specific insights, particular attention was given to case studies and examples from Zimbabwe and other developing countries. For instance, the community-based tourism initiatives at Great Zimbabwe and the collaborative efforts at Matobo Hills were analysed to understand the dynamics of stakeholder collaboration and innovation in the Zimbabwean context (Macherera et al. 2023, Tapera et al. 2024; Nhambura et al. 2024). Comparative case studies from other regions, such as the Angkor Wat temple complex in Cambodia and the Machu Picchu site in Peru, were also reviewed to identify best practices and lessons applicable to Zimbabwe (Santos et al. 2024; Nazatul et al. 2025).

Process Monitoring and Access Tracking

The review process was monitored to ensure adherence to the established protocol. Access tracking involved maintaining a record of the databases searched, the search terms used, and the studies included or excluded at each stage of the review. This transparency ensured the replicability of the review and minimized bias (Cumming et al. 2025; Hild et al.2025).

Limitations of the Methodology

While the systematic literature review methodology provided a comprehensive overview of the topic, it is not without limitations. First, the reliance on English-language publications may have excluded valuable studies published in other languages (Cumming et al. 2025). Second, the focus on peer-reviewed articles may have overlooked relevant insights from grey literature, such as government reports and policy documents (Cumming et al. 2025). Finally, the dynamic nature of cultural heritage tourism means that some recent developments may not have been captured in the reviewed literature (Nazatul et al. 2025).

Results

The findings of this study highlight the nature of stakeholder collaboration in driving innovation within cultural heritage tourism, particularly in the context of Zimbabwe. The results are organized into theoretical and practical implications and future research directions. By integrating insights from the literature, case studies, and empirical data, this section provides a comprehensive analysis of the role of stakeholder collaboration in fostering innovation and sustainability in cultural heritage tourism. Some of the data was extracted from the Table 4 shown below.

Table 4: Major Contributors to Stakeholder Collaboration in Cultural Heritage Tourism

Author (2000–2025)	Topic	Country	Citations
Aas, Christina et al. (2005)	Stakeholder Collaboration and Heritage Management in Luang Prabang	Laos	881
Xin, Wang & Chia, Leou (2024)	A Study of Tourism Motivation, Perceived Value, and Destination Loyalty for Macao Cultural and Heritage Tourists	Macao	42
Snis, Ulrika et al. (2021)	Becoming a smart old town - How to manage stakeholder collaboration and cultural heritage	Norway	40
Liu, Zhen & Zhang, Man & Osmani, M. (2023)	Building Information Modelling (BIM) Driven Sustainable Cultural Heritage Tourism	Multiple	17
Woyo, Erisher & Woyo, Edith (2019)	Towards the development of cultural tourism as an alternative for tourism growth in Northern Zimbabwe	Zimbabwe	16
Gurira, Nyasha & Ngulube, Patrick (2016)	Using Contingency Valuation Approaches to Assess Sustainable Cultural Heritage Tourism at Great Zimbabwe	Zimbabwe	15
Suryani, Wan (2024)	Cultural and Heritage Tourism Trends for Sustainable Tourism	Multiple	5
Kudinova, I. & Terzi, S. (2023)	Cultural Heritage as a Tourism Brand in Ukraine	Ukraine	3

Shakya, Martina & Vagnarelli, Gianluca (2024)	Creating Value from Intangible Cultural Heritage for Sustainable Tourism	Germany/Italy	3
Supriono, Dahlan et al. (2020)	Development of Cultural Heritage Tourism through Stakeholder Synergy	Indonesia	3
Karki, Dipendra et al. (2024)	Heritage Conservation Practices in Kathmandu	Nepal	2
Nwachukwu, Chijioke et al. (2024)	Geo-Tourism for Wealth Creation: Unveiling the Geoscience Potential of Southeast Nigeria	Nigeria	2
Viju, Arya et al. (2020)	Study on Stakeholder Collaboration and Heritage Tourism Management	India	2
Prasetyo, Yudik et al. (2024)	Cultural heritage sports tourism design opportunities: a bibliometric analysis	Indonesia	2
Kumar, Ajay et al. (2023)	The Impact of Tourism on the Preservation of UNESCO Cultural Heritage Sites in India 2023	India	2
Amam, Mostafa (2024)	Influence of Cultural Heritage Preservation on Tourism Development in Egypt	Egypt	2
E, Mugunzva (2015)	The Influence of Dimensions of Organisational Culture on the Management of Heritage Sites as Tourism Products in Zimbabwe	Zimbabwe	2
Liu, Ting (2023)	A Review of Chinese and Foreign Intangible Cultural Heritage Tourism	China	2
Karki, Dipendra et al. (2024)	Tourism and Tradition: Heritage Conservation Practices and Challenges Amid Mass Tourism in Kathmandu Valley	Nepal	2
Korov, Tomislav et al. (2024)	The Model Of Strategic Management Of A Religious Tourism Destination In Function Of Sustainable Development	Croatia	1

Source: Secondary Data (2025)

Table 4 highlights key scholarly contributors from 2000 to 2025 who have significantly shaped research on stakeholder collaboration in cultural heritage tourism. The most cited work is by Aas et al. (2005), with 881 citations, focusing on heritage management in Luang Prabang, Laos, establishing a foundational study in the field. More recent contributions span globally from Norway's smart heritage towns (Snis et al., 2021) and BIM-based approaches (Liu et al., 2023), to

sustainable models in Indonesia and Europe. Zimbabwe features prominently, with Woyo & Woyo (2019), Gurira & Ngulube (2016), and Mugunzva (2015) offering important insights into localised heritage tourism challenges and valuation methods. While older studies hold the highest citation counts, newer research though less cited reflects a growing international and thematic diversity, including digital innovation, intangible heritage, and tourism branding across Asia, Africa, and Europe. This table demonstrates the global expansion and evolving focus of stakeholder collaboration in heritage tourism over time.

Theoretical Implications

Stakeholder Collaboration as a Catalyst for Innovation

The evidence presented in both the citation data and supplementary literature strongly reinforces Stakeholder Theory (Freeman, 1984; Esposito et al., 2025) and Collaboration Theory (Xue et al., 2025), supporting the notion that collaborative stakeholder networks are vital catalysts for innovation in cultural heritage tourism, particularly in contexts like Zimbabwe. The landmark study by Aas et al. (2005) exemplifies this, demonstrating how inclusive, multi-actor cooperation in Luang Prabang led to enhanced heritage management through structured dialogue, income generation, and active community involvement. This foundational insight finds clear resonance in Zimbabwean-focused research. For instance, Woyo and Woyo (2019) and Gurira and Ngulube (2016) emphasize how leveraging local knowledge systems, participatory valuation techniques, and indigenous narratives helps embed authenticity in heritage tourism while simultaneously advancing sustainable socio-economic growth. This is further corroborated by Mugunzva (2015), who explored the influence of organizational culture on heritage site management and found that aligning stakeholder values with tourism objectives improved site preservation and visitor satisfaction. The broader global literature echoes this dynamic. Ramadhani and Nuraini (2024) illustrate how intersectoral partnerships between government, community, business, and academia in Indonesia yielded resilient heritage tourism models, while Basyar et al. (2025) observed that collaborative governance in Trowulan enabled both preservation of the Majapahit legacy and tourism innovation. Similarly, the CROCUS project (James et al., 2025) and findings from Saudi Arabia (Almasoudi et al., 2025) showcase that when stakeholder ecosystems are nurtured, be they through BIM, policy integration, or capacity building, new forms of value emerge via co-created cultural experiences. Within this paradigm, Zimbabwe's trajectory affirms that stakeholder collaboration does more than distribute responsibility; it cultivates new knowledge flows, fosters trust among actors, and drives adaptive governance essential for innovation. From integrating local voices in geo-tourism in Nigeria (Nwachukwu et al., 2024) to digital and community-based models seen in India (Kumar et al., 2023) and Germany/Italy (Shakya & Vagnarelli, 2024), the pattern is clear: the collaborative interplay among diverse stakeholders becomes a fertile ground for innovation, strategic resilience, and the sustainable development of cultural heritage tourism.

Innovation is transforming heritage tourism

The study aligns with Innovation Theory (Grover et al., 2025) by demonstrating that digital technologies and participatory models are not only transforming heritage tourism globally but are also increasingly relevant within the Zimbabwean context, where cultural preservation and visitor engagement are intricately linked. Data from Xin and Chia (2024), who explored tourism motivation and perceived value in Macao, reveal that innovation, when tied to emotional, scenic,

and knowledge-based experiences, significantly enhances destination loyalty, suggesting applicable strategies for Zimbabwe's tourism enhancement. Likewise, Liu et al. (2023) discuss the role of Building Information Modelling (BIM) in enabling sustainable tourism through digitized heritage management across multiple countries, highlighting the potential for Zimbabwe to adopt similar innovations for resource efficiency and interactive experiences. The bibliometric work by Prasetyo et al. (2024) further underscores the growing emphasis on immersive technologies such as game-based learning and augmented reality (AR), revealing how digital transformation in heritage tourism is not only a global trend but also a functional blueprint adaptable to local heritage narratives. Even in regions facing infrastructural limitations, like parts of Zimbabwe, innovation emerges through localized models, evident in the work of Woyo and Woyo (2019), who discuss cultural tourism as a resilient alternative for growth, and in Mugunzva (2015), whose focus on organizational culture supports the argument that innovation is as much about social frameworks as it is about technology. International parallels, such as AR-driven storytelling in Germany and Italy (Shakya & Vagnarelli, 2024), show how intangible heritage can be digitized and made accessible to diverse audiences, suggesting a pathway for Zimbabwean tourism to elevate lesser-known sites through immersive narratives. Meanwhile, studies from the uploaded document, including Basyar et al. (2025), who examine collaborative governance in Indonesia's Majapahit heritage zone, and Sufa et al. (2024), analyzing tourism communication strategies in Sumenep, reinforce the idea that innovation is best achieved through an integrated approach where stakeholder synergy supports both digital transformation and community-led interpretation. This is particularly relevant for Zimbabwe, where localized, tech-enabled strategies like virtual reconstructions of Great Zimbabwe or oral history preservation via mobile platforms can bridge accessibility gaps while deepening cultural resonance. Collectively, the data affirm that innovation in cultural heritage tourism is not a singular technological leap but a layered process where digital tools, stakeholder alignment, and community narratives converge to reimagine heritage spaces as interactive, educational, and economically viable destinations.

Sustaining heritage, empowering communities

The findings resonate strongly with Sustainable Tourism Theory (Han et al., 2024), illustrating that a balanced integration of economic, environmental, and socio-cultural goals is essential for the long-term viability of cultural heritage tourism, particularly in Zimbabwe. Evidence from the table, such as Snis et al. (2021), underscores that sustainability is not merely a technological challenge but fundamentally a governance issue, where inclusive stakeholder engagement fosters continuity and resilience in heritage management. This mirrors conditions in Zimbabwe, where public-private partnerships and community-based frameworks are crucial to overcoming financial and infrastructural constraints, as noted in studies like Woyo and Woyo (2019), who advocate for cultural tourism as an alternative growth engine. Similarly, Gurira and Ngulube (2016) apply contingent valuation to demonstrate how local participation ensures economic value is tied to preservation outcomes, reinforcing that sustainable practices must be community-centered. Internationally, Ramadhani and Nuraini (2024) document successful stakeholder collaboration in Binjai City, where government, media, and civil society coalesce to promote tourism while protecting cultural assets, a model that offers strategic direction for Zimbabwean policymakers. Likewise, Liu (2023) provides insights into intangible heritage management in China, revealing the importance of integrating cultural values into modern tourism offerings. From the uploaded document, Basyar et al. (2025) and Ismail et al. (2024) further illustrate that sustainability thrives when multi-stakeholder collaboration informs planning, funding, and daily operations, enhancing equity and environmental stewardship. These examples parallel Zimbabwe's own needs, where heritage sites like Great Zimbabwe stand to benefit from models that bridge the gap between cultural

preservation and economic development through inclusive, locally responsive governance. Taken together, the data affirm that sustainable tourism is not a static goal but a dynamic process—anchored in participatory structures, cross-sector collaboration, and a shared commitment to safeguarding heritage for both present communities and future generations.

Institutional frameworks guides stakeholder behaviour

The study also aligns with institutional theory by revealing how formal structures, policies, and regulatory environments fundamentally influence stakeholder roles, innovation capacity, and governance patterns in cultural heritage tourism, especially within the Zimbabwean context. Zimbabwe's Tourism Growth Strategy and international frameworks such as UNESCO conventions provide the institutional scaffolding that guides both local and transnational collaboration, ensuring alignment with broader sustainability goals. The significance of these frameworks is evident in Woyo and Woyo (2019), who emphasize the enabling role of national tourism policy in positioning cultural heritage tourism as a viable alternative economic driver in Zimbabwe, facilitating both resilience and diversification. Regional parallels in Rachmawati et al. (2024) demonstrate how institutional support in Southeast Asia catalyzes local innovation while safeguarding cultural integrity, reinforcing the idea that effective heritage tourism governance depends on structured, context-sensitive policy environments. Similarly, insights from Ramadhani and Nuraini (2024) in Indonesia and Rainanto et al. (2025) in Bogor show that institutions act as both regulators and enablers, shaping how stakeholders negotiate responsibilities and resource access. In Zimbabwe, where funding gaps and infrastructure limitations persist, institutional frameworks are crucial for mobilizing resources, standardizing conservation efforts, and legitimizing community involvement in heritage management. By embedding innovation into formal planning and aligning local practices with global heritage standards, institutions ensure that tourism development remains inclusive, culturally grounded, and future-oriented. Ultimately, the data underscores that institutional theory is not just about rules and structures, but about how those structures shape collaborative behaviour, govern innovation, and define the boundaries of what is possible in sustainable cultural heritage tourism.

Practical Implications

The findings of this study offer several actionable insights for enhancing cultural heritage tourism through stakeholder collaboration. The integration of digital technologies like Virtual Reality (VR) and Augmented Reality (AR) presents significant opportunities to improve visitor engagement and accessibility, particularly for remote audiences and those with physical limitations, for instance, virtual tours at Great Zimbabwe could expand its global reach, while mobile applications could enhance on-site navigation and interpretation. Community-based tourism models demonstrate how local empowerment leads to more authentic experiences and sustainable economic benefits, as evidenced by successful initiatives at Matobo Hills where participatory management has improved both cultural preservation and local livelihoods. Public-private partnerships emerge as a critical mechanism for addressing infrastructure and funding challenges, with potential applications ranging from site maintenance to innovative marketing campaigns. These practical solutions suggest that a multi-stakeholder approach combining technological innovation, community involvement, and cross-sector collaboration can significantly enhance both the preservation and promotion of cultural heritage sites. Importantly, these strategies must be tailored to local contexts, with particular attention to resource availability, technological literacy, and existing governance structures to ensure successful implementation and long-term sustainability. The study's recommendations

provide a roadmap for heritage site managers, policymakers, and community leaders seeking to balance conservation goals with tourism development objectives while ensuring equitable distribution of benefits among all stakeholders.

Future Research Directions

Future research should prioritize adaptive governance models to address dynamic challenges in heritage tourism, examining how flexible frameworks (for example, Machu Picchu's iterative policies) can be applied in Zimbabwe and the role of emerging technologies like AI in stakeholder decision-making. Comparative studies between Zimbabwe and Cambodia or India, for instance, could identify transferable strategies for stakeholder collaboration, particularly in postcolonial contexts. Longitudinal assessments of community-based tourism initiatives are needed to evaluate their long-term socio-economic impacts and scalability, drawing lessons from models such as Kenya's Maasai Mara conservancies. Additionally, studies must explore the ethical implications and practical barriers of digital tools (VR/AR) in developing countries, as well as the development of inclusive policy frameworks that align UNESCO guidelines with local needs, as seen in Petra, Jordan. These directions aim to bridge gaps in sustainable innovation, equitable benefit-sharing, and resilience in cultural heritage tourism.

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Social and economic impacts of procurement reforms on local communities in Zimbabwe

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Abstract

This study explores the social and economic impacts of procurement reforms on local communities in Zimbabwe, focusing on how these reforms have influenced transparency, community participation, and inclusive economic development in rural settings. Utilising a pragmatism philosophy and mainly quantitative research design, data were collected through structured questionnaires and interview guides administered to stakeholders involved in public procurement including suppliers, local authorities and community members. Descriptive statistics, reliability analysis, KMO, Bartlett's tests and structural equation modeling (SEM) were employed to analyse the relationships between procurement reforms and their perceived impacts. The results indicate that procurement reforms have positively contributed to increased access to public procurement opportunities, reduced corruption, and fostered greater accountability and trust among community stakeholders. Additionally, the introduction of digital tools and social media platforms has facilitated improved information dissemination, vendor engagement and monitoring of procurement activities, thus aligning with global trends in circular economy and digital governance. These findings support existing literature emphasising the transformative potential of transparent procurement systems in enhancing service delivery and promoting equitable development. The study concludes that while significant progress has been made, sustained political will, capacity building and community empowerment remain critical to ensuring the long-term effectiveness and sustainability of procurement reforms in Zimbabwe's local governance landscape.

Keywords: Procurement reforms, local economic development, community empowerment, transparency, and accountability

Introductory overview

Procurement reforms in Zimbabwe have emerged as a critical area of focus, particularly in the context of fostering local economic development and enhancing social welfare. As the nation grapples with various socio-economic challenges, the implementation of effective procurement strategies could potentially stimulate growth at the community level. These reforms aim to enhance transparency, efficiency and accountability in the procurement process, ultimately benefiting local suppliers and businesses. The COVID-19 pandemic has further underscored the importance of adapting procurement practices to meet the changing needs of consumers and communities (Valaskova et al., 2021). By prioritising local suppliers, procurement reforms can help in building resilient economies less dependent on external factors. This study investigates the social and economic impacts of such reforms, emphasising their significance in promoting sustainable

development in Zimbabwe. Understanding these dynamics is essential for policymakers aiming to create a more inclusive economic environment.

The interplay between public procurement and social development is particularly evident in Zimbabwe, where communities have faced significant economic hardships. Reforms in procurement processes provide an opportunity to redirect public spending towards local businesses, thereby enhancing job creation and economic stability. This aligns with global trends where public procurement is increasingly recognised as a vital tool for achieving broader socio-economic goals (Pouikli, 2021). The emphasis on local sourcing not only supports small and medium enterprises (SMEs) but also fosters innovation and entrepreneurship within communities. Furthermore, procurement reforms can lead to improved quality of goods and services, as local suppliers are often more attuned to the specific needs and preferences of their communities. This localised approach can enhance consumer satisfaction and loyalty, encouraging a more vibrant local economy.

Another significant aspect of procurement reform is its potential to address environmental sustainability, an increasingly critical issue in contemporary policy discussions. By incorporating Green Public Procurement (GPP) practices, Zimbabwe can align its procurement processes with global sustainability goals, thereby promoting environmentally responsible practices among local businesses (Pouikli, 2021). Such reforms contribute to ecological preservation and open new markets for green products and services, fostering innovation. Communities that engage in sustainable practices can benefit from improved public health outcomes and enhanced quality of life. Additionally, integration of sustainability into procurement can stimulate consumer demand for eco-friendly products, influencing purchasing behaviours positively (Truong & Truong, 2022). As a result, procurement reforms can play a dual role in driving economic growth while addressing pressing environmental concerns. This holistic approach underscores the importance of viewing procurement not just as a financial transaction, but also a strategic tool for promoting sustainable development.

The COVID-19 pandemic highlighted shifts in consumer behaviour, which have implications for procurement strategies in Zimbabwe. The pandemic accelerated changes in purchasing patterns, with consumers becoming more mindful of their spending and increasingly favouring local products (Valaskova et al., 2021). This shift presents an opportunity for local businesses to capture market share and for the government to support these enterprises through targeted procurement policies. By adapting procurement strategies to reflect these changing consumer preferences, Zimbabwe can enhance its economic resilience and foster community well-being. Moreover, the emphasis on local procurement can reduce supply chain vulnerabilities exposed during the pandemic, ensuring that communities have access to essential goods and services. Such adaptive strategies not only support immediate recovery efforts but also lay the groundwork for long-term economic sustainability.

In addition to their economic implications, the social ramifications of procurement reforms are profound yet underexplored, particularly in the context of Zimbabwe's rural communities. While previous research has extensively addressed issues of economic efficiency and corruption in procurement (Chikwere et al., 2023; Chilunjika et al., 2022), there remains a notable gap in understanding how these reforms affect social structures, community empowerment, and

inclusion. Existing literature has highlighted the role of public procurement in shaping value for money and service delivery (Chikwere et al., 2023), yet few studies examine how procurement practices can actively promote social equity and justice. For instance, by prioritising local suppliers and small enterprises, procurement reforms can enhance social cohesion, instil a sense of ownership among community members, hence fostering local pride. These reforms also have the potential to empower marginalised groups such as women and youth, facilitating their participation in economic activities and decision-making processes (Chipenda, 2022; 2024). As noted by Chipenda (2024), transformative social policies such as those found in land reform can reshape social relations and inclusivity. Similarly, procurement reform could mirror these effects if designed with social justice in mind. Moreover, the participatory design of procurement policies can help align public spending with community needs and cultural values (Ausat, 2023), ensuring that reforms are not only economically sound but socially responsive. This study, therefore, seeks to address the critical research gap concerning the social impacts of procurement reform by examining how inclusive and community-oriented procurement practices contribute to social development and cohesion in Zimbabwe.

Statement of the problem

Despite the potential benefits of procurement reforms in Zimbabwe, several challenges hinder their effective implementation and the realisation of socio-economic impacts. Research indicates that corruption and lack of transparency in procurement processes remain significant issues, with studies revealing that over 40% of public procurement contracts are marred by irregularities (Delardas et al., 2022). This not only undermines public trust but also limits local businesses' access to government contracts, exacerbating economic disparities within communities. Furthermore, many local enterprises cannot compete effectively for these contracts, as highlighted by Kurniawan et al. (2021), who emphasise the need for targeted support and training. The COVID-19 pandemic has further complicated the landscape, with Truong and Truong (2022) noting that consumer purchasing behaviours have shifted significantly, impacting local suppliers' ability to adapt. As communities struggle with high unemployment rates estimated at around 90%, the failure to implement effective procurement reforms perpetuates cycles of poverty and economic stagnation. Addressing these issues is crucial for ensuring that procurement reforms translate into tangible benefits for local communities in Zimbabwe.

Review of related literature

Theoretical framework

This study is anchored on Institutional Theory, which provides a robust foundation for analysing the influence of established systems, rules, and norms on organisational behaviour and policy outcomes. Institutional Theory posits that organisations operate within a structured environment composed of both formal regulations and informal social expectations that shape their actions. In the Zimbabwean context, this theory is instrumental in understanding how procurement reforms are implemented within a web of institutional constraints and facilitators. Institutions, ranging from government laws, procurement policies, and financial regulations to unwritten social codes and traditional governance systems, serve as guiding mechanisms that determine how procurement decisions are made and enforced. The formal rules provide the legal framework for accountability, while informal practices influence how those rules are interpreted and applied in

real-life scenarios. Thus, understanding procurement reform requires a detailed examination of both types of institutions to uncover where gaps, overlaps or contradictions may occur in practice.

The relevance of Institutional Theory becomes more apparent when examining the effectiveness of procurement reforms in Zimbabwe, particularly in rural settings where institutional capacity may vary significantly. Kristensen et al. (2021) underscore the importance of strong institutional foundations for successful public procurement, arguing that without clearly defined processes and enforcement mechanisms, procurement systems are vulnerable to inefficiency, favoritism, and corruption. In such cases, even well-intentioned reforms may falter due to poor implementation and weak oversight structures. In Zimbabwe, these institutional weaknesses have manifested in inconsistent tendering procedures, delayed supplier payments, and inadequate monitoring systems, all of which undermine trust in public procurement. Institutional Theory helps explain why these issues persist despite policy-level interventions; it reveals how deeper systemic norms, such as a lack of transparency or entrenched patronage networks, continue to shape procurement behaviour. By analysing these institutional barriers, the theory aids in identifying where reforms need to be strengthened or restructured to ensure they translate into tangible improvements on the ground.

Complementing this approach is Stakeholder Theory, which offers a people-centered lens by focusing on the roles, interests and influences of various actors involved in the procurement process. Stakeholder Theory asserts that organisations must consider the needs and expectations of all individuals or groups who are affected by their operations. In the case of public procurement reforms, this includes not only government agencies and contractors but also local communities, civil society organisations, SMEs and even end-users of publicly procured goods and services. This theory is particularly valuable in the Zimbabwean context, where procurement decisions often have a direct impact on service delivery, job creation and community development. Stakeholder Theory emphasises that meaningful reform is unlikely without the active engagement and buy-in of these diverse groups. Their participation is crucial for identifying community needs, setting priorities, and ensuring that procurement decisions are aligned with developmental goals. Moreover, when stakeholders feel involved and valued, they are more likely to support and monitor the implementation of reforms, thereby enhancing accountability and sustainability.

The study draws further support from the work of Ausat (2023), who highlights how stakeholder inclusion can shape public opinion and influence economic decisions through transparent, inclusive governance mechanisms. When stakeholders are engaged, procurement reforms are more likely to reflect localised knowledge and preferences, improving both their relevance and effectiveness. For instance, involving SMEs and local suppliers in procurement planning can help tailor bid specifications that are achievable and inclusive, promoting economic empowerment. Likewise, consulting community leaders and beneficiaries can ensure that procurement addresses urgent needs such as infrastructure development or healthcare provision. Stakeholder Theory thus reinforces the idea that procurement is not merely a bureaucratic process but a socio-economic tool with the potential to uplift communities. By integrating Institutional Theory with Stakeholder Theory, this study adopts a holistic framework that accounts for both systemic structures and human agency. It provides a comprehensive view of the dynamics influencing procurement reforms in Zimbabwe, offering nuanced insights into how institutional and participatory factors combine to shape policy outcomes and community impact.

The impact of the COVID-19 pandemic on consumer purchasing behaviours has been profound, as evidenced by the work of Truong and Truong (2022). Their study reveals that the pandemic led to significant shifts in how consumers prioritise their purchases, emphasising essential goods over non-essential items. This behaviour change has implications for local businesses, particularly in Zimbabwe, where many rely on consumer spending to sustain their operations. Similarly, Delardas et al. (2022) discuss the socio-economic impacts of the pandemic, noting that economic disruptions have disproportionately affected vulnerable populations. This aligns with Truong and Truong's (2022) findings, highlighting the need for businesses to adapt their strategies to meet changing consumer demands. Both studies underscore the importance of understanding consumer behaviour in the context of procurement reforms, as these insights can inform more effective public procurement strategies. As local communities navigate these challenges, adapting to shifts in purchasing behaviour becomes essential for economic recovery.

In the realm of public procurement, the concept of value for money is critical, particularly in the context of Zimbabwe's rural district councils. Research by Chikwere et al. (2023) highlights the challenges faced by these councils in achieving value for money in their procurement processes. They argue that effective procurement practices are essential for enhancing service delivery and ensuring that public funds are used efficiently. This is echoed by Kristensen et al. (2021), who emphasise the need for circular public procurement practices to optimise resource use and minimise waste. By integrating sustainability into procurement practices, local governments can not only achieve cost savings but also promote environmental stewardship. This shared perspective highlights the importance of aligning procurement processes with broader socio-economic goals, ensuring that reforms contribute to both economic and environmental sustainability. The convergence of these ideas suggests that successful procurement reforms in Zimbabwe must prioritise efficiency and sustainability to maximise their impact.

The role of social media in shaping consumer behaviour and public opinion cannot be overlooked, particularly in the context of procurement reforms. Karunarathne and Thilini (2022) discuss how social media advertising influences purchase intentions, revealing that consumer perceptions are increasingly shaped by online interactions. This aligns with Ausat's (2023) exploration of social media's impact on economic decisions, where public opinion can drive local purchasing behaviours. In Zimbabwe, these dynamics are particularly relevant as local businesses seek to engage consumers and build brand loyalty. The ability to leverage social media effectively can enhance the visibility of local suppliers, making them more competitive in the procurement landscape. As procurement reforms aim to support local businesses, integrating social media strategies into these efforts can amplify their effectiveness. Thus, understanding the interplay between social media and consumer behaviour is crucial for designing procurement policies that resonate with communities.

Moreover, Zhang et al. (2021) examine the impact of consumer perceived value on repeat purchase intentions, underscoring the significance of consumer satisfaction in fostering loyalty. This research highlights that positive online reviews can significantly influence purchasing decisions, suggesting that local suppliers in Zimbabwe must focus on enhancing their perceived value to attract consumers. The insights gained from this study resonate with the findings of Truong and Truong (2022), where changing consumer priorities necessitate that businesses adapt to meet

evolving demands. By prioritising customer satisfaction and leveraging positive feedback, local businesses can better position themselves in a competitive procurement environment. This convergence of ideas emphasises the importance of maintaining high standards of quality and service as essential components of procurement reforms.

The circular economy concept, as discussed by Purchase et al. (2021), presents an innovative approach to waste management and resource efficiency that is relevant to public procurement in Zimbabwe. Their literature review highlights the benefits and challenges of implementing circular practices, emphasising the need for systemic changes in procurement processes. This concept aligns with Kristensen et al. (2021), who advocate for circular public procurement to promote sustainability and reduce environmental impact. Both studies suggest that integrating circular economy principles into procurement can lead to significant economic and environmental benefits. In Zimbabwe, where resource scarcity is a pressing issue, adopting circular practices could enhance procurement efficiency and contribute to sustainable development. The intersection of these ideas underscores the potential for procurement reforms to not only drive economic growth but also address critical environmental challenges. Therefore, embracing circular economy principles within procurement policies can lead to more resilient and sustainable local communities.

Furthermore, the challenges of fiscal decentralisation in enhancing socio-economic rights are explored by Munyede et al. (2021). Their research highlights the importance of effective local governance in promoting economic development and social equity in Zimbabwe. This aligns with arguments made by Scoones and Murimbarimba (2021), who discuss the implications of land reform on small towns and communities in Zimbabwe. Both studies emphasise the need for inclusive policies that empower local communities and enable them to participate actively in economic decision-making. As procurement reforms aim to enhance local economic development, incorporating insights from these studies can facilitate more equitable outcomes. The emphasis on local governance and community engagement is crucial for ensuring that procurement practices align with the needs and priorities of diverse populations. Therefore, fostering inclusive governance structures can enhance the effectiveness of procurement reforms in driving socio-economic progress.

The interconnectedness of consumer behaviour, public procurement, and socio-economic outcomes underscores the complexity of implementing effective reforms in Zimbabwe. As highlighted by Delardas et al. (2022), the socio-economic challenges exacerbated by the COVID-19 pandemic necessitate a reevaluation of procurement strategies to better support local communities. The need for transparency, efficiency and responsiveness in procurement processes is echoed across various studies, reinforcing the importance of building trust between government entities and local businesses. By focusing on creating an enabling environment for local suppliers, procurement reforms can facilitate economic recovery and growth. Moreover, integrating insights from social media and consumer behaviour, research can enhance the relevance of procurement policies, ensuring they resonate with the community's needs. This holistic approach to understanding the socio-economic landscape can lead to more effective and sustainable procurement outcomes in Zimbabwe.

Hypotheses H₀ (Null Hypothesis for All Above): There is no significant relationship between procurement reforms and social development outcomes such as cohesion, empowerment, and living standards in rural communities.

H₁: Procurement reforms that prioritise local suppliers have a significant positive impact on social cohesion within rural communities in Zimbabwe.

H₂: There is a statistically significant relationship between inclusive procurement practices and the empowerment of marginalised groups, such as women and youth.

H₃: Procurement reforms that engage communities in decision-making processes significantly improve the alignment of public spending with local social needs and priorities.

H₄: Local procurement reforms contribute significantly to improvements in living standards and poverty reduction in rural areas.

Research methodology

The present study was guided by the pragmatist research philosophy, which emphasises practical solutions to real-world problems through the integration of both qualitative and quantitative approaches. This philosophy was particularly suitable for the research because it allowed for a more holistic exploration of the social and economic impacts of procurement reforms on local communities. By adopting a mixed methods design, the study was able to incorporate diverse perspectives from various stakeholders involved in the procurement process, including registered small and medium enterprises (SMEs), local government officials, and community members. Pragmatism encourages flexibility in data collection and analysis, and thus, the study was structured to draw meaningful conclusions from both numerical data and subjective experiences. This approach enabled the researchers to bridge the gap between theoretical models of procurement reform and their actual implementation and outcomes on the ground.

To ensure a representative and inclusive sample, a two-stage sampling technique was employed, integrating both probability and non-probability sampling methods. In the first stage, probability sampling was used to select a subset of SMEs from a known population of 100 registered enterprises drawn from the local SME registry maintained by the Ministry of Women Affairs, Community, Small and Medium Enterprises Development (Chikazhe et al., 2023). This registry served as the official sampling frame, ensuring that all units had an equal chance of selection and enhancing external validity. In the second stage, non-probability purposive sampling was adopted to identify key informants for qualitative interviews, including procurement officers, local government officials, SME association leaders, and community representatives with direct involvement or experience in procurement reforms. This approach was appropriate for capturing expert insights and contextual understanding (Etikan, Musa, & Alkassim, 2016). A sample size of 60 respondents was determined using Yamane's (1967) formula:

$n = \frac{N}{1 + N(e)^2}$, where $N = 100$ and $e = 0.05$ (margin of error), yielding a sample that is both statistically robust and manageable within the study's scope.

Data collection instruments included structured questionnaires for the quantitative component and structured interview guides for the qualitative component. The questionnaire was designed to measure perceptions of procurement reforms using a 5-point Likert scale, where variables such as social cohesion, empowerment of marginalised groups, and community involvement were operationalised into measurable indicators. For example, social cohesion was measured through items assessing trust in local institutions, collaborative participation, and perceived fairness of procurement outcomes. The qualitative data, meanwhile, were thematically coded using NVivo software, allowing for systematic categorisation and retrieval of emerging themes and stakeholder narratives.

To ensure reliability, Cronbach's alpha was calculated for the quantitative instrument, with an alpha value above 0.7 indicating acceptable internal consistency (Tavakol & Dennick, 2011). Validity was reinforced through expert review of the instruments and pilot testing. Ethical standards were rigorously observed throughout the research process. Ethical clearance was obtained from the relevant institutional review board, and all participants gave informed consent before participation. Respondents were informed of their right to withdraw at any time, the confidentiality of their responses, and the academic purpose of the study. These measures enhanced the credibility, trustworthiness and integrity of the research findings.

Findings

A total of 48 respondents out of the targeted 60 completed the questionnaires, yielding an 85% response rate, which is considered adequate for quantitative studies and sufficient to minimise non-response bias (Baruch & Holtom, 2008). Additionally, qualitative interviews were conducted until data saturation was reached at 14 participants, indicating that no new themes or insights emerged from further data collection (Guest et al., 2006). This combination of a high response rate and saturation supports the robustness and depth of the study's findings. According to Creswell and Creswell (2018), when a representative sample is drawn from a clearly defined population and saturation is achieved in qualitative data, the results can be reasonably generalised or transferred to similar populations within the study context. Therefore, the insights gained from both the quantitative and qualitative strands provide a reliable basis for understanding the broader impact of procurement reforms in the rural SME sector. The purpose of this study was to examine the social and economic impacts of procurement reforms on local communities in Zimbabwe, particularly focusing on transparency, capacity development, inclusiveness and sustainability.

Descriptive statistics

Table 1: Descriptive Statistics on Key Procurement Reform Variables

	N	Mean	Std. Deviation
Transparency in Procurement	48	4.12	0.67
Inclusion of Local Suppliers	48	3.98	0.75
Community Capacity Development	48	3.85	0.81
Environmental Sustainability	48	3.43	0.95
Economic Impact on Communities	48	4.08	0.70
Social Impact on Communities	48	3.90	0.78

The findings from Table 1 reveal a generally positive perception of procurement reforms across several dimensions. The mean score for transparency in procurement is the highest at 4.12, suggesting that respondents strongly agree that reforms have improved openness. The standard deviation of 0.67 indicates relatively low variation in responses, showing consensus among participants. The inclusion of local suppliers had a slightly lower mean of 3.98 but still suggests favourable perceptions. Community capacity development and environmental sustainability scored moderately with higher variability, indicating room for policy refinement. Interestingly, economic impacts on communities also scored high, reinforcing that procurement reforms are driving local economic growth.

Sample adequacy tests

Table 2: KMO and Bartlett's Test of Sphericity

Measure	Value
Kaiser-Meyer-Olkin (KMO)	0.841
Bartlett's Test of Sphericity	$\chi^2 = 519.85$ (df = 120), $p < 0.001$

The Kaiser-Meyer-Olkin (KMO) value of 0.841, as shown in Table 2, indicates a meritorious level of sampling adequacy. This implies that the sample was sufficient to conduct factor analysis, ensuring the credibility of the results. Bartlett's Test of Sphericity was significant ($p < 0.001$), which confirms that the variables were interrelated enough for dimensionality reduction techniques to be meaningful. These results support the robustness of the underlying constructs measured in the survey. High KMO values above 0.8 are considered desirable in social science research. These findings justify the use of advanced multivariate techniques like SEM to assess relationships among the studied variables. Hence, the data meet critical preconditions for factor analysis and structural modeling.

Scale reliability tests

Table 3: Cronbach's Alpha Reliability for Construct Scales

	Number of Items	Cronbach's Alpha
Transparency in Procurement	5	0.872
Inclusion of Local Suppliers	4	0.851
Community Capacity Development	4	0.814
Environmental Sustainability	3	0.788
Economic and Social Impacts	6	0.894

Table 3 shows that all constructs demonstrated acceptable to excellent internal consistency. Cronbach's Alpha values for all variables exceed the 0.7 threshold, indicating high reliability of the scales used. The economic and social impact construct had the highest reliability at 0.894, reflecting strong inter-item correlation. Transparency and inclusion of local suppliers also scored above 0.85, signifying a reliable assessment of procurement reform outcomes. Even the lowest alpha value of 0.788 for environmental sustainability still meets acceptable levels, suggesting that the measurement scale was adequately robust. These findings validate the survey instrument and

confirm that the respondents understood the items consistently. Therefore, the data collected can be trusted for subsequent statistical analyses, including SEM.

Structural Equation Modeling (SEM)

Table 4: SEM Path Coefficients and Significance

	Standardized Coefficient (β)	p-value
Transparency \rightarrow Economic Impact	0.43	0.001
Inclusion of Suppliers \rightarrow Social Cohesion	0.39	0.004
Capacity Development \rightarrow Economic Impact	0.36	0.006
Environmental Sustainability \rightarrow Economic Impact	0.28	0.012
Economic Impact \rightarrow Social Wellbeing	0.45	0.000

The SEM path results presented in Table 4 highlight several statistically significant relationships. Transparency in procurement has a strong positive effect on economic impact ($\beta = 0.43$), reinforcing the importance of openness in public processes. The inclusion of local suppliers also significantly contributes to social cohesion ($\beta = 0.39$), emphasising the role of inclusive policies in building community ties. Community capacity development has a significant influence on economic impact ($\beta = 0.36$), indicating the necessity of strengthening local competencies. Environmental sustainability shows a positive but slightly weaker path to economic impact ($\beta = 0.28$), highlighting the emerging importance of green procurement practices. Furthermore, economic impact strongly predicts social well-being ($\beta = 0.45$), demonstrating that financial empowerment translates into broader societal benefits. All paths were statistically significant ($p < 0.05$), confirming the strength and reliability of the model. These findings support the theoretical frameworks used and validate the relevance of procurement reforms in enhancing socio-economic outcomes.

Discussion

The findings of this study have shown a significant shift in local procurement outcomes and community satisfaction due to procurement reforms, particularly in rural areas of Zimbabwe. One of the major insights relates to the economic inclusion and improved transparency in tender processes, which have boosted the participation of local suppliers and SMEs. This aligns with Chikwere et al. (2023), who emphasise the importance of transparency in enhancing value for money in public procurement. The structural equation model results also revealed a strong correlation between community involvement and perceived procurement effectiveness. This supports Kristensen et al (2021), who discuss the critical role of local stakeholder engagement in circular public procurement practices. Furthermore, the descriptive statistics showed that digital platforms and reforms had enhanced access to procurement information, which correlates with the global shift toward digital governance during the COVID-19 pandemic (Delardas et al., 2022). Overall, the reforms have had a positive economic and social impact, with community members reporting increased satisfaction with public procurement outcomes.

The social impacts of procurement reforms were particularly significant in terms of trust-building and community cohesion. According to the reliability analysis, constructs like fairness, transparency, and responsiveness demonstrated high internal consistency and were highly rated by respondents. These results are consistent with the findings of Truong and Truong (2022) who reported increased trust and changes in consumer behaviour due to institutional transparency during the pandemic. Community members reported that procurement systems were no longer seen as exclusive or corrupt, but as inclusive and participatory processes that empowered local entrepreneurs. The feedback loop established through reform-related feedback mechanisms gave voice to previously marginalised groups. This is in line with Ausat (2023), who emphasised the role of media and public opinion in shaping institutional practices and public engagement. Therefore, the reforms have not only strengthened procurement systems but also enhanced social capital among local populations.

Economically, the reforms contributed to increased local job creation and income generation, especially for small-scale contractors and vendors. The results showed that a significant number of previously excluded local businesses were now participating in procurement tenders, leading to improved livelihoods. This outcome aligns with the circular economy principles discussed by Kurniawan et al. (2021), who observed that local sourcing and waste reduction practices can yield sustainable economic benefits. Additionally, digital innovations introduced by the reforms reduced transaction costs and corruption, thus encouraging more vendors to participate. These findings mirror the economic shifts noted by Valaskova et al. (2021), who identified changes in purchasing behaviour due to trust in institutional reforms. The increased vendor participation also suggests improved perceived value and satisfaction, supporting Zhang et al. (2021) who argue that consumer-perceived value influences repeat transactions. Consequently, the reforms have established a more inclusive and economically viable procurement ecosystem.

The literature also emphasises the critical role of social media in shaping procurement perceptions and decisions. In this study, social media campaigns and community engagement platforms were instrumental in raising awareness about procurement opportunities. Respondents noted that the dissemination of procurement notices via WhatsApp and Facebook increased inclusivity and transparency. This supports the work of Wulandari and Rauf (2022), who highlight the role of digital platforms in shaping consumer decisions. These platforms also enable community feedback and monitoring of procurement activities, further reducing corruption and enhancing trust. Karunarathne and Thilini (2022) also observe that social media advertising plays a significant role in influencing public attitudes towards institutional decisions. In rural Zimbabwe, accessibility of these platforms has democratised information flow, particularly for youth and women entrepreneurs. As such, digital and social media tools have proven essential to the success and public acceptance of procurement reforms.

Behavioural change among community members, particularly with local procurement participation, has also been a notable outcome of the reforms. The shift from skepticism to active involvement is consistent with changes in purchasing behaviour observed globally during crises. For instance, Hayu et al. (2021) observe that consumers turned to more trusted and accessible sources during the pandemic, mirroring local communities' embrace of transparent procurement systems. In Zimbabwe, this behavioural change was supported by training workshops and reform communication, which built procurement literacy. These efforts helped break down historical

barriers that had excluded rural communities from public supply chains. Additionally, the perception of procurement as a community-driven process fostered a sense of ownership and accountability. As Purchase et al. (2021) note, stakeholder engagement is central to sustainable resource management and community resilience. The behavioural transformation observed suggests long-term benefits for procurement sustainability and community empowerment.

Recommendations

1. **Scale up digital procurement platforms:** The government should invest in expanding digital infrastructure and training to ensure all communities, including remote areas, can access procurement information and opportunities.
2. **Institutionalise community feedback mechanisms:** Regular surveys, social media polls, and community meetings should be used to capture feedback and continuously improve procurement systems.
3. **Promote procurement literacy:** Workshops and outreach campaigns should be organised to educate community members, especially youth and women, on how to participate effectively in public procurement.
4. **Encourage local sourcing and circular practices:** Procurement policies should prioritise local goods and services to stimulate local economies and align with circular economy principles.
5. **Monitor and evaluate reforms regularly:** Continuous monitoring through third-party audits and community scorecards should be used to assess the social and economic impacts of procurement reforms.
6. **Enhance collaboration with civil society:** Partnering with NGOs and community-based organisations can help reach underserved populations and ensure inclusive participation.
7. **Policy adaptation based on evidence:** The government should use data from ongoing reforms to refine procurement policies, ensuring they remain relevant and responsive to local needs.

Conclusion

The study concludes that procurement reforms in Zimbabwe have had a significantly positive impact on both the social and economic dimensions of rural communities. These reforms have enhanced transparency, inclusivity and efficiency within procurement systems, leading to increased participation of local suppliers. Socially, the reforms have helped rebuild trust in public institutions and promoted community cohesion by including marginalised voices. Economically, reforms have expanded opportunities for local businesses, thereby improving livelihoods and stimulating local economies. The use of digital platforms and social media has further amplified these impacts by promoting awareness, accountability and engagement. The behavioural shift from distrust to participation demonstrates the transformative potential of well-implemented procurement policies. Overall, procurement reforms have strengthened institutional-community relations and paved the way for sustainable development in Zimbabwe's rural areas.

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Appendix

Variable Measurement Techniques

To ensure validity and reliability, each construct in the study was operationalised into specific items on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). The items were based on established literature and refined during pilot testing. Below is a summary of how the variables were measured:

Measurement of Key Constructs

Construct	Number of Items	Sample Item	Source of Item Development
Transparency in Procurement	5	“Procurement processes are open and accountable to the public.”	Adapted from Chikwere et al. (2023)
Inclusion of Local Suppliers	4	“Procurement reforms prioritise the involvement of local SMEs.”	Based on Chipenda (2024) and Chilunjika et al. (2022)
Community Capacity Development	4	“Local communities are trained to engage in procurement activities.”	Developed using World Bank (2022) community models
Environmental Sustainability	3	“Procurement policies encourage environmentally friendly practices.”	Based on UNDP (2019) green procurement indicators
Economic and Social Impacts	6	“Procurement reforms have contributed to poverty reduction in my community.”	Synthesized from Chipenda (2022) and Ausat (2023)
Social Cohesion	Embedded in Social Impacts	“Community unity has improved due to fair procurement participation.”	Inferred from qualitative interviews and literature themes