Journal of Accounting, Finance and Auditing Studies
https://www.acadlore.com/journals/JAFAS

The Impact of Information Technology Systems on Internal Control Effectiveness: A Case Study of Norman Ranch Limited

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Received: 10-29-2023 **Revised:** 12-05-2023 **Accepted:** 12-18-2023

Citation: Sandu, Y., Wadesango, N., & Sitsha, L. (2023). The impact of information technology systems on internal control effectiveness: A case study of Norman Ranch Limited. *J. Account. Fin. Audit. Stud.*, *9*(4), 398-409. https://doi.org/10.56578/jafas090402.

Abstract: This research delves into the impact of Information technology systems (ITS) on the effectiveness of internal controls, using Norman Ranch Limited, a subsidiary of Development Trust in Zimbabwe, as a case study. A mixed-methods research approach, incorporating a descriptive design and a cross-sectional study, was employed. Data were gathered through close-ended questionnaires distributed to 44 employees, offering a comprehensive view of internal control processes within the organization. Analysis involved Linear Regression to establish correlations, supported by data presentation through tables, pie charts, and graphs. Findings indicate a significant, positive relationship between ITS investment and internal control efficacy, particularly evident when senior management participates actively in the installation and continuous upgrading of IT infrastructure. This includes the review of IT system packages from other organizations. A key revelation is the enhanced efficiency of internal monitoring, a critical component of internal control, through strategic IT implementation. The study concludes that judicious investment in ITS markedly improves the effectiveness of internal controls. Furthermore, it posits that a synergy between IT systems, business processes, and human resources is pivotal in fortifying internal control mechanisms.

Keywords: Information technology systems; Internal controls; Internal monitoring; Business process integration; Technology investment; Control effectiveness

JEL Classification: M41, M49

1. Introduction

The integration of new technologies into business operations, as posited by Zang (2022), presents a dual impact, facilitating a transition from traditional to contemporary business methodologies. Businesses, irrespective of their nature, are confronted with inherent risks and opportunities, and their survival hinges on the efficacy of systems implemented to capitalize on these opportunities and mitigate deviations (BigThink, 2018). In the realm of auditing, 'internal controls' refer to a suite of predetermined procedures embedded within an organization's operational framework, playing a pivotal role in ensuring organizational goal attainment. The significance of IT systems in fortifying these internal controls, particularly in record-keeping and other internal services, is increasingly being recognized. Instances of internal control lapses leading to detrimental consequences are not uncommon, as highlighted by the situation at the National Pharmaceutical Company of Zimbabwe (Nat Pharm). Reported by The Chronicle Newspapers (2019), Vice President Constantino Chiwenga expressed concern over corruption linked to weak internal controls, impeding access to essential medications for conditions like diabetes and cancer. This corruption, stemming from inadequate control measures such as policy enforcement, internal auditing, and monitoring, has not only compromised the National Pharmaceutical Council of Zimbabwe's performance and financial stability but also facilitated significant financial losses through clandestine import dealings.

BigThink (2018) observes that despite the presence of internal controls within businesses, the persistence of fraudulent activities such as bribery, theft, and fund misappropriation remains a significant concern. Illustrating this, the Independent Commission Against Corruption (ICAC, 2022) reported a case at Hui's Brothers Foreign Exchange Company Limited, where the former branch manager fabricated customer settlements of an unpaid remittance totaling $7.6 million. This incident, occurring between November 23, 2021, and January 4, 2022, went undetected for six months, eventually uncovered by a newly appointed manager. This delay in detection underscores the laxity in internal controls, particularly the absence of robust measures to limit authority and safeguard critical information and financial details. Such lapses in control mechanisms inadvertently facilitated the concealment of fraudulent activities.

Further reinforcing the significance of strong internal controls, Al-Dmour et al. (2017) highlights their impact on the reliability of financial information. Focusing on the role of Information Technology in strengthening internal controls in Jordanian commercial banks, Alberi posits that Accounting Information Systems (AISs) are integral to effective internal control systems in the banking sector. The integration of computers in AISs has enhanced management techniques in these institutions. However, Alberi's study revealed that inadequate internal controls result in financial statements that lack credibility and integrity. This situation is often exacerbated by poor monitoring and evaluation of accounting systems, leading to the production of inaccurate and manipulated financial statements, thereby obscuring the true financial state of the organization. Complementing this perspective, Dayamant and Ferdinal (2019) conducted a study on a financial institution in Jakarta, narrowing their investigation to the impact of internal controls on the quality of information. Despite the implementation of accounting information systems, the study discovered the prevalence of erroneous and inappropriate information within the financial institutions of Jakarta. Dayamant and Ferdinal (2019) concluded that an efficient internal control system is imperative to ensure the accuracy and reliability of information within an organization.

Pindula News (2021) critically examines the challenges faced by Steward Bank, highlighting the bank's contemplation to close certain branches following incidents that cast doubt on their operational viability. The bank's struggles with bribery and poor operational performance were attributed to a weak management function, particularly in the areas of segregation of duties, performance evaluation, and staff rotation. This led to growing concerns among stakeholders regarding the safety of their funds, as the bank demonstrated an inability to effectively oversee its activities. The manipulations of system settings, unauthorized access to bank systems, document fabrication, and system breaches underscored the deficiencies in the bank's internal control system.

Akanbi et al. (2022) emphasizes the pivotal role of the AIS in both the management of an organization and the execution of its internal control system. The study identifies inadequate internal controls as a significant factor contributing to fraudulent activities in many businesses, hindering effective operation and goal achievement. The incorporation of advanced computer systems, offering encryption of critical company information, emerges as a key solution, ensuring access is limited to authorized personnel only. Thakur (2021) further elucidates that companies can bolster their operational performance through IT systems. Consequently, the adaptation of internal control mechanisms to align with the computerization of AIS is crucial for effective control. This adaptation, according to Teru et al. (2017), directly influences operational efficiency and the attainment of organizational objectives, a finding particularly relevant in the contexts that were the focus of their study.

The historical context outlined above serves to contextualize the challenges faced by similar organizations within the same operational environment as the case study. One such example is Nuanetsi Ranch, where the absence of dedicated computers for the Farm Supervisor has led to significant operational challenges. The necessity for the Farm Supervisor to use computers in the accounting department has resulted in the leakage of sensitive financial information and unauthorized data alterations by untrained personnel. Siyelew (2019) highlights the crucial role computers play in businesses, facilitating the collection, management, computation, organization, and visualization of consumer and productivity data through various software programs and online communication tools.

The present study, conducted by the author who was attached to the company for a year, witnessed the dismissal of the Finance Manager of Nuanetsi Ranch Limited in July 2021 and a Graduate Trainee in May 2022. These terminations were a consequence of allegations involving corruption, fraud, misstated financial statements, and concealment of misconduct. The Finance Manager was dismissed for fraudulent activities linked to the absence of segregation of duties and inadequate monitoring and evaluation of senior management's work. Specifically, the Manager was involved in embezzling funds under the guise of purchasing Accounting Application Systems, for which no evidence of purchase was provided. Similarly, in May 2022, a Graduate Trainee was dismissed for presenting misstated financial statements, advocating unauthorized reductions in inventory prices for personal gain, and making unapproved transfer payments. These actions not only affected the company's cash flow and payroll but also went undetected for over two years, leading to irrecoverable financial losses. These incidents at Nuanetsi Ranch underscore the repercussions of weak internal controls within an organization.

At Norman Ranch Limited, the decline in production efficiency and substandard financial performance can be attributed to insufficient evaluations and internal control mechanisms. Kayanda et al. (2017) points out that weaker internal controls, such as excessive manual workload, lead to poor operating performance in organizations.

Additionally, the absence of robust authorization procedures at Norman Ranch raises suspicions of fraudulent activities and corruption. A notable concern is the potential unauthorized transfer of funds by top management, coupled with their engagement in multiple tasks, indicating a lack of segregation of duties. This issue is further evidenced by the high labor turnover experienced since January 2022. The diversion of funds for personal interests by senior managers, due to weak internal controls, has led to a shortage of funds for essential expenses like salaries.

Furthermore, the ranch's remote location, approximately 38 kilometers from the nearest residential area, exacerbates the lack of security measures. The absence of surveillance systems and alarms leaves the broiler production (6000-7000 birds per month) and approximately 5500 layer birds vulnerable to wildlife and theft. During a meeting on December 6, 2021, concerns were raised about the theft of broilers and a decrease in egg production, attributed to theft, as there are no designated warehouses or blast refrigerators for produce storage. The inventory rooms lack proper locks, allowing unrestricted access. Consequently, the subsidiary faces challenges such as theft, physical damage, and deterioration of inventory, leading to inaccurate stocktake figures. Martins et al. (2019) emphasize that effective physical internal controls include surveillance systems, a dedicated security department, proper locks, and secure warehouses. The fraudulent activities and operational shortcomings observed at Norman Ranch Limited are direct manifestations of inadequate internal controls within the organization.

In November 2021, Development Trust of Zimbabwe (DTZ) Norman Ranch Limited implemented the Palladium Premium software, aiming to enhance internal controls in the realm of application controls. The software interconnected various departments-Finance as the central user, Production, and all Managers-each with access limits based on their job grade. Despite this initiative, the lack of regular upgrades has rendered the software below standard, leading to its under-utilization. Consequently, the company continues to rely on manual accounting for significant transactions. This reliance poses challenges in monthly account reconciliation, compromising the reliability of financial statements and making the tracking of inventory and recording of transactions difficult.

The growth of Norman Ranch Limited underscores the need for robust accounting systems. Madhushani and Jayasiri (2021) assert the critical necessity of accounting management for any business, especially to ensure stable cash flow. The ranch faces considerable difficulties in safely storing processed data and converting this data into valuable information. The manual handling of data, encompassing customer accounts and inventories, is not only time-consuming but also inefficient, often resulting in the need to navigate through extensive paperwork to locate specific information. One of the most significant deficiencies at Norman Ranch Limited is the absence of an IT department and an audit committee. This gap severely hampers the establishment of effective cut-off procedures and the development of reliable financial systems. The lack of these key internal controls contributes to the organization's challenges in maintaining accurate and trustworthy financial and operational records.

Norman Ranch Limited faces a significant challenge with the loss of source documents, impeding the continuity of record-keeping due to reliance on manual data entry. This issue has presented auditors with difficulties in gathering quality audit evidence. An audit conducted in July 2021 highlighted the compromised quality of audit evidence, primarily due to the unavailability of essential documentation. The auditors' report emphasized the necessity for enhanced internal controls. Since the revival of the company in 2019, the accumulation of source documents became unmanageable for the accountant, leading to their loss. As the company expanded rapidly, the manual maintenance of source documents and data became increasingly problematic. Dor defines a source document as an original record containing vital details that support or substantiate a transaction. The absence of such documents disrupts the audit trail and results in information loss.

At Norman Ranch Limited, the monitoring of internal controls is hindered by a lack of effective management supervision and review. The company operates with only a graduate accounting trainee and an accounting intern on-site, while the Finance Manager and accounting officers are based at the parent company in Harare, detached from the Ranch's day-to-day activities. Consequently, monitoring and evaluation of performance are inadequate. Furthermore, the lack of proper cash handling protocols has led to a deficiency in accountability. According to Tavingofa (2017), such a scenario creates an environment conducive to the commission and concealment of fraudulent transactions. The company's authorization procedures are also lacking. Currently, authorization is carried out only by the accounting graduate trainee and the farm coordinator or supervisor, deviating from the best practices of involving multiple responsible individuals in the authorization process. BigThink (2018) emphasizes the importance of having a responsible person oversee daily transactions, as stipulated by ISA 220, to improve organizational performance through effective monitoring and evaluation of tasks and processes. The current setup at Norman Ranch Limited, with limited personnel involved in authorization, has led to poor decision-making, adversely affecting productivity and slowing down the company's growth.

Norman Ranch Limited, established and registered under the Companies Ordinances in 1938, was later acquired in 1989 by the late Vice President of Zimbabwe, Dr. Joshua Mqabuko Nkomo, as part of the DTZ, according to Akanbi et al. (2022), in the Sunday Mail. The company, with its subsidiaries, primarily operates in the sectors of agriculture, tourism, and mining. Presently, Norman Ranch Limited oversees activities in other DTZ subsidiaries, including Greencroft Coffee Estates and Zagrinda. Located in the Chibi District, the Ranch engages in diverse ventures like game ranching, cattle ranching, horticulture, and poultry farming. It also maintains joint venture partnerships with agricultural organizations such as Mutirikwi Sugar Company and Zimbabwe Bio Energy, under which cattle and wildlife ranching operations are managed. In recent years, the Norman Ranch Limited has been exploring various projects, including macadamia cultivation, poultry farming, sugar plantations, and solar energy initiatives. However, the rapid growth and expansion have rendered its existing internal control systems ineffective, highlighting the need for enhanced controls to manage the increasing volume of data, transactions, and asset security.

The organization has historically been influenced by political factors, being a quasi-government entity. Issues such as fraud, money extortion, and unqualified management decision-making have impacted its operations. These challenges, coupled with a high rate of corruption and ineffective internal controls, led to the financial downfall of the Trust. From around 2016, Norman Ranch Limited and DTZ Subsidiaries faced significant difficulties due to fraud and money laundering, largely attributed to the absence of robust internal controls. The situation was so dire that the Ranch was on the verge of closure and required intervention, leading to the appointment of a new Board by President Emmerson Dambudzo Mnangagwa in 2019.

Since 2019, under new management, NRL has been undergoing significant changes. A new General Manager was appointed to spearhead organizational development and financial revitalization. The management team, recruited in 2020, has been diligently working to steer the organization back on track. Currently, NRL plays a critical role in the operations of DTZ subsidiaries, supporting them until they can operate independently. The initiation of new projects within the subsidiaries marks a phase of active development. Empirical studies have established a correlation between strong internal controls and investment in technology. This connection has prompted the researchers to undertake the current study, aiming to explore the impact of technological investments on internal control effectiveness within the context of Norman Ranch Limited and its subsidiaries.

2. Research Objective

The primary objective of this research is to explore the impact of Information Technology (IT) on the development of effective internal controls within business organizations, with a particular focus on Norman Ranch Limited. This investigation aims to:

(1) Determine the extent of the relationship between Information Technology and internal controls within the company. This involves assessing how IT systems contribute to the strengthening of internal control mechanisms and evaluating the effectiveness of these systems in mitigating risks associated with business operations.

(2) Examine whether an effective internal control system, bolstered by the integration of IT, contributes positively to organizational performance. This includes analyzing the role of IT in enhancing the reliability of financial reporting, improving operational efficiency, and reducing the incidence of fraud and errors.

By achieving these aims, the study seeks to provide insights into how IT can be leveraged to enhance internal control systems, thereby supporting improved governance and performance in business organizations like Norman Ranch Limited.

3. Methodology

This study employed a mixed research methodology, integrating both qualitative and quantitative approaches. This methodology was chosen to ensure a comprehensive understanding of the research topic by capturing a wide range of perspectives and data types.

Data Collection:

- Interviews: Conducted to gather in-depth qualitative insights. These interviews were structured to extract detailed information about the experiences, opinions, and attitudes of the participants regarding the use of Information Technology in internal controls.
- Questionnaires: Utilized to collect quantitative data. These were designed to quantify the behavior, values, ideologies, and personalities of the participants in relation to the study's objectives. The questionnaires provided a broader overview of the impact of IT on internal controls across a larger sample size.

Data Analysis:

- Linear Regression: This statistical technique was applied to analyze the data collected. Linear regression helped in identifying and quantifying the strength of the relationship between Information Technology and the effectiveness of internal controls. It was instrumental in predicting the influence of IT on organizational performance based on the responses obtained.

Ethical Considerations:

- Independence: Ensured impartiality and objectivity in conducting research and analyzing data.
- Confidentiality: Maintained to protect the identity and responses of participants, safeguarding their personal and professional information.
- Professional Conduct: Adhered to throughout the research process to uphold the integrity and quality of the study.

- Informed Consent: Obtained from all participants, ensuring they were fully aware of the study's purpose and their role in it, and that they participated voluntarily.

4. Results

4.1 Impact of Weak Internal Controls on Financial Performance

Table 1 below shows the impact of the weak internal controls on financial performance.

Table 1. Mean and mode findings: The effect of weak internal controls on financial performance

	Increased Labor Turnover of Employees	**Evident Poor and Late Financial Reporting**	**Level of Education on of Those Using Computers**	**Fraud and Corrupt Acts**	**Absence of Compatible Accounting Packages Usage**
Strongly agree	95	85	60	115	115
Agree	32	60	16	28	40
Neutral	0	0	0	12	0
Disagree	10	6	30	2	2
Strongly disagree	5	4	5	1	1
Total	142	155	111	158	168
Average	3.94444444	4.305556	3.083333	4.388889	4.388889
Standard mean					
Mode	Strongly agree, agree	Strongly agree	Strongly agree, agree	Strongly agree	Strongly agree
	Lack of Sufficient Computers in the Company	**Cumbersome work Causing a Lot of Errors in Data Capturing**	**Use of Archaic Computers in the Organization**	**Absence of Effective Internal Auditing Committee**	
Strongly agree	70	100	75	50	
Agree	44	28	32	28	
Neutral	3	0	3	6	
Disagree	12	14	10	16	
Strongly disagree	5	2	7	4	
Total	134	144	127	104	
Average	3.722222	4	3.527778	2.888889	
	Strongly agree	Strongly agree	Strongly agree	Disagree	

The analysis of responses from 36 participants revealed significant findings regarding the impact of weak internal controls on financial performance:

- Lack of Compatible Accounting Packages: The mean response was 4.38, indicating a strong perception that inadequate accounting packages contribute to decreased financial performance. This aligns with Lutui and Ahokovi (2018), who found that implementing an e-accounting system can enhance financial performance while reducing internal control risks.

- Dearth of Computers: A mean score of 3.722 suggested that the scarcity of computers in the firm negatively affects financial outcomes.

- Fraud and Corruption: Both these factors also recorded a high mean of 4.38, underscoring the significant impact of fraudulent activities and corruption on an organization's financial health. This finding is consistent with Al-Khasawneh (2017) who noted that weak internal controls are conducive to fraud, adversely affecting revenue.

- Cumbersome Work and Errors: A mean score of 4.0 pointed to the need for Norman Limited to enhance its information infrastructure. Al-Khasawneh and Ali Al-Oqool (2019) observed that strong internal controls minimize errors and promote efficiency, thereby improving financial performance.

- Increased Labour Turnover: The mean score of 3.94 correlated with the issue of employee attrition at Norman Limited due to delayed salary payments linked to fraudulent activities. This situation has resulted in decreased revenue and payroll issues. Abdulle et al. (2019) found that ineffective internal controls can diminish staff morale, leading to higher turnover and reduced operating profits.

- Education Levels, Poor Financial Reporting, Use of Archaic Computers, and Absence of Internal Auditors: These factors shared a mean of 3.08, suggesting that there is a need for staff retraining to facilitate the adoption of advanced accounting systems. Additionally, replacing outdated computers with modern ones could significantly enhance the company's accounting capabilities.

Table 2. Increase in labour turnover at Norman Ranch

Respondents	Absence of Compatible Accounting Packages Usage
Strongly agree	23
Agree	10
Neutral	0
Disagree	2
Strongly disagree	1
Total	36

Note: The findings presented in Table 2 are derived from original research conducted specifically for this study.

Analysis of Table 2 provides insight into perceptions regarding the impact of accounting packages on internal controls and financial performance at Norman Ranch:

- High Agreement on Lack of Compatible Accounting Packages: A significant 63.8% of respondents strongly agreed that the lack of compatible accounting packages at Norman Ranch is a major issue. This viewpoint is reinforced by Ahmad and Shbiel (2021), who concluded that accounting information systems are instrumental in improving organizational performance, with management knowledge serving as a vital intermediary. Additionally, 40% concurred, affirming the belief that effective accounting packages are crucial for enhancing internal controls.
- Dissenting Opinions: Despite the majority view, a notable 8.6% of respondents either disagreed or strongly disagreed with the notion that accounting packages directly influence organizational performance. These respondents suggested that factors other than accounting packages might play a more significant role in enhancing the effectiveness of internal controls and, subsequently, financial performance.

The data from Table 2 highlights a predominant consensus on the importance of compatible accounting packages for internal controls, yet also acknowledges the presence of alternative perspectives regarding the drivers of organizational performance at Norman Ranch.

Table 3. Impact of insufficient computers on financial performance at Norman Ranch

	Insufficient Computers in the Company	Percentage
Strongly agree	14	38.9%
Agree	11	30.6%
Neutral	1	2.8%
Disagree	6	16.7%
Strongly disagree	5	13.9%
Total	36	

Table 3 provides insights into the perceptions of respondents regarding the impact of computer availability on the financial performance of Norman Ranch:

- Majority Agreement on Impact of Computer Insufficiency: A combined total of 25 respondents either agreed or strongly agreed that the lack of sufficient computers adversely affects the financial performance of the company. This viewpoint aligns with the assertions of Al-Khasawneh (2022), who advocated for the incorporation of microframes across organizations to facilitate effective communication and enhance financial performance.
- Neutral and Dissenting Views: One respondent remained neutral, indicating a belief that sharing computers might be feasible. However, this stands in contrast to Alawamleh et al. (2021), who noted that shared computer usage can increase the risk of data manipulation and unauthorized changes.
- Counterarguments from Respondents: Interestingly, approximately 11 respondents disagreed with the majority, arguing that the insufficiency of computers does not necessarily lead to poor organizational performance. They suggested that a limited number of computers does not hinder the organization's ability to boost productivity and financial performance.

The data from Table 3 reveals a divergence of opinions among the respondents at Norman Ranch. While a significant number acknowledge the negative impact of insufficient computer resources on financial performance, there is also a notable segment that believes other factors may be more influential in determining the organization's productivity and financial success.

In total, 23 respondents (those who either agree or strongly agree) perceive that the use of outdated machinery is detrimental to the financial performance of Norman Ranch. This finding is consistent with the research of Bello and Baballe (2021), who also identified a negative impact of using old machinery on organizational financial outcomes.

Table 4. Impact of using archaic machinery on financial performance

Responded Opinion	Respondents
Strongly agree	15
Agree	8
Neutral	1
Disagree	5
Strongly disagree	7

Table 4 above shows the impact of using archaic machinery on financial performance. The responses show that most of the participants concurred that archaic machinery has a great influence on financial performance.

4.2 Relationship Between Internal Controls and Information Systems

Table 5. Mean and mode findings on the relationship between internal controls and information systems

	Enhances Fraud Detection	Prevent Fraud from Happening the First Time	Promotes Better and Prompt Financial Reporting	Efficient Monitoring of Transactions	Improves Communication between Departments	Better Control of Data Processing
Strongly agree	115	70	75	80	100	25
Agree	40	64	44	48	36	40
Neutral	6	12	0	6	0	9
Disagreed	2	0	12	12	8	12
Strongly disagree	0	2	4	0	2	12
Total	163	148	135	146	146	98
Average	4.527777778	4.111111111	3.75	4.055555556	4.055555556	2.722222
Average opinion	4.25					
Modal response	Strongly agree	Agree	Strongly agree	Strongly agree	Strongly disagree	Strongly disagree

Table 5 provides an analysis of respondents' perceptions regarding the relationship between internal controls and information systems at Norman Ranch:

- Fraud Detection and Prevention: The mean scores for information systems enhancing fraud detection and preventing fraud occurrence were 4.53 and 4.11 respectively, indicating a strong belief among respondents that information systems play a crucial role in these areas.

- Monitoring of Transactions and Financial Reporting: Scores of 3.75 and 4.06 for efficient monitoring of transactions and improved financial reporting respectively suggest that respondents see information systems as significantly beneficial in these aspects.

- Communication Between Departments: The mean score for this variable was also above the standard, highlighting the perceived importance of information systems in facilitating inter-departmental communication.

- Mode Analysis: The mode for most responses was 5 (strongly agree), indicating a general consensus among participants that information systems and internal controls are closely related and that the former significantly impacts the latter.

- Prevention of Initial Fraud Occurrence: The modal opinion (most frequent response) for the connection between information systems and the initial prevention of fraud was 4 (agree), with 16 respondents supporting this view.

- Data Processing Control Criticism: However, the control of data processing through information systems received critical opinions, with the highest frequencies being 12 and 6 for the mode of 1 (strongly disagree). This indicates skepticism among a significant number of respondents about the capability of information systems to enhance data control and protection.

The findings from Table 5, corroborated by the study of Djalil et al. (2017), suggest that information systems are generally perceived as having a positive impact on the effectiveness of internal controls at Norman Ranch. However, there is notable skepticism regarding their ability to control and protect data processing, indicating areas for further investigation or improvement in the implementation of information systems.

Table 6 focuses on the perceptions of respondents regarding the effectiveness of information systems in enhancing fraud detection at Norman Ranch:

- Strong Belief in Effectiveness: A substantial 91% of respondents (33 individuals) believe that information systems significantly improve fraud detection capabilities. Of these, a majority, constituting 63% (23 respondents), strongly agree with this statement, while 28% (10 respondents) agree. These findings are in line with the research of Aladejebi (2017), who emphasized the necessity of adopting information systems for effective fraud detection in organizations. Similarly, Alhassan (2018), highlighted the role of information systems technology in bridging the gap in fraud detection.

- Neutral and Disagreeing Opinions: Despite the overwhelming agreement, a small proportion of respondents, 6% (2 individuals), remained neutral on this matter. A minimal 3% (one respondent) disagreed with the notion that information systems enhance fraud detection. Notably, there were no respondents who strongly disagreed with this statement.

Table 6. Information systems' role in enhancing fraud detection

	Respondents
Strongly agree	23
Agree	10
Neutral	2
Disagree	1
Strongly disagree	0

The data from Table 6 indicates a strong consensus among the participants that the adoption and implementation of information systems play a crucial role in improving fraud detection mechanisms at Norman Ranch. This overwhelming agreement, supplemented by minimal neutral and disagreeing responses, underscores the perceived value of information systems in combating fraudulent activities within the organization.

Table 7. Information Technology's role in preventing initial fraud occurrence

	Respondents
Strongly agree	16
Agree	16
Neutral	4
Disagree	0
Strongly disagree	2

Table 7 presents the responses regarding the effectiveness of information technology systems in preventing fraud from occurring for the first time at Norman Ranch:

- High Level of Agreement: A significant majority of the respondents, totaling 83% (30 individuals), believe that information technology systems can effectively prevent the initial occurrence of fraud. Within this group, 39% (14 respondents) strongly agree, while 44% (16 respondents) agree with this statement. These findings align with the conclusions of Shen et al. (2020), who emphasized the potential of information technology systems in establishing strong internal controls, including fraud prevention measures.

- Dissenting and Neutral Views: Despite the predominant agreement, the study notes some dissenting opinions. About 6% of respondents (2 individuals) strongly disagreed with the idea that information systems can develop robust internal controls like fraud prevention. Additionally, 11% (4 respondents) remained unsure or neutral on the subject.

The results from Table 7 indicate a general consensus among the majority of respondents that the implementation of information technology systems is a key factor in preventing the occurrence of fraud, especially for the first time. However, the presence of strong disagreements and neutral opinions suggests that there may be varying levels of confidence or understanding regarding the capabilities of such systems in fraud prevention at Norman Ranch.

Table 8. Impact of information systems on prompt and better financial reporting

	Respondents
Strongly agree	15
Agree	11
Neutral	0
Disagree	6
Strongly disagree	2

Table 8 details the responses regarding the influence of information systems on enhancing the speed and quality of financial reporting in organizations:

- Strong Agreement on Improvement: A significant portion of respondents, 44% (16 individuals), strongly agree that information systems facilitate better and quicker financial reporting. An additional 33% (12 respondents) agree with this perspective.

- Neutral and Disagreeing Views: While 6% of the respondents (2 individuals) remained neutral, 17% (6 respondents) disagreed with the idea that information systems improve financial reporting. There were no respondents who strongly disagreed with this statement.

- Support for Enhanced Financial Reporting: Altogether, 78% (28 respondents) concur that the presence of information systems likely leads to more prompt and accurate financial reporting. This majority viewpoint aligns with the findings of Siyelew (2019), who noted that effective internal control systems bolstered by information systems lead to increased accuracy in accounting data and improved information quality.

- Dissenting Opinions: However, 28% of the respondents (8 individuals) disagreed with the assertion that information systems necessarily enhance the quality and timeliness of financial reporting.

The results from Table 8 suggest a strong consensus among the majority of participants that information systems play a critical role in improving the speed and accuracy of financial reporting within organizations. However, the presence of a notable percentage of respondents who disagree with this notion indicates that opinions on the effectiveness of information systems in this regard are not unanimous. This diversity in views underscores the complexity of integrating information systems for financial reporting purposes and the varied experiences and perceptions among employees at different organizational levels.

Table 9. Results of linear correlation analysis between information systems and various internal control factors

	Fraud Detection	**Fraud Prevention**	**Prompt Financial Reporting**	**Efficient Monitoring**	**Communication**	**Data Control**
Is slope non - zero?						
F	425.6	89.94	39.3	52.11	194. 9	0.354
DFn, DFd	1.3	1.3	1.3	1.3	1.3	1.3
P Value	0.5937	0.0025	0.0082	0.0055	0.0008	0.5937
Deviation from horizontal line	Significant	Significant	Significant	Significant	Significant	Not significant
Goodness of fit						
R Square	0.993	0.9677	0.9291	0.9456	0.9848	0.1055
Sy. X	4.721	7.159	9.816	9.156	5.991	14.17

Table 9 provides a linear correlation analysis to evaluate the relationship between information systems and several internal control factors at Norman Ranch:

- Dependent Variables: The analysis focuses on fraud detection, fraud prevention, prompt financial reporting, efficient monitoring, communication, and data control.

- Significance of Slope: The study examines whether the slope of the linear correlation is non-zero (indicative of a significant relationship).

- Statistical Findings:

- F-Value: The F-values for the variables are provided, with data control showing a markedly low value of 0.3540.
- Degrees of Freedom (DFn, DFd): The degrees of freedom for each variable are noted.
- P-Value: Crucial for determining significance; values less than 0.05 indicate significant correlations. Efficient monitoring, communication, fraud prevention, and prompt financial reporting all show P-values below 0.05, denoting significance. In contrast, the P-value for data control is 0.1055, suggesting a lack of significant correlation.
- Deviation from Horizontal Line: This indicates whether the correlation is significant or not. All variables except for data control showed significant deviations.

- Goodness of Fit:

- R Square: Values above 0.5 indicate significant correlations. All dependent variables except for data control enhancement exceed this threshold.
- Sy. X: Standard error values are listed for each variable.

The results indicate a strong correlation between the implementation of information systems and enhancements in fraud detection, fraud prevention, efficient transaction monitoring, communication, and prompt financial reporting at Norman Ranch. This suggests that the adoption of information systems positively impacts these areas of internal control.

However, data control and protection do not show a significant correlation with information technology systems. This indicates that respondents do not perceive information systems as effectively promoting data control and protection, and even see them as potentially increasing unauthorized access and data alterations.

The findings imply that while information systems are crucial for improving several aspects of internal control at Norman Ranch, their role in data control and protection may require further attention or a different approach to ensure effectiveness.

Overall, the study suggests that the adoption of information systems should be promoted at Norman Ranch Limited to strengthen internal controls and enhance financial performance, given the established positive relationships between these systems and several key internal control variables.

4.3 Recommendations on Mitigating Challenges in Implementing Information Systems

Table 10. Recommendations for addressing challenges in information system implementation

Respondents' Opinion	Presence and Commitment of Senior Management During the Architect of the Information System	Presence of the Staff During Implementation of Information System	Continuous Training of Employees to Make Them Compatible with the System and Boost Morale	Employing Qualified Personnel to Improve Separation of Duties	Hiring of Professionals in the Development of Information Systems Structure	Establish a Relationship with the Vendor to Improve Understand Ability of the Systems	Reviewing Other Organizations' Information Systems in the Same Field as the Organization
Strongly agree	90	75	110	5	95	80	100
Agree	24	56	44	8	52	60	32
Neutral	3	3	0	15	0	6	0
Disagree	14	6	6	26	8	4	8
Strongly disagree	4	3	0	15	0	0	4
Total	135	143	160	69	155	155	144
Average mean	3.75	3.972222	4.444444	1.916667	4.305556	4.305556	4
Mode	3.813492						
Opinion	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Strongly agree	Disagree	Strongly agree

Table 10 consolidates the opinions of respondents on potential mitigation strategies for challenges encountered during the implementation of information systems at Norman Ranch Limited. These recommendations align with the findings of Almalki et al. (2017) and are as follows:

- Continuous Employee Training: The highest average mean score of 4.4 suggests that continuous training of employees to familiarize them with the system is crucial. This not only makes them compatible with the new system but also boosts their morale, as agreed upon by the respondents.
- Vendor Relationship and Professional Hiring: Closely following with an average mean of 4.3 is the recommendation to establish a solid relationship with the vendor for better system understanding and the hiring of professionals for the development of the information systems structure.
- Review of Other Organizations' Systems: An average mean of exactly 4.0 was observed for the strategy of reviewing information systems used by other organizations in the same field. This indicates that learning from the experiences of similar entities is seen as a key approach.
- Acknowledgment of Staff During Implementation: The respondents agreed, with an average mean of 3.9, that acknowledging and involving staff during the implementation of the information system is significant.
- Senior Management's Involvement: An average mean of 3.7 supports the idea that the presence and commitment of senior management during the design and implementation phases are essential in addressing challenges.
- Qualified Personnel for Separation of Duties: Interestingly, a low average mean of 1.94 was assigned to employing qualified personnel to improve the separation of duties. This indicates a general belief among respondents that merely increasing staff numbers does not necessarily resolve challenges associated with system implementation.

These recommendations collectively highlight the importance of comprehensive planning, continuous training, active involvement of both management and staff, and learning from industry practices in mitigating challenges that arise during the implementation of information systems. The focus seems to be on enhancing human interaction with the technology rather than solely relying on increased staffing for effective system implementation at Norman Ranch Limited.

5. Conclusions

The findings of this study unequivocally demonstrate that weak internal controls, particularly the absence of advanced information technology, lead to significant challenges in organizational operations. Cumbersome paperwork, exacerbated by outdated or inadequate technological support, results in errors that detrimentally affect the financial performance of organizations. This is particularly evident in the context of Zimbabwean organizations, where the lack of efficient information detection and prevention systems has allowed fraudulent activities and corrupt practices to proliferate largely undetected.

A key revelation of this research is the positive correlation between information technology systems and the detection and prevention of fraud. The data clearly indicates that information technology systems significantly enhance an organization's ability to identify and mitigate fraudulent activities. This effectiveness is reflected across various parameters, as evidenced by the significant relationships established between information systems and several factors related to internal controls and fraud prevention.

However, a notable exception in this pattern was observed in the area of data processing control. The study found no significant relationship between the implementation of information systems and the improvement of data processing control. This suggests that while information technology systems are effective in several areas of internal control, their role in data processing control may not be as impactful or may require different approaches for effective management.

In conclusion, the adoption and effective implementation of information technology systems are crucial for enhancing the efficacy of internal controls in organizations. By strengthening these systems, organizations can significantly improve their capabilities in detecting and preventing fraud, thus safeguarding their financial health and operational integrity. However, it is important to recognize the limitations and challenges in certain areas, like data processing control, where additional strategies and solutions may be necessary to achieve desired outcomes.

Data Availability

The data used to support the research findings are available from the corresponding author upon request.

Acknowledgements

This article has been extracted from a dissertation submitted to Midlands State University by Yolanda Sandu.

Conflicts of Interest

The authors declare no conflict of interest.

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