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Effective Internal Control Strategies for an Enterprise Resource Planning System

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This is to certify that the doctoral study by

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Walden University
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Abstract

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By

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MS, Walden University, 2016

BS, University of Memphis, 2014

Doctoral Study Submitted in Partial Fulfillment

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Abstract

The lack of effective internal control over enterprise resource planning (ERP) increases risks associated with financial reporting and erroneous transactions. Business leaders who develop effective enterprise resource planning internal controls reduce the risk of fraud and improve the quality of financial reporting. Grounded in the COSO internal control framework, the purpose of this qualitative single case study was to explore strategies business leaders use for adequate internal controls. The participants were seven business leaders from a single business in Mississippi, the USA, who successfully employed enterprise resource planning and internal control strategies. Data were collected using semistructured interviews, observations, and a review of internal documents. Using Yin's five-step thematic analysis process, three themes emerged, including internal control strategies, overcoming barriers to implementing internal control strategies, and addressing key internal control challenges. A key internal control recommendation is to routinely review role-based access controls to ascertain appropriate access to transactions. The implication for positive social change includes the potential to help a firm improve the social and cultural well-being of the community, leading to consistent employment opportunities.

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Dedication

I dedicate this study to late my grandmother and late father, Alice and Bobby Lowe. My grandmother always encouraged me to be honest, and always be the best me. My father instilled in me a passion for education. He was a teacher and through his work, he shows me the true meaning of hard work. You will never know how much I have truly learned from you. I was blessed to be raised by such caring and responsible parents. I want to honor my mother Jacqueline McCloud who has always demonstrated what it means to be selfless, hardworking, and compassionate even when it hurts. The best part of me is because of you.

To my husband, Marcus, my love, and friend of 13 long years. Pursuing a doctorate in business has been an amazing journey of ups and downs. There have been sleepless nights, the career transitions for me. This accomplishment would not hold the same depth of meaning without you by my side. I love you now and always.

To my daughter, Aaliyah – the reason why I kept going. This is for you. I want you to have a better life than I had and pray that you understand about having a great education. I love you now and always.

To my sisters, extended family, and closest sister-friend over the years, nothing is greater than the love and compassion that family provides unconditionally. Thank you for allowing me to exist in a space of grace as my attempts to balance the time needed for my study and to participate in life around me were not always successful. I am grateful for many things, but the greatest of all things is love.

Acknowledgments

First, I would like to thank God for being with me and for helping me throughout this amazing journey. I would like to thank my chair, Dr. Roger Mayer for his support, and understanding, for challenging me to make a difference with this research, and for consistent showings of faith in me throughout this journey. I would like to thank Dr. Deborah Nattress, my 2nd chair for her support and contribution to enhancing this research study, and Dr. David Moody for his valuable contribution as URR.

I would like to thank my family and friends who provided love, support, and encouragement to stay on course throughout this challenging academic journey. I would also like to thank the various classmates with whom I have shared the virtual classroom. Finally, I would like to thank those who participated in the study. I am forever as grateful as I am humbled.

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Section 1: Foundation of the Study

Businesses have seen advances in accounting information systems that improve operations, reduce errors, and enhance productivity (Jasim & Raewf, 2020). Recent advancements in accounting information systems are the enterprise resource planning (ERP) system that integrates accounting and business functions and allows for real-time processing and information generation (Trunina et al., 2018). Management information technologies are an integral part of an organization's risk management strategy (Vovchenko et al., 2017). With the implementation of an ERP system, risk managers have the opportunity to enhance internal controls (Elbardan et al., 2016).

Background of the Problem

Financial institutions and organizations have been at the forefront of adopting strategies to prevent fraud. One of the measures that can be used to achieve this milestone is data-driven auditing (Singh et al., 2019). According to Chen et al. (2016), external monitoring can play an instrumental role in preventing financial fraud within business organizations. ERP systems, databases, and the internet are the new form of organizing operations that will integrate activity types and control them in real-time (Trunina et al., 2018). Despite the large volume of research on ERP systems, the impact of ERP systems implementation on the internal control system and subsequently on the IAF remains poorly understood. ERP systems are built from interdependent modules, and their business risks and audit risks significantly differ from traditional computer systems (Privitera & Ahlgrim-Delzell, 2018). External monitoring involves coordinated efforts with key stakeholders to develop a robust anti-fraud system. Financial organizations focused on developing plans for fraud prevention are likely to experience an increase in operations. When a business uses an external monitoring technique, it prevents financial resource loss (Chen et al., 2016). Internal audits are also instrumental in business operations, preventing possible financial fraud (Yigzaw et al., 2017). In this study, I explored the effective internal control strategies for business leaders' ERP systems to reduce risk reporting and erroneous transactions.

Problem Statement

Without an effective internal control strategy, the implementation of an ERP system is a source of risk exposure to an organization (Messabia et al., 2020). According to Eker and Eker (2018), there is a significant positive correlation between financial reporting quality and ERP-internal controls ($\beta = .495$; $t = 6.836$, $p = .000$). The general business problem was without an active internal control structure in an ERP system, organizations are susceptible to fraudulent and erroneous transactions and reporting. The specific business problem was that some business leaders lack effective internal control strategies for ERP systems to reduce risks from reporting and erroneous transactions.

Purpose Statement

In this study, I explored effective internal control strategies for ERP systems business leaders use to reduce risks from reporting and erroneous transactions. The target population for this study included seven participants at one business in Mississippi who have successfully implemented effective internal control strategies for their ERP systems. The positive social change implication is that the resident’s benefit may be enhanced community stability where employment opportunities increase, thereby increasing the betterment of the community.

Nature of the Study

There are three types of studies: quantitative, qualitative, and mixed studies. Quantitative researchers use statistical data collection techniques to measure variables and test hypotheses about variables' relationships or groups' differences (Zyphur & Pierides, 2019). Qualitative researchers use semistructured interviews to understand the meaning of a phenomenon (Yin, 2018). Mixed-method researchers use qualitative and quantitative methods in the same study (Sahin & Öztürk, 2019). I chose a qualitative method for this study.

Principal qualitative research designs include phenomenology, ethnography, and case study (Goldman et al., 2015). Researchers use a phenomenological design to explore participants' lived experiences (Yin, 2018). My goal was not to explore the lived experiences of participants. Thus, a phenomenological design was not suitable. Researchers use ethnography to explore the characteristics of an intact culture (Dhar, 2014). The ethnographic design is inappropriate for my study as I was not exploring a cultural phenomenon. Researchers use a case study design defined by Yin (2018) as a detailed exploration using multiple data collection techniques to explore a bounded system in its place and time (Marshall & Rossman, 2016). I selected a single case study design to gather and gained in-depth knowledge and rich data to explore a bounded system in its natural setting. A single case study is appropriate when the researcher is interested in a concentrated holistic understanding of a single unit (Gaya & Smith, 2016).

Research Question

What effective internal control strategies for ERP systems do business leaders use to reduce risk reporting and erroneous transactions?

Interview Questions

1. What internal control strategies for your ERP system did you use to reduce fraudulent reporting and erroneous transaction risks?
2. What key barriers to implementing your internal control strategies for your ERP system did you encounter to reduce fraudulent reporting and erroneous transaction risks?
3. How did you address the key challenges to implementing your strategies for internal controls for your ERP system to reduce fraudulent reporting and erroneous transaction risks?
4. How have you measured the effectiveness of your ERP internal control strategies for fraudulent reporting and erroneous transaction risks?
5. How has your organization used internal controls processes, from the strategies to monitor activity to fraudulent reporting and erroneous transaction risks in your ERP system?
6. What additional information can you provide about your internal control strategies in your ERP systems to mitigate reporting and erroneous transaction risks?

Conceptual Framework

In 1994, the Committee of Sponsoring Organizations of the Treadway Commission (COSO) developed a model for evaluating internal controls (COSO, 2017). Business leaders use the COSO framework to develop effective internal controls (Moeller, 2014). Business leaders use the COSO model for guidance when developing internal controls to achieve organizational objectives. According to Altheebeh and Sulaiman (2016), the COSO model encompasses (a) control environment, (b) risk assessment, (c) control activities, (d) information and communication, and (e) monitoring. The foundation of internal sound controls within an organization includes leadership, shared values, and a culture that emphasizes accountability. I expected the COSO model to be appropriate for this study as the model contains holistic and functional components applicable to the development of ERP system internal controls.

Operational Definitions

Accountability: An organization or an individual who shows or accepts the responsibility of engaging in specific activities or processes and remaining transparent when disclosing the results (Fernandes et al., 2018).

Enterprise resource planning (ERP): A software system used to unify data and business processes, including accounting and finance, HR, management, customer relationship management, and supply chain management (Moldof, 2015).

Fraudulent reporting: An act where management or an individual intentionally misrepresents financial statements to give a false impression to the investors about a company's performance (Moeller, 2014).

Integrated framework principles: A tool used to manage data movement between applications and organizations and contains important standards in the integration policies and their acceptance in the organization (Binder, 2016).

Internal control: internal controls are mechanisms, procedures, and rules that a firm will adopt and implement to allow for the integration of accounting and financial activities to prevent fraud and promote accountability (Rodgers et al., 2015).

Assumptions, Limitations, and Delimitations

Assumptions

An assumption is an assertion accepted as truthful (Johnson, 2015). The following assumptions impacted this study. The first assumption was that effective internal controls reduce the risk of fraud or errors. The second assumption was that participants would provide honest answers. The last assumption was that a qualitative single case study is appropriate for exploring the research question.

Limitations

Yin (2018) described limitations as the characteristics of a research design or methodology outside researchers' control. Researchers must pay attention to existing limitations and consider them in their research design (Clark & Vealé, 2018). The first limitation was of this study is that participants can withdraw at any point in the study. Second, the results of this study were limited by the honesty and thoroughness of participants ‘responses. Third, the participants ‘changes in technology may affect the implementation of internal controls in an ERP system. The last limitation was the results might be limited by the participants’ knowledge of the subject.

Delimitations

Delimitations are choices that researchers made to frame study boundaries (Theofanidis & Fountouki, 2018). Delimitations of this multiple case study involved the geographic location, sample size, and sample group. I studied business leaders in Mississippi. I restricted the participants from a single business that may impact my results. The selected participants have the same approaches and face similar challenges. The adoption of the ERP systems and internal control will solely depend on internal factors in the business. Thus, the selection criteria affect the pattern, trend, and type of information acquired in the business. The delimitations provide areas for potential future research identified in Section 3 of this study.

Significance of the Study

Contribution to Business Practice

Small business owners and managers may benefit from the results of this study by understanding the relationship or the lack of relationship between an internal control system, segregation of duties, and attitude toward internal control. Business leaders could benefit from the study results by increasing their understanding of internal controls ERP systems. This study could benefit business leaders by informing them on how to realign their internal controls best and help create an effective ERP system. A framework of internal controls could improve accountability and profitability by reducing fraudulent reporting and erroneous transaction risks.

Implications for Social Change

The results and findings of this study could benefit society by adding to the strategies that business leaders can use to detect and prevent fraudulent reporting and erroneous transaction risks. The successful involvement of the business leaders might contribute to the effectiveness of handling the internal controls (Brucker & Rebele, 2014; Chen et al., 2016; Kulikova & Satdarova, 2016). When an organization has strong internal controls, it may increase the business's success and improve the surrounding community's economic well-being; business leaders who develop effective internal controls could improve communities' social and cultural well-being by providing consistent employment opportunities. Consistent employment opportunities enhance the stability of local communities by empowering residents to focus on community betterment (Brown & Baker, 2019).

A Review of the Professional and Academic Literature

A literature review is a systematic analysis of prior research on the subject. The literary works audit survey papers, journals, and other appropriate publications for a specific research topic. The preceding work needs to be enumerated, defined, summarized, critically assessed, and explained. A literature review comprises theoretical and methodological presentations toward a specific topic of study. The purpose of a literature review is to survey literature, synthesize information, critically analyze information, and present literal material in an organized manner (Nakano & Muniz, 2018). Mock et al. (2016) referred to the literature review as an essential topic of study.

Readers can use a well-developed literature review to gain a firm understanding of the research topic, providing a starting point for new ideas and recommendations.

Effective internal control systems in business can reduce the risks of fraudulent reporting and erroneous transactions, hindering the achievement of ERP business objectives. My approach in this literature review was to report varied research perspectives from an ERP internal control lens. The research findings are significant as they provide insight to business management on how to mold their internal control environment to better ERP performance.

I searched for recent literature references published within the last five years of my expected graduation. I searched for relevant articles from repositories, including ProQuest, EBSCOhost, business websites, Emerald Journals, Walden University Thesis, Dissertation Collection Sage Journals, and Google Scholar. Search terms included COSO, internal controls, ERP, enterprise risk planning, and financial statement quality. The primary source of information is peer-reviewed articles relevant to the topic, constituting 95% of the total review. In comparison, 5% of the sources were from books and Walden University Thesis and Dissertation collection.

I conducted a critical analysis of literature related to ERP internal control functions. In this literature review, I explain scholarly contributions to the conceptual framework. The literature review structure starts with reviewing my conceptual framework and then alternative theories to the conceptual framework. In this case, I relied on the trends, patterns, and assertions made from previous studies about ERP internal control from articles, books, research papers, and peer-reviewed journals.

The COSO Framework

The COSO framework was introduced by the Committee of Sponsoring Organizations of the Treadway Commission in 1992 as a standard framework for evaluating internal function (COSO, 2017). COSO (2017) described an internal control as a process effected by an entity's board of directors, management, and other personnel, designed to provide reasonable assurance of achieving objectives in an organization. According to Vovchenko et al. (2017), auditors use the COSO internal control framework to focus on the effectiveness and efficiency of internal operations, integrity and transparency of financial reporting, and policy and procedure compliance standards. COSO (2017) acknowledges that developing an 'optimal fit' internal control system can be challenging. Thus, there is a need to evaluate and assess the internal operations and aspects of the organization while adhering to an outlined compliance standard.

Organization leaders use the COSO internal control framework to achieve a standard of enhancing their internal control system (COSO, 2017). Due to the various changes occurring in the business environment and the need to equip businesses with robust strategies to respond to the changes, COSO updated its model in 2013 (COSO, 2017). According to Länsiluoto et al. (2016), COSO model updates share the same framework and are mutually compatible. Organization management experienced many gaps in their operations, creating opportunities for fraud and errors in financial systems (COSO, 2017). Organization leaders use the implemented internal control changes in achieving transparency and accountability of systems to ensure that businesses achieved objectives and mitigated risks to an acceptable levels. By including a system of guidelines and requirements for organizations to follow, COSO introduced a practical approach to internal control that is responsive to changes in the business environment (COSO, 2017).

The updated model applies a principle-based approach centered on the various dimensions of internal control, expanding the need for internal control in financial and nonfinancial operations (COSO, 2017). While the traditional model focused on external reporting, the updated model provides clearer guidelines to support reporting in both external and internal financial and nonfinancial reporting. COSO expanded its reporting capacity with the updated model to cover the broader spectrum of business activities involved in the internal control system. Länsiluoto et al. (2016) stated that the model emphasized the importance of technology in challenging complex business changes and improving control over internal control tools.

The COSO model enhances the governance concepts by encouraging the use of judgment and decision-making by the various organizational managers in internal control strategies (Länsiluoto et al., 2016). Organizational managers, including the board of directors and other managers, are designated to design, implement, and regulate internal control structures. According to Martin et al. (2014), the COSO model's guiding principle is for leadership to demonstrate a commitment to integrity and ethical conduct.

Monitoring is a critical element of an internal control strategy. Thus, effectiveness should be monitored using continuous and separate evaluations to ensure that all internal control elements are functioning as expected (Murphy & Free, 2016). COSO's control activities include an internal control system. Länsiluoto et al. (2016) stated that the model emphasized the importance of technology in challenging complex business changes and improving control over internal control tools.

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There are recent enhancements to the COSO framework. In a 2017 COSO update, the report covered the development of managing risks and the necessity for companies to enhance their risk-management strategy to keep up with the changing economic environment's requirements. The new information emphasizes the significance of taking risk into account throughout the strategy-setting phase and while driving ability. COSO released new guidelines towards the end of 2020, "Risk Appetite–Critical to Achievement," to assist boards, executive officers, and management staff in acknowledging how an improved comprehension and information exchange of risk appetite might aid their companies to grow. The guideline focuses on how companies could perhaps encourage risk appetite as an essential form of decision-making. Risk appetite is linked to goals and plans, and appetite is used as a component of managing the company for performance regarding the abundance of risk that the company is prepared to accept. It's important to highlight in the report that a company's risk appetite should be adaptable enough to keep up with changing circumstances. It is easier to accept the transformation and be more flexible in difficult situations when one anticipates and understands one's risk.

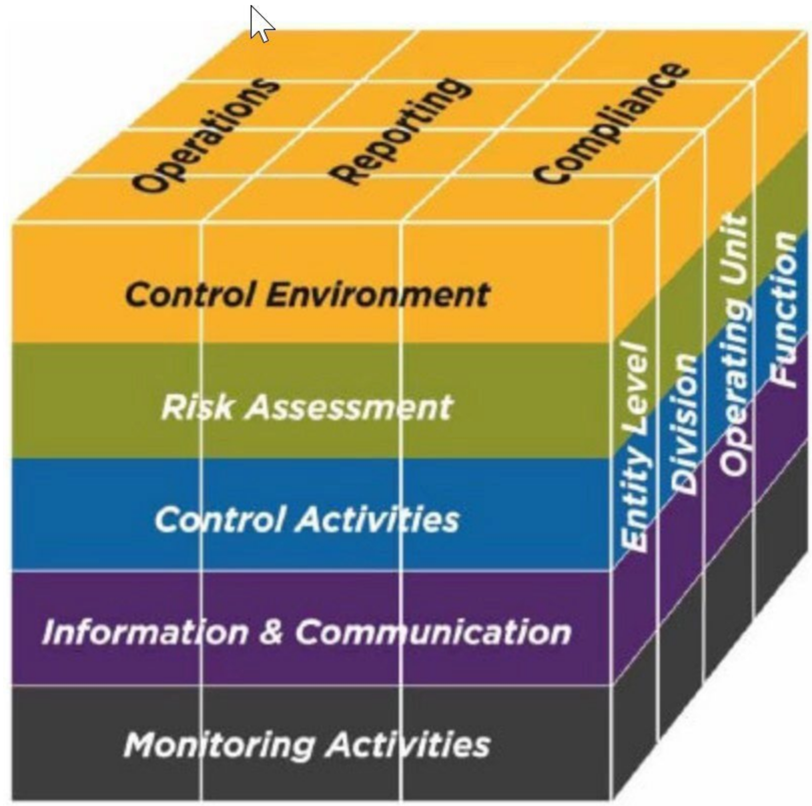
Managers use the COSO framework to develop a control system within an organization. According to COSO (2017), the internal control system is the heart of the firm; the purpose of internal controls is to provide life to multiple aspects of the business. COSO outlines internal awareness and expertise among management as the underlying factors behind the internal control. The use of the COSO framework creates insights into areas in which management should aim to build internal awareness and control the internal control tools. Davis et al. (2017) suggested that the framework provides management and the board of directors with a principle-based approach to internal control. COSO is appropriate for any organization as its. The framework provides a criterion for the executive management to identify and analyze risks, leverage opportunities in the business environment, and allow for more accountability and transparency of financial systems (Machado et al., 2017).

Integrated Framework Principles

Committee of Sponsoring Organizations (2013) framework helps organizations achieve a reliable, timely, transparent, and professional financial reporting system that adheres to organizational and international reporting standards. COSO presents the internal control framework as a cube model with three central dimensions: operations, reporting, and compliance (see Figure 1). Internal controls are a part of the integrated system involving the three dimensions (COSO, 2017). According to Rae et al. (2017), the framework provides organization leaders support towards achieving organizational goals. Reporting objectives are the quality of financial reporting, both internal and external (Rae et al., 2017). Compliance objectives relate to an organization's ability to conform to the laws and regulations it is subject to (COSO, 2017). By setting a platform for better performance, efficiency, and professionalism, an organization can adhere to stipulated rules and regulations.

Figure 1

The COSO Cube



COSO. (2017). An integrated framework of the COSO cube.

The COSO model defines the different functions and levels within organizations that the internal control function seeks to protect. According to COSO (2017), the entity-level signifies internal control that influences the entire organization. Machado et al. (2017) stated that the control tools emphasize creating and maintaining a good culture within the entire organization. Organizations implement entity-level controls to influence actions and decision-making throughout the organization to improve the internal environment's quality (COSO, 2017). The goal of entity-level internal controls is to standardize internal controls throughout the organization.

The next level of control is at the divisional level. COSO (2017) stated that some internal controls must reflect unique environmental issues within divisional levels. Depending on the organization's structure, some controls are specific to only certain divisions (Davis et al., 2017). The coverage area extends beyond the physical areas of operation to include the various focused activities in which an operating unit is engaged. Each operation unit requires specific designs and internal control tools to generate optimal results (Machado et al., 2017). Therefore, management must decide on the design, implementation, and monitoring of internal controls at operational levels. The final area of coverage is the functional level (Machado et al., 2017). An organization includes various functional units, each bringing a unique contribution to the overall performance. Management must determine the optimal fit internal control approach to enhance functional units' performance within the organization.

The final two elements of the organizational structure include operating unit and function. Operational objectives are concerned with the effectiveness and efficiency of organizational operations, including production, financial performance, and asset management (Rose et al., 2015). Functional operations with an organization require specific controls (Frazer, 2016). Management develops controls for various operations and functions based on the unique activities of the department or workgroup. Examples of controls include segregation of duties, authorization, and physical controls (Kamaruddin & Ramli, 2017). An organization's policies and procedures reflect the operation of these internal controls (COSO, 2017). The controls become a part of the components of the COSO model.

The Five Components of the COSO model

An effective control system encompasses five key components. These five components of internal controls embedded in the COSO cube (see Figure 1) include the control environment, risk assessment, information and communication, and monitoring activities (COSO, 2017). According to COSO (2017), an effective system of control must be operational. All the components of internal control must be present. To be termed ‘present,’ the internal control component must be incorporated into the internal control system's design and implementation (Davis et al., 2017). To be termed *operational*, the component must be realized as part of the system and continue to exist as part of its internal control system. For management to define the internal control system as effective, the five components must work together on an integrative basis.

The system is not effective if an individual component is not functioning. All components must complement one another in an integrative manner to help build an effective internal control system (COSO, 2017). A deficiency existing in any component of the internal control system can contribute to the entire system's inefficiency, thus impeding the achievement of internal control objectives. According to COSO (2017), a deficiency occurs when management concludes that an objective has not been achieved due to a missing or non-functional component. Thus, managers must critically assess each component of the COSO model

The five components work together to establish a robust internal control function for the organization (COSO, 2017). The COSO framework corresponds with this research's objectives. The model guides business managers to optimize their internal control functions to ensure more efficient operations using the ERP model (Rae et al., 2017). The control environment refers to the structures, procedures, and processes that define its internal control (COSO, 2017). The acting board of directors and executive management set the internal control function's tone by defining employees' expected standards and requirements (Li et al., 2015). Management strengthens the expectations of the executives in the various functional levels of the enterprise. The control environment defines the management philosophy and operating style adopted to run the organization (King, 2016).

Control Environment

The control environment plays a significant role in shaping the internal control function. Internal controls frame the ethical conduct and values that define the organization's interactions and behavior (COSO, 2017). In addition, the control environment consists of the parameters that assist the executive management and board of directors in overseeing their responsibilities and defines the internal structure on which authority and responsibilities are defined (King, 2016). The control environment outcome has a pervasive impact on the internal control system as it helps create efficiency, favorable work environments, and rigor around productivity measures.

Risk Assessment

Risk assessment refers to internal control involved in evaluating potential risks to an organization due to performance activities (COSO, 2017). Risks are influences or events whose occurrence leads to potential losses within an organization. Risks can occur from the internal or external organizational environment, warranting the need to develop strong risk assessment measures to identify and prevent potential risks (Moeller, 2014). Primarily, risk management is an internal control that defines how an organization manages risks (Li et al., 2015). As a precondition, risk management involves setting objectives, which an organization links to various levels within the entity. The objectives are defined at the management level against different categories, including operations, reporting, and compliance, to ensure they specifically address the organization's various activities (Feng et al., 2015). Management's responsibility is to review the set objectives and gauge their suitability for the organization. Management then determines appropriate activities to help achieve the specific objectives and evaluate possible risk management changes. Management must ensure that the risk management strategies do not create inefficiency in the internal control function (Akinleye & Kolawole, 2020). Risk assessment helps identify the various risks impeding achieving an optimal internal function and creates opportunities for improved efficiency and control.

Control Activities

The control activities refer to the actions developed through policies and procedures and contribute to the mitigation of organizational risks that undermine the achievement of objectives. According to Light (2014), control activities ensure that organizations identify and mitigate errors and biases in financial reporting. Light (2014) states that control activities can either be preventative or directive. Preventive activities are programmed to prevent the occurrence of future events that may expose an organization to loss. Furthermore, directive activities evaluate and monitor processes that identify occurring events that require management to take corrective measures (Light, 2014).

Management identifies and implements standard control activities over technology to help achieve organizational objectives at acceptable levels. The policies are established to define the expectations and procedures that stimulate policies to work. The control activities are implemented at all levels of the organizations to influence a more coherent internal control system. The COSO framework depends on management decision-making and judgment to design and implement control activities that benefit the organization at minimal costs (Boyle & Applegate, 2016). To ensure the efficiency and effectiveness of the control activities, implemented activities must be cost-effective and based on the probability and impact of the risks involved (Länsiluoto et al., 2016). In addition, the application of activities should be applied in modality since too much control could interfere negatively with productivity. According to Feng et al. (2015), some of the most used control activities include verification, reconciliation, physical security of assets, training and development, performance planning, and evaluation and authorization.

Information and Communication

The fourth component of the COSO model is information and communication. Information and communication systems generate relevant and quality data to support the functioning of the internal function's different components (COSO, 2017). Furthermore, the information and communication systems ensure that an organization communicates with external stakeholders on issues affecting the functioning of the internal control system (Boyle & Applegate, 2016).

Monitoring Activities

Monitoring activities is the fifth component of the COSO model. Monitoring activities define the strategies adopted by an organization to assess internal control systems' quality over time (COSO, 2017). Internal control is affected by changes in the organizational environment, constantly creating inadequacies in the control system. Monitoring activities act as a basis for strengthening and understanding factors influencing different internal control strategies (Pett et al., 2015). The monitoring activities can determine the effectiveness and efficiency of implemented controls to protect the organization from fraud and errors (Länsiluoto et al., 2016). To maintain up-to-date activities and operations, organizations monitor activities that identify weaknesses and create opportunities for improvements. According to Dorsey (2015), monitoring activities should be systematic and allow for change opportunities.

Transitioning into the COSO Framework

COSO (2017) outlined that an internal control system is only effective if the various components are present and functional. An organization must be involved in an effective collaborative change management process to achieve functional internal controls. The following framework outlines the five steps of transitioning into the COSO internal control framework that adds value to the organizations at the most cost-effective level.

The first step of the transitioning process is building knowledge by developing internal awareness, expertise, and alignment. Developing awareness, expertise, and alignment occurs by understanding how the COSO model applies to an organization (COSO, 2017). According to COSO (2017), the second step is to conduct a preliminary impact assessment to understand how the transition will affect the organization. According to Dorsey (2015), in this stage, it is essential to consider the ability of management to design and implement organizational fit control systems and the ability of the organization to adapt. Management should map the current internal control system against the updated COSO model (COSO, 2017). The assessment allows management to understand what needs to be done to achieve the updated COSO control framework.

The third step is to enhance a broad awareness, training, and comprehensive assessment. The third step is critical as it communicates the vision of the employees' transition to avoid resistance (Babkin et al., 2017). The employees are educated on the COSO framework's skills and methods to empower them into the transitioning process. The employees are also coached and mentored on the right behavior and attitudes to support the transitioning process. The ethical and compliance conduct framework should be present and functioning to support management awareness and training efforts (Länsiluoto et al., 2016).

The fourth stage of the transitioning process involves developing and implementing appropriate internal controls (Länsiluoto et al., 2016). Building knowledge and awareness in previous stages act as a foundation for the organization to embrace the transition. Implementing the COSO transition plan sees the various components of the framework integrated into the internal control system. The system of internal control is updated to encompass the various components at a functional level. The organization sets realistic objectives that align with the business strategy (COSO, 2017). The various activities involved in the implementation stage include documentation, validation testing, gap remediation throughout the project's life cycle, and external review and testing to assess adopted methods' effectiveness.

The final stage is to drive continuous improvement in the adoption of the COSO framework. Ensure continuous improvement is essential in ensuring that the appropriate ethical tone is at the top. The model's effectiveness requires management to adjust internal tools and processes to create an optimal fit system of internal control (King, 2016). Therefore, the framework's effectiveness through time rests on continuous improvement by management to adapt to the business's changes and requirements (COSO, 2017). Responsibility for internal control is a part of the fabric of the company’s culture, business processes, and procedures. This way, the internal control becomes the entire organization's responsibility for more sustainability (Länsiluoto et al., 2016). Management must also ensure continuous communication and reporting on the performance of the framework. Continuous reporting and communication help inform stakeholders of the model's strengths and weaknesses, creating opportunities for an informed approach to improvements (King, 2016).

Strengths and Weaknesses of the COSO Model

The COSO model has gained a high level of acceptance and applicability in organizations. In their review, Pett et al. (2015) stated that the COSO model is a leading framework for designing, implementing, and coordinating internal controls. According to Babkin et al. (2017), the model is flexible and allows an organization to mitigate risks at reasonable levels and facilitate efficient decision-making and leadership. King (2016) stated that the COSO model allows organizations to report their financial information in conformance to relevant laws, regulations, and acceptable standards. King stated that the model highly involves management decision-making, planning, and judgment, allowing management and the board of directors to control the processes (King, 2016).

Limitations may impede the full applicability of the COSO model. According to Länsiluoto et al. (2016), the COSO framework heavily depends on human judgment, which is vulnerable to bias and processing errors that may lead to poor judgment. The COSO model depends on judgment to design, implement, monitor, and control for more effectiveness. Weaknesses in human cognitive processing can therefore lead to risks in internal control. According to Kaya (2018), several organizations have also termed the model to be too complex. For the model to be effective, management must apply judgment to help develop suitable objectives that fit a specific organization.

Based on Länsiluoto et al. (2016), management's ability to handle internal control responsibility is affected by poor judgment or decision-making and external factors.

Company risk assessment research is currently centered on the executive board and senior management's function throughout the development and implementation of risk mitigation systems that define, evaluate, handle, and track risks that impact the company. In keeping with these standards and the ERM concept of COSO, the company and executive leadership assume a leading function at the organization's tier. Focusing on the governing board's position and leadership is an essential component of current advancements in risk regulation and an effective catalyst for analysis into the function of directors and executives in ERM implementation and firm financial condition (Tavakoli et al., 2016).

Reporting of intelligence levels for ERM modules was achieved utilizing the functionality configuration Model methodology. ERM is a system addressed, developed, and implemented by individuals, and the human resource system drives its success (COSO, 2017). Factors such as misguided cultural assumptions and fiscal pressures can cause an ERM system to fail (Agarwal & Ansell, 2016).

Alternative Theories

To appropriately frame my research study, I also considered alternative theoretical frameworks. In this section, I consider two additional conceptual frameworks. The first framework is systems theory, as developed by von Bertalanffy. I considered the second framework is the compliance objectives and related technologies (COBIT) model containing best practices for internal controls over information systems.

Systems Theory

Systems theory is a multidisciplinary approach that allows researchers to evaluate phenomena from a holistic perspective. Systems theory is based on the presumption that phenomena are best understood by looking at the broader picture. Tops et al. (2014) suggested that systems do not exist in isolation, meaning interdependence exists between systems. Building on the COSO framework, von Bertalanffy developed systems theory, suggesting that any system is complex with different elements (von Bertalanffy, 1972). Knowledge about a system is built by understanding how the interconnected parts contribute to the whole system's functioning (Länsiluoto et al., 2016).

System theorists focus on the interconnectivity of complex elements. According to systems theorists, all system elements are rationally connected and complement one another to build an optimally functioning system (Tops et al., 2014). Under this vision, internal control is a system involving the interaction of a variety of components. In systems theory, the critical components, interdependency, relationships, and objectives comprise a system integral to the operation of the firm, which culminates in its overall odjectives (Hughes et al., 2015). Each component of the internal control system works to create value in its capacity, thereby leading to a more efficient internal control system (Tops et al., 2014).

The systemic thinking conception of the internal control function aligns with the COSO model, as both emphasize the need to improve individual components' performance for the entire system to work (Alles et al., 2006). From both perspectives, the internal control system involves interacting with various components whose value and contribution enhance internal processes for better ERP management in business organizations. Structures can also be open or closed. Available organizations share information, resources, or services within their ecosystems, while secure facilities do not. Since no social systems could be closed or opened, they are generally described as wholly closed or accessible.

The difference between closed and open structures is defined by the degree of external environmental exposure. Secure facilities are resistant to ambient anomalies, while available systems are receptive to environmental conditions (Tops et al., 2014). The solution to the programs is an institutional norm that evaluates efficacy developed on long-term expansion or viability. If an organization, which comprises preservation and development, can maintain homeostasis, the model is efficient.

Compliance Objectives and Related Technologies (COBIT)

COBIT is a structure used for IT governance as well as strategic planning. The system is built to be a manager-friendly tool and bridges the critical gap across technical problems, company uncertainties, and command standards. Ultimately, COBIT guarantees consistency, monitoring, and efficiency of an organization's information technology and is the most predominant element of any corporate practice. COBIT is an acknowledged standard that could be implemented in any field to any company (Andry & Hartono, 2017).

The COBIT model is a framework for IT to improve organizational processes. According to Audit and Control Association (ISACA), lucrative organizations understand the value created by information technology (Andry & Hartono, 2017). IT professionals use the framework to create more optimized internal processes to drive shareholder value. The model allows managers to close the gaps between control requirements, technical requirements, and business requirements at large by enabling the development of clear policies and procedures. Like the COSO model, the COBIT framework has five functional components: framework, process description, control objectives, management guidelines, and maturity models (Machado et al., 2017).

The COBIT framework helps managers develop systematic IT internal controls. Montenegro and Flores (2015) stated that the COBIT framework encourages management to use best practices and standards to shape IT processes and infrastructure. The approach recommends management develop a strategic IT plan that helps businesses align their internal control goals to their overall business goals (Montenegro & Flores, 2015). IT can be applied in governance areas to support informed decision making, audit to promote more efficient processes, and financial reporting to ensure the accuracy and effectiveness of the methods used (Machado et al., 2017). The process descriptions define the process model and standard language adopted by everyone in an organization. The process description defines the roles, responsibilities, areas, and building mechanisms required to develop robust IT systems to guide internal control. Control objectives are the third component of the COBIT model (Machado et al., 2017).

Management objectives define management’s responsibility of allocating responsibilities, objectives, measures of performance, and the relationships between processes. Control objectives define the set of high-level requirements that management must engage in to support IT systems' optimal functionality (Machado et al., 2017). The final component of the COBIT model is the maturity model, which involves: the need to assess the maturity and capability of an organization to implement IT infrastructure, implement the right processes to complement the functioning of the IT processes, and develop objectives that link the use of IT to improved internal control processes (Montenegro & Flores, 2015).

The COBIT model aligns with the COSO framework. Like the COSO model, COBIT provides a rationale for organizations to control their internal functions and align internal control objectives to the overall business strategy in business operation (COSO, 2017). However, COBIT emphasizes the role IT plays in enhancing internal control tools such as governance, audit, and financial reporting. The COBIT framework suits organizations that use multiple frameworks to provide complementary support systems beyond those involving IT (Fernandes et al., 2018).

Effective Internal Control Strategies in ERP Model

An ERP system forms the basis of integrating diverse elements of an organization. Due to changing business models, technological advancements, globalization, and other business demands within the contemporary business environment (Altheebeh & Sulaiman, 2016). ERP systems have become requisite for modern businesses as part of their strategy to achieve sustainable and value-creating operations. ERP operates a single database that integrates functional groups such as planning, purchasing inventory, sales, marketing, finance, and human resources (Kaya, 2018). The ERP system forms a basis for integrated business operations in real-time; it supports the free flow of information between diverse business departments.

The ERP system is a critical business tool due to its ability to create efficiency by supporting integrated organizational systems. According to Germann and Manasseh (2017), ERP systems consolidate business transactions available to all enterprise staff. ERP systems eliminate human interaction with data flows, thereby enhancing security, accuracy, and transparency of operation (Jagoda & Samaranayake, 2017). According to Geiger et al., 2015), as business managers invest in information system resources, the degree of efficiency and value to an organization is determined by the system's success or failure. Business managers must develop strategies to increase the successful integration of an ERP system.

An internal control system is a crucial tool ensuring the successful functioning of business ERP systems. According to Ballas and Demirakos (2018), internal controls might be overlooked as factors to consider when implementing ERP. Jagoda and Samaranayake (2017) suggested that a control framework must conceptualize internal control features within an IT context. Parker and Nielson (2016) defined internal controls as an integral mechanism that supports an organization’s operational efficiency, achieving operational goals, organizational competitiveness, and reinforcing the corporate role. An effective internal control system ensures the smooth running of routine organizational operations and a significant reduction in organizational risks, thereby forming an integral component of the ERP system (Ballas & Demirakos, 2018). Thus, internal controls must be a part of the overall ERP process.

An essential advantage of an ERP is the consolidation of business processes within a single system. Geiger et al. (2015) suggested that ERP systems effectively integrate internal resources and business processes to increase organizational efficiency and effectiveness. Ettish et al. (2017) suggested that the internal control system complements the ERP system's function and determines its ability to benefit the organization. An internal control system can help an ERP gather, analyze, and report information in a changing context (Ettish et al., 2017). Ballas and Demirakos (2018) suggested that a functional internal control system requires organizations to go beyond the standard adherence to policies and procedures. The internal system helps articulate the social, human, and cultural factors that affect an ERP system's operation.

An internal control structure of an ERP system must incorporate elements of the COSO framework. Management and involved stakeholders must use decision-making tools, judgment, and strategic opportunities to ensure that the internal control function supports the optimal performance of various business areas (Babkin et al., 2017). ERP systems have embedded structures and institutional logic that collide with various internal control tools (Chen & Keung, 2018). These internal control tools can be strategically placed to leverage opportunities for success in ERP, allowing the organization to reap maximum benefits.

According to Chen and Keung (2018), inadequate internal controls threaten ERP systems' legitimacy if the controls do not support all individual business functions covered. Moldof (2015) suggested that many organizations have suffered losses because of poorly designed internal control systems. Issues within the context of internal control attach significant input to the ERP process, which cannot be realized if control systems are weak. The mold stated that the streamlined performance of routine operations and successful mitigation of operational risks occur with the successful implementation of sound internal control systems.

A focus on internal controls is a critical component of the successful operation of ERP systems. Fitzgerald et al. (2018) established that of the organizations that implemented ERP systems, 78% of these organizations credited internal control systems as positively affecting ERP system operations. In another study conducted among 500 organizations operating in Hong Kong, Cheng et al. (2018) sought to establish an organization's quality variables for information systems to influence an organization's benefits. Cheng et al. (2018) found that 65% of all organizations were aware that quality variables in internal control significantly influenced an organization's management level on their ERP systems. The internal controls determine the coherence of business processes and procedures, which are factors that underpin the successful implementation of ERP systems in organizations (Jagoda & Samaranayake, 2017).

A corporate governance structure influences internal control systems that support the success and effectiveness of ERP systems. Corporate governance is an essential aspect of internal control that significantly affects how an ERP system operates in an organization. Geiger et al. (2015) defined the role of corporate governance in internal control from a contingency theory perspective, stating that organizations are different and therefore require different management styles. Corporate governance determines the type of contingency an organization adopts to achieve its objectives (Fitzgerald et al., 2018). Corporate governance provides an oversite of internal controls.

Fitzgerald et al. (2018) argued that corporate governance principles describe the rules, regulations, and procedures that achieve the best protection of and balance between the interests of corporate managers, shareholders, and other stakeholders. Corporate governance oversees the control activities, risk assessment, information, communication, and monitoring and evaluation, shaping the internal control system (Cheng et al., 2018). Corporate governance can influence internal control in three significant aspects: management control, strategy, structure, and management support.

Cheng et al. (2018) defined corporate structure as the outline of organizational roles and responsibilities related to different parts of the organization. The structure determines how information flows in the organization and how responsibilities and activities are allocated at different levels of the organization. The structure also determines the degree of integration and differentiation in an organization (Khani & Noroozian, 2018). The integration aspect of the structure refers to the level at which authority is decentralized, while the integration refers to the rules and operating procedures. Khani and Noroozian (2018) noted that organizations with more decentralized authority and well-established rules and operational procedures perform better. Highly decentralized and integrated organizations also develop better control of internal processes, increasing the probability of successful ERP system operations.

Strategic corporate governance forms the basis for effective internal control systems (Akinleye & Kolawole, 2020). Strategy in corporate governance is the tools and methods management chooses to adopt to influence organizational elements such as control, internal systems, technology, or risk management. Strategies act as a guiding tool for management to enhance control and decision-making to ensure more optimized outcomes. Strategies are not standard but differ among different organizations due to differences in environmental requirements. Parker and Nielson (2016) highlighted failed corporate governance as the main contributing factor to fraudulent scandals. Corporate governance oversees the design and implementation of internal control systems that fit the organization and promote the optimal functionality of ERP systems.

Corporate governance is a comprehensive organizational process. According to Geiger et al. (2015), corporate governance includes planning, control activities, risk assessments, authorizations, segregation of duties, and reconciliations, all of which form the internal control system's components. More strategic judgment and control from corporate governance can create tighter internal controls that facilitate ERP functioning. Based on information by Altheebeh and Sulaiman (2016), corporate governance provides oversight over a company’s processes and procedures to ensure they leverage opportunities and minimize risks at acceptable levels. The governance processes monitor the organizational risks and ensure that the organizational controls are efficient enough to mitigate future risks (Graham, 2015). The governance processes ensure accountability, transparency, and professionalism in internal control, which support sound internal control systems. Graham (2015) states that the corporate governance framework comprises organizational policies, measures of performance, and controls established to align operational goals to organizational strategy. For an enterprise to leverage the ERP system's full benefits, the internal control must align to corporate governance (Graham, 2015).

An ongoing ERP system requires appropriate monitoring controls. According to Elbardan et al. (2016), management ensures the system's continuous improvement and functionality. Corporate governance works to streamline internal processes to support the continuous functioning of the ERP system. The governance processes focus not only on the financial aspect of internal control but on the holistic development of internal systems, ensuring that the internal control system supports ERP (Rubino et al., 2017). Factors guiding corporate governance include employees understanding the system's technical capabilities and relevance to the organization (Jagoda & Samaranayake, 2017).

Corporate governance is constantly engaged in information synthesis and regular updating of the internal control systems to respond to the changing organizational requirements (Haislip et al., 2015). The management is further engaged in articulating how changes in internal systems can directly impact the functioning of ERP systems. Thus, management can tell whether the existing internal control systems sufficiently support the organization's current needs concerning ERP operation. Altheebeh and Sulaiman (2016) added that corporate governance shapes the work environment by implementing core standards and values on which employees base behavior and interaction. By designing an organization's ethics and compliance standards, corporate governance influences a positive culture that supports a positive internal environment (Geiger et al., 2015).

Management support occurs by supporting organizational performance and employee participation. For change to occur in an organization, the tone must come from the top down to the employees (COSO, 2017). Given the role of leadership, managers provide strategic opportunities to support organizational change, behavior, and culture (Haislip et al., 2015). Control activities and processes' effectiveness depends on the level of engagement, motivation, and collaboration of employees. Corporate governance promotes a positive work environment by building strong communication systems, work arrangements, employee relations, and training and development opportunities to improve employees' capacity for productivity. According to Khani and Noroozian (2018), corporate governance developed transformational and charismatic leadership roles that help lead organizations in changing times. Khani and Noroozian, 2018) suggested that transformational and charismatic leaders can embed the change process as a part of organizational culture and promote employee attitudes that positively encourage a favorable internal control atmosphere. This way, effective corporate governance plays an essential role in ensuring the development of internal control systems that support the implementation and effectiveness in businesses (Germann & Manasseh, 2017).

Audit influences internal controls over the effective use of an ERP system. Effective internal audit processes in businesses create better opportunities for better internal control systems (Germann & Manasseh, 2017). Auditing is an independent, visional assurance and consulting activity designed to add value to an organization's processes (Shaiti, 2014). The internal audit function was traditionally focused on the independent assessment of financial information but has expanded to encompass the nonfinancial elements of internal control affecting businesses. Internal audit creates a platform for more effective governance, risk management, and control activities (Naheem, 2016). Effective audit processes help identify weaknesses in the internal control system, allowing for improved processes (Moldof, 2015). The auditors' role is to assess the control environment operated by an organization regarding how various individuals conduct their roles and responsibilities within the organization (Germann & Manasseh, 2017). From this perspective, an auditor identifies weaknesses in corporate governance and recommends improvements to ensure that management is more accountable and transparent in their oversight and control duties.

Based on information from Cheng et al. (2018), the legitimacy of the audit process is the ability to evaluate, monitor, and identify strategies to improve an organization's internal control system. According to Germann and Manasseh (2017), the audit function positively affects an organization's quality of control processes. Graham (2015) identified one major internal control pitfall as the lack of consistency and inadequate internal control measures that fail to identify internal control weaknesses. The lack of a control process contributes to the inability to achieve organizational objectives. The audit function determines the contours involved in internal controls and relates these to the business strategy and risks (Cheng et al., 2018). Any misalignment between strategy and business requirements is identified and corrected for more consistency in performance. The audit process contributes to building organizational value, building effective business operations, and allowing for more accountable financial reporting. According to Babkin et al. (2017), the audit process links to improved systems implementation. The auditor acts as a strategic internal control assessment tool to minimize organizational risks.

Internal auditors assess and opine on the effectiveness and adequacy of controls. According to Babkin et al. (2017), the audit opinion forms the basis for corporate governance activities, information technology operations, and a reference point for the transparency and accountability of the financial systems in an organization. The audit function evaluates the effectiveness of the control environment, risk assessment strategies, management controls, communication activities, and monitoring activities in place (Gramling & Schneider, 2018).

The legitimacy of the audit process depends on the auditor's independence, objectivity, and professionalism (Gramling & Schneider, 2018). The audit should reflect the various aspects of the control environment that influence business performance in multiple areas and improve them to provide more value for the organization (Ballas & Demirakos, 2018). The management depends on the auditors' opinion to formalize the risk management strategies adopted by an organization. Therefore, the opinion must reflect quality and transparency to support effective management decisions (Ballas & Demirakos, 2018).

The internal audit function should also be effective enough to act as a governance mechanism for evaluating the introduction of different technology (Altheebeh & Sulaiman, 2016). Following the adoption of ERP systems, the control activities, environment, and internal control mechanisms continually evolve. The internal audit function identifies and evaluates emerging risks and provides a basis for preventative and detective control activities (Gramling & Schneider, 2018). Preventative control activities reduce the risks of an organization. On the other hand, the detective control activities aim to recommend existing events that pose significant risks to an organization. The internal auditors must focus on providing reliable assurance on the quality of control activities in the organization, both in financial and nonfinancial aspects of operation (Germann & Manasseh, 2017).

Effective Change Management in ERPs

ERP research by Haislip et al. (2015) also sought to uncover the dynamics of the change process and how effectively the change can settle as a part of the organization. ERP systems bring new logic into the organization that can conflict with the existing logic. To promote the success of ERP systems and for the organization to reap full benefits, the institutional reason must change to accommodate the ERP systems' logic. According to Germann and Manasseh (2017), ERP involves implementing broad changes in business processes and significant alterations in business models, structures, and individual responsibilities. Cumming et al., 2017) agreed that several risks are involved with ERP systems, including implementation, technicality, and functionality. These risks demand that organizations respond by reengineering and customizing new organizational processes, which are pivotal in ensuring the system’s success.

Implementing an ERP system requires changes to almost all activities throughout the organization. Chen and Keung (2018) stated that reengineering and customizing processes to accommodate ERP implementation and improvements could cause resistance to change, which significantly impedes ERP functionality. Stakeholders must think about a new way of working and interacting with organizational networks to achieve operational objectives. The new methods may accelerate misunderstanding and misinformation, resulting in increased financial errors and fraud (Cumming et al., 2017).

Significant risks are associated with the ERP system implementation. Chalmers et al. (2018) identified the main risks as the poor technical skills required to identify and understand how a system operates and underutilization of system capabilities to build organizational efficiency. The interdependent nature of the ERP system means the system implementation may cause disruptions in other organizational operations (Jagoda & Samaranayake, 2017). Managers must recognize how each process changes with an ERP system. The change management process determines the employees' capacity to interact and cooperate with the new methods and systems, further determining the compatibility of the ERP system to the organization (Chen & Keung, 2018).

Change management plays a significant role in shaping the ERP systems' success. According to Chalmers et al. (2018), change management refers to the approach adopted by an organization to ensure that newly designed methods, ideas, techniques, and resources are successfully implemented in an organization. Change management is a vital tool in internal control since it ensures that an organization can successfully implement innovations and adapt to the changes as part of its strategic processes (Ifinedo, 2015).

A successful change management process occurs in three distinct stages: unfreezing, changing, and refreezing (Machado et al., 2017). The freezing stage involves identifying a need for change and then cultivating the organizational ground to implement the transition successfully. During the freezing stage, management focuses on eliminating barriers to change, such as employee resistance to change, by creating a good awareness and knowledge about the change process. The change process is considered a collaborative and stakeholder-engaging process that gives stakeholders time to adopt the right behaviors, skills, attitudes, and perceptions required to facilitate the change (Saxena & McDonaga, 2016). During this stage, the organization also projects the potential impact of the change to ensure the change process aligns with the achievement of the business objectives (Machado et al., 2017). After the unfreezing process, the organization transitions to the changing phase, which implements the actual change. During the change process, uncertainty and fear concerning the new methods can affect the organization.

The change process requires planning and leadership to ensure sustainability. Management has a critical role to play at this stage by reinforcing information, providing new strategies, and helping employees develop the right behaviors toward the change process (Cumming et al., 2017). Education, communication, and leadership support are critical inputs at this stage. The final stage of the change management process is the refreezing process. In the final stage, management seeks to consolidate the skills, knowledge, and behaviors acquired for the change to occur (Saxena & McDonaga, 2016). The change will now be a part of the organizational culture to ensure that employees fully understand their role in ensuring a sustainable change process (Cumming et al., 2017). An effective change process may tighten internal control and create a positive impact on ERP operation in businesses.

Existing tensions, attitudes, and perceptions can undermine the successful use of a system in an organization. The organizational culture is an essential internal control tool.

According to Altheebeh and Sulaiman (2016), the organizational culture highly determines the effectiveness and success of ERP in organizations. The organizational culture refers to the system of values, beliefs, and attitudes possessed by the organization members (Alvesson & Sveningsson, 2015). The organizational culture is shaped by the management's ethics and compliance standards as a strategy for internal control. The organizational culture determines the level at which an organization can adapt to changes created by ERP processes (Lee & Kramer, 2016). The changes affected by ERP have the potential to affect the social environment of the organization, which can lead to either a positive or negative outcome, depending on the nature of organizational culture. Rae et al. (2017) stated that ERP redefines the social-technical atmosphere of the organization by introducing new information infrastructures and methods. The ERP process welcomes considerable social forces that may create opportunities for promoting or opposing the change. Given that ERP is an agent of change, a favorable organizational culture provides an empowering environment where ERP is more readily absorbed and more sustainably accepted as a part of the organizational processes.

Lee and Kramer (2016) stated that there always exists a gap between system capabilities, contextual requirements, and the nature of an organization to which a system is implemented. The organizational culture equips employees with the right values, beliefs, and behavior to support a change process that could benefit the organization (Alvesson & Sveningsson, 2015). The favorable values and belief system supports a collaborative approach to the change process, which gives leaders a strategic opportunity to educate, train, coach, and mentor employees, auditors, and other personnel into embracing the use of ERP (Bolman & Deal, 2017).

According to Rae et al. (2017), one of the internal control tools underpinning the success of an ERP system is the communication system that is present and functional in an organization. Hsiung and Wang (2014) referred to communication as the effective exchange of information, ideas, opinions, and feelings between different people or entities. Bolman and Deal (2017) defined the communication strategy or system as the effective approach an organization adopts to provide information to all relevant users quickly and appropriately. Communication strategies are established to influence quality decision-making, enhance mutual understanding among staff, boost positive employee relations, enhance teamwork, and build awareness of an organization's vision (Helms-Mills & Mills, 2017). The communication system determines the flow of information and how different users can make decisions timely and relevant.

The quality of communication is positively correlated to the functioning of the ERP systems, as it determines the level of understanding the various stakeholders have of the ERP system. Rae et al. (2017) argue that an information system that its users do not understand is redundant and cannot influence the intended objectives aimed at organizations. Several communication exchanges take place between ERP employees and other employees from other departments. Communication also takes place between the ERP project groups (Germann & Manasseh, 2017). ERP personnel engage with the ERP system need a technical understanding of the system to ensure they adopt a system-thinking approach on compliance and operation of the system (Ballas & Demirakos, 2018). Such deep knowledge can ensure that the ERP consultants tailor the right strategies to help meet ERP objectives. Communication fosters this connection and ensures that ERP personnel understand what is required for optimal system functionality (Helms-Mills & Mills, 2017).

Germann and Manasseh (2017) suggested that through effective communication systems, management can educate, coach, and mentor employees on the need for ERP systems, allowing for a successful implementation of ERP in an organization. The continuous improvement of ERP in an organization is also shaped by communication strategies adopted by an organization since it ensures information is available to the ERP project team for more practical decision-making (Gramling & Schneider, 2018). Through effective communication, the ERP personnel can monitor changes and patterns in both the internal and external environment, thereby adapting the ERP system to remain responsive to changes in the environment. Geiger et al. (2015) provided the example of auditors who operate ERP systems to identify the strengths and weaknesses within organizations' operations. A poor understanding of the ERP system because of poor communication methods impedes the auditors' ability to control the ERP system and use the system as a risk management tool (Binder, 2016). Quality communication eliminates misunderstandings, clarifies vision, techniques, and helps to build trust among auditors, empowering them to use their professional knowledge in risk assessment (Gramling & Schneider, 2018). An organization can also gain more control of the ERP system when awareness is built around it and when employees understand their role in supporting it. Therefore, communication helps maintain the connections needed for an ERP to work efficiently and ensures a favorable working environment that fully supports the ERP objectives (Shao et al., 2017).

Internal Control Strategy Barriers

From the context of the study, it is essential to understand the key barriers preventing businesses from implementing effective internal control strategies to support more efficient ERP system operations. Audit and inspection challenges affect the ability of the auditor to identify weaknesses and risks associated with ERP (Ardi & Nazaripou, 2015). The implementation of ERP systems or improvements generates new systems and approaches to business processes. The new business models and processes create a new risk, given that the framework is different from the original system.

Boyle and Applegate (2016) suggested that ERP systems are also constantly reengineered to respond to changes in the business environment and ensure that the business continually gets the optimal benefits from operating the system. The changes in the system create significant modifications in network security, system interdependencies, interruptions, employee roles and responsibilities, and overall control activities (Kaya, 2018). The changing fundamentals of the risk environment pose a challenge to effective internal control from an internal audit perspective. The internal auditor may not adequately comprehend the basic architecture and technicality of the system, creating a risk of a non-quality assurance of internal controls (Boyle & Applegate, 2016).

Additionally, Alles et al. (2006) stated that an internal auditor is highly vulnerable to loss of independence. The manager selects them, unlike the external auditor, who has no connection to the organization. The lack of independence reduces objectivity and risks the possibility of distorted opinions, which misinform governance, IT-related decisions, and overall internal control strategies. According to Altheebeh and Sulaiman (2016), the auditor may also lack professional competence to form a quality assurance from the audit operation due to a lack of professional training. Inadequate professional competence can also be caused by a lack of continuous training and improvement to ensure that the auditor is conversant with updated organizational processes or requirements (Ballas & Demirakos, 2018). Low competence levels mean that the auditor does not adopt the right processes and procedures in research and reporting, undermining the opinions provided. Ardi and Nazaripou (2015) argued that to overcome the challenge created by poor quality auditing, an organization must select auditors with strong professional and academic backgrounds in the auditing process. Management must ensure continuous training and development that address new or changing processes (Binder, 2016). Knowledge increases auditors' operational capacity and provides they can apply the correct methods and techniques to the right internal control processes. Alles et al. (2006) also recommended the internal auditors be constantly changed to help reduce the probability of conflicting interests or lack of objectivity in the auditing role.

Lack of understanding of corporate governance's scope and functionality affects the effectiveness of internal control processes, thereby affecting the quality of ERP systems realized (Ballas & Demirakos, 2018). Management failure from a poor understanding of scope and functionality creates gaps in internal control. Management decision-making determines the effectiveness of control activities. The complex and dynamic organizational environment requires managers to engage in complex, flexible, and contingent mechanisms, which may not always be possible. Inability to develop strong cognitive processes to support decision-making in areas of structure, strategy, management control, and management support leads to undesirable effects for the internal control system, undermining the ability of the internal system to support ERP effectiveness (Binder, 2016). Poor management decisions because of poor understanding of scope and functionality mean that some areas of internal control are underrepresented and may therefore perform in coherence with other internal control components. According to Kaya (2018), management lacks professionalism and accountability to carry out their roles in other cases. This can be defined from an agency theory perspective. Agency theory states that managers play a unique role in representing shareholders and stakeholders in decision-making to ensure that every decision creates value for the various shareholders (Parker & Nielson, 2016). Management acts as an agent for shareholders to ensure shareholders optimize their value from the business. However, the problem of agency theory emerges when managers lack incentive and subjectivity to represent the interests of shareholders (Kaya, 2018). Therefore, management may engage in poor decision-making or engage in unethical activities for self-gain at the expense of shareholders' interests. This provides a reasonable explanation for the many corporate managers involved in corporate scandals. As a solution, Ardi and Nazaripou (2015) recommended using incentives to motivate managers to perform their roles. Incentives can be financial or nonfinancial, such as recognition, empowerment, job security, and trust. Incentives can build a management culture in which managers feel a direct individual responsibility towards ensuring the internal controls support organizational performance. Kakabadse et al. (2017) also recommended the use of continuous training and development to continually reinforce the skills and behavior required for managers to contribute optimally to effective internal control systems.

The practicability of risk management strategies and compliance standards has also been identified as a challenge to effective internal control. According to Geiger et al. (2015), risk management strategies and compliance standards have only been implemented at a hypothetical level. Thus, organizations face uncontrolled risks that could significantly lead the organization to face loss or collapse. Risk management and compliance standards are sometimes viewed as an extra burden to organizations, causing the two important aspects to receive low attention (Kaya, 2018). Poor decision-making by management, such as developing inappropriate compliance standards, may lead to poor organizational culture, employee behavior, and relationships that undermine the development of effective internal control systems. The ineffective risk and compliance standards have led to financial errors, scandals, and business-oriented inadequacies. Yin (2018) recommended using legal standards to affect risk management and compliance standards to promote effective internal control systems. According to Geiger et al. (2015), management should embrace their role in protecting and guiding the interests of shareholders and, thus, practice risk management and compliance management at an organizational level.

Kaya (2018) attributed poor internal control systems to poor change management processes. Some organizations have adopted coercive, and directive change strategies that are highly consistent with resistance. Resistance from employees creates ineffectiveness in change processes and leads to inadequate internal controls. New methods and processes affect the social aspect of organizational life (Lee & Kramer, 2016). Therefore, management must provide employees with enough time to accept and adopt the change as part of their work culture. According to Kaya (2018), change management should be systematic and collaborate with employees to realize the necessary change in the institution.

Transition

Section 1 included the foundation of research associated with effective fraud risk mitigations strategies. In addition, Section 1 had the background of the problem as well, a statement of the proposed qualitative single case study is to explore effective internal control strategies for ERP systems business leaders use to reduce risks from reporting and erroneous transactions. The nature of the study, research question, and a description of the COSO framework were included in Section 1. This section also included the assumptions, limitations, delimitations, and anticipated social change, as well as a review and synthesis of the academic literature related to the COSO framework, fraud theories, and internal control.

Section 2 includes a background of research methodologies and designs related to the study. In addition, the study population and sampling, the role of the researcher, as well as the data collection instruments, technique, and organization is outlined. Section 2 concludes with a discussion of data analysis, reliability and validity techniques.

Section 3 contains an overview of the study. This section includes a presentation of findings, the application of findings to professional practice, as well as implications for social change. Recommendations for further research are also included in this section.

Section 2: The Project

In Section 2, I restate the purpose of the study and describe the role of the researcher in the data collection process and research methods used in this study. The section includes details regarding the target population, selection process, research ethics, and data collection techniques and instruments that I used to analyze the research findings. I conclude Section 2 with a discussion of the reliability and validity of the research instruments, a transitional summary of topics in Section 2, and an overview of Section 3.

Purpose Statement

This purpose of this qualitative single case study was to explore effective internal control strategies for ERP systems business leaders use to reduce risks from reporting and erroneous transactions. The target population for this study included seven participants at one business in Mississippi who have successfully implemented effective internal control strategies for their ERP systems. The positive social change implication is that the resident's benefit may be enhanced community stability where employment opportunities increase, thereby increasing the betterment of the community.

Role of the Researcher

Researchers have the mandate to formulate research questions, select an appropriate research method, collect relevant data, and later use appropriate data analysis methods (Marshall & Rossman, 2016). My role as the researcher included selecting the appropriate research method and designing, recruiting potential participants, deciding on the instrument, collecting the data, analyzing the data, and describing the results. As the primary data collection instrument, I engaged prospective participants who met the criteria for the targeted population. I also interviewed qualified research participants to answer the research question, used member checking to ensure data accuracy, and organized, interpreted, and analyzed the data collected from all sources. Data collection occurred only after approval was obtained from Walden University's Institutional Review Board (IRB).

Interviewing business leaders and retrieving ERP implementation documents were the data collection techniques in this study. My role as a researcher in the data collection process was limited to four activities. First, I developed an interview protocol to maintain the consistency of questions in the interviews. Second, I sought Walden University's IRB approval before interviewing participants. Third, I interviewed multiple business leaders after securing informed consent from the interviewees. Finally, I (a) recorded the interviews, (b) transcribed the interviews' recordings and summarized each interview, (c) conducted member checking, and (c) stored transcriptions in a computer-assisted qualitative data analysis software to create a case study database. As a researcher, I was also responsible for conducting an ethically sound study and preventing any harm to the participants.

Researchers struggle to avoid bias. McCusker and Gunaydin (2015) argued that researchers might embed their prior beliefs in the research process. I have worked in the business industry and have worked with the implementation and operation of ERP systems. However, my background in the business industry did not bias my research in selecting participants or interpreting data; I incorporated strategies to limit potential biases including bracketing and using an interview protocol.

Bracketing assists researchers in maintaining objectivity, consciously maintaining a distance from the research project. Researchers put aside their individual biases through bracketing while collecting data (Petty et al., 2012). The researcher uses bracketing to develop a deeper understanding of their work while at the same time maintaining an objective approach all through the research process by operating non-judgmentally (Sorsa et al., 2015). In this study, I used the bracketing technique to reduce bias.

According to the ethical guidelines of *The Belmont Report* (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979), a researcher must understand the ethical issues inherent in research involving human subjects. To comply with these guidelines, I followed the basic ethical principles in *The Belmont Report,* including: (a) respect for persons, (b) beneficence, and (c) justice. I demonstrated respect for participants by requesting written informed consent from all participants to confirm their voluntary participation in the study. The informed consent form included (a) an explanation of potential risks and benefits, (b) confirmation of the voluntary nature of the study, and (c) a description of measures to ensure participants' privacy, confidentiality, and anonymity. I waited for Walden University's IRB approval before engaging the participants.

Participants

There were seven participants in this study. Qualitative researchers choose participants based on the eligibility criteria (Jagoda & Samaranayake, 2017). The selected participants met the following criteria: (a) willingness to participate in data collection, (b) business leaders Mississippi, and (c) have successfully implemented business strategies to sustain their operations in business management. I identified business leaders working with one business who are appropriate gatekeepers. I reached out to these executives to find one who agrees to participate in the study. After the gatekeeper in the observation (Powell et al., 2016). Obtaining participant responses specific to the research question was at the forefront of this study. As the researcher, I established the criteria necessary for participation.

After IRB approval of the study, I began reaching out to potential participants via email. I introduced myself and the study and strived to garner interest in participation in the study. I did not conduct on-site recruitment. The targeted population was appropriate for this study because business leaders are controlled strategies for ERP systems business leaders use to reduce risks from reporting and erroneous transactions.

Gaining access to participants requires a specific strategy (Gülmez et al., 2016). Researchers can explain the interview process, the purpose of the study, and the research value through e-mail to establish trust and compatibility with the participant (Auer et al., 2015). Confidence and a good working relationship between the participants and the researcher help get positive feedback (Johnson, 2015). To build a positive working relationship with participants and ensured person-centered while collecting data. I was able to build on social networks and accrue social capital with the participants. In the data collection, I involved in the participants' daily activities in the research. Once researchers have identified eligible participants, they invite them to participate in the study (Powell et al., 2016). As an additional strategy, I collected my data using an interview protocol to minimize the participant's anxiety, time commitment, and reluctance. I ensured that the participants perceived that they were valued, appreciated, and comfortable. Having the interview in an environment familiar to the participant will more likely help participants feel at ease.

Research Method and Design

Research Method

The research method for this study was qualitative. Researchers have the option of using quantitative, qualitative, and mixed methods for their studies (Strijker et al., 2020). Quantitative researchers use statistical data collection techniques to measure variables and test hypotheses about the relationships between variables or the differences between groups (Zyphur & Pierides, 2019). A quantitative method was not suitable for this study as I was not testing a hypotheses. A mixed-method researcher uses qualitative and quantitative methods in a single study (Sahin & Öztürk, 2019). I did not use the mixed method as the quantitative aspect was not a part of my study. Qualitative researchers use semistructured interviews to understand and meaning a phenomenon (Yin, 2018).

Researchers analyze the relationships between variables using a quantitative approach (Zyphur & Pierides, 2019). Quantitative researchers use numeric data to examine a phenomenon's nature (Bristowe et al., 2015). Researchers use quantitative research methods to examine quantities, support judgments, and test hypotheses (Bell et al., 2018). Researchers use quantitative research methods to examine quantities, support judgments, and test hypotheses (Bell et al., 2018). A quantitative research approach was not appropriate for this analysis, as I did not produce any ideas or test hypotheses. Researchers use a mixed research method to integrate quantitative and qualitative research approaches (Strijker et al., 2020).

A mixed research method is harder to carry out (Yin, 2018). Researchers use qualitative and quantitative methods to understand the research issues (Brannen, 2017). Researchers use a mixed approach to achieve a complex understanding of a phenomenon (Hamilton & Finley, 2019). I did not select a mixed method because I did not include numerical data in this study. I did use the qualitative method of study to analyze and explain participant interactions. Hence, the qualitative method was more appropriate for this study compared to the quantitative and mixed methods.

Research Design

The qualitative research designs include phenomenology, ethnography, and case studies (Goldman et al., 2015). Phenomenology design refers to a qualitative research method that focuses on how humans' character and describe the experiences of human beings. At the same time, ethnography is the scientific study of people based on their cultural beliefs and perspectives (Marshall & Rossman, 2016). Unlike phenomenology and ethnography, the case study design uses multiple data collection techniques to explore a bounded system in place and time (Yin, 2018). This study will employ design to gather and gain in-depth knowledge and ample data to explore a bounded system in its natural setting.

Researchers using an ethnography design to understand the culture of a particular group (Cincotta, 2015). Ethnographic researchers must become part of a group to study individuals of that culture (Yusop & Correia, 2013). Ethnographic research focuses on understanding a culture's behavior (Bailey & Bailey, 2017). An ethnographic design was not appropriate for my research because I did not intend to explore cultural values.

Data saturation depends on the purpose of the study, participants, and the research method and design (Viet-Thi et al., 2016). The sample should be large enough for the researcher to obtain redundancy of responses or saturation (Yin, 2018). The research methodology, research question, and design will dictate when and how researchers attain data saturation (Viet-Thi et al., 2016). Researchers conducting qualitative research use data saturation to evaluate the study's quality (Hancock et al., 2016). If the researcher fails to attain data saturation in a study, the study's quality and content validity may be hindered (Fusch & Ness, 2015). To attain data saturation, I continued interviews until I fail to identify new themes, categories, insights, or perspectives for coding.

Population and Sampling

The purpose of this qualitative single case study was to explore effective internal control strategies for ERP systems. The sample population for this study consisted of business leaders selected from one business in Mississippi. Researchers use this form of purposeful criterion sampling as a guide to obtaining information pertinent to the issue under investigation (Marshall & Rossman, 2016). Purposeful criterion sampling is relevant for qualitative research, such as case studies (Moss et al., 2014). I used criterion sampling to select the business leaders as my focus will be to identify the businesses using ERP systems or internal control strategies (Robinson, 2014). I followed the criteria established from my population as the criterion I used to pick my sample.

Researchers' sampling technique must align with the goals and assumptions of the study. Researchers use sampling to maximize efficiency and validity (Hamilton & Finley, 2019; Robinson, 2014). Criterion sampling in this study will enhance the selection of experienced and knowledgeable business leaders who have implemented strategies to reduce risks from reporting and erroneous transactions.

Data saturation occurs when the data collected does not add new information or coding to a study, and the data collected can replicate the study (Fusch & Ness, 2015). Data saturation increases the reliability and validity of a study's results (Fusch & Ness, 2015). Qualitative researchers refrain from interviewing more participants when additional interview information does not generate new insight into a phenomenon (Cleary et al., 2014; Roy et al., 2015). I continued to interview additional participants who met the criteria for this study until there were no new concepts or codes that emerged. The study will be qualitative and will entail the selection of leaders from several businesses in Mississippi. Yin (2018) suggested that researchers can reach data saturation with a small sample. Christenson et al. (2016) reached data saturation after interviewing 7 participants. The sample size of this study was seven experienced business leaders. At the conclusion of my interviews I reached data saturation.I continued to collect data until I reach data saturation.

Researchers can use interview settings to increase the quality of the participant's information (Cairney & St Denny, 2015). I conducted in-depth online interviews.

Participants for my study will choose a comfortable and safe environment for the interview. When participants feel comfortable and safe in an online interview, they share more information relevant to the study phenomenon (Bowden & Galindo-Gonzalez, 2015; Deakin & Wakefield, 2014). Participants are more focused in an environment free of distractions, thus providing higher quality audio recording (Deakin & Wakefield, 2014).

Ethical Research

All participants must provide their informed consent by signing the consent form before participating in the proposed study. An essential step for the researcher is to ensure that all participants have provided their informed consent (Alshenqeeti, 2014). Where audio recording was used, verbal consent was also obtained. Once participants expressed interest in participating in the study, the consent form was sent by email to allow participants ample time to review the content. I also reviewed the consent form with each participant at the start of the interview process to ensure each participant understood the intent of the study. The IRB has three main purposes: (a) enabling researchers to conduct scientific processes by which new data and knowledge are rigorously acquired that may benefit the public and society as a whole, (b) ensuring voluntary participants within human studies are adequately protected, and (c) limiting exposure of litigation to institutions (Balon et al., 2019). Participation by an individual in research is voluntary, and the right to withdraw is a core principle of research ethics (LaRossa & Bennett, 2018).

The process of withdrawal will be a failure to attend the interview or failure to give information. No participants of this study will receive any compensation for their participation. I sent the participants a summary of the results. All collected data will remain in a password-protected external hard drive for five years before disposal of information. The disposal will occur through the deletion of data and all accounts linked with the data. The participants' identities are confidential. Each participant will receive a unique number to maintain confidentiality in the study. The details of the participants were limited to a code, P1, P2, P3, P4, P5, P6, and P7, which will change with each participants. The IRB approval number for this study is 03-24-220566476.

Data Collection Instruments

As a qualitative researcher, I was the primary data collection instrument for this proposed study. Qualitative researchers collect data through observations, document reviews, and observations (McCusker & Gunaydin, 2015). Qualitative researchers interpret data to make the data meaningful (Lynch et al., 2016). I conducted semistructured interviews using open-ended questions using Zoom. Researchers using semistructured interviews have a predefined list of questions (Hedlund et al., 2015). In this study, I used six predetermined open-ended questions that focus on exploring the main phenomenon of the study. The semistructured interviews include six predetermined open-ended questions that target exploring the relevant phenomenon of the observation. Each semistructured interview will be 45 minutes, and the interviews was audio recorded. When undertaking semistructured interviews, I intended to have firm expertise in the study question, ask precious interview questions, live adaptively, and avoid biases.

During the interviews, I took notes of my observations of the surrounding environment and participants' reactions to questions, including facial expressions and voice tones. Also, I reviewed internal documentation and make notes of relevant information related to internal controls I collected relevant documentation associated with information obtained from the participants during the interview process from publicly available sources online. These notes are part of a journal. The combination of interviews with other data sources enhances the study's validity (Yin, 2018). Each semistructured interview will last no more than 45 minutes.

Qualitative researchers use semistructured interviews to gather data (Stevens, 2017). I gathered data by conducting zoom interviews with participants, reviewing internal documents, and making information available publicly. Researchers will use interview protocols as a gradual process to guide them through the interview process (Benia et al., 2015). Researchers can use interview questions to achieve access to key participants and create precise schedules of activities required to finish the data collection procedure at a given time (Yin, 2018). Researchers can use interview protocols to reduce the risk of researcher bias by selecting participants (De Ceunynck et al., 2013). I used semistructured interviews open-ended questions to elicit comprehensive responses from participants. Using an interview protocol (see Appendix A), I standardized the interviews to minimize bias and improve the accuracy of information.

Member checking is a procedure used by qualitative researchers to enhance a study's skill (Marshall & Rossman, 2016). Researchers use member checking to validate the data collected from participants (Dubois & Gadde, 2014). In a qualitative investigation, member checking can take place during the interview process, at the end of the study, or both to increase credibility and validity (statistics). The interviewer restates or summarizes information and questions the participant. To improve the data collection process's reliability and validity, a qualitative researcher can employ member checking. I employed member checking to enhance the reliability and validity of the data collection process in this study.

A qualitative researcher is the primary data collection instrument and must avoid researcher bias (Cope, 2014). A researcher can use interview protocols to gain access to key participants and make precise schedules of activities needed to complete the data collection procedure at a given time (Yin, 2018). A researcher can use interview protocols to reduce the risk of researcher bias (De Ceunynck et al., 2013). I used semistructured interviews using open-ended questions to elicit comprehensive responses from participants. I asked for clarity when needed throughout the interview process to ensure that my interpretations of the participants' responses were correct. By using an interview protocol, I standardized each interview and thus reduce researcher bias.

Data Collection Technique

I used three data sources for this study: interviews, archived data, and publicly available records from an organization. I explained to participants the purpose of the research, how the interview process works, and how I want to collect their consent. A protocol was followed when conducting each interview (see Appendix A). Public data sources were consulted and generally agreed with data gathered during interviews with the participants.

The archival data and organizational records were very helpful in understanding the interview data. Archived data and organizational records can help confirm the accuracy of responses given by participants during an interview. Another benefit of using a randomized trial is that the results are more reliable. The main limitation of digital data from computer software is that the user is often limited by the context provided by the data provider, which can limit their interpretive capacity. Other potential disadvantages of using data from a study may include retrieving information that is not richly detailed or that fails to capture a range of perspectives within the context of the research question.

Nevertheless, the type of interview questions may be detrimental to the quality of information gathered. The disadvantage of semistructured phone interviews is that it is challenging to communicate and establish relationships with participants (Agran et al., 2016). Another advantage of semistructured phone interviews is the option to arrange or, in some instances, reschedule interviews with the participants with fewer interruptions (Agran et al., 2016). Casual observation enables researchers to access real-world events of participants. Researchers are likely to intrude on these real-world participants' activities (Yin, 2018). Therefore, during the research, I acknowledged the potential discretion of the interview procedure. Andraski et al. (2014) claim that a qualitative researcher can use member checking to allow participants to respond to how they interpret the collected information. This strategy helps in ensuring the credibility of the data collected. I sent copies of my interpretation to the participants via email to confirm the accuracy of my interpretation of the information gathered.

Data Organization Technique

There are several ways to track, code, and store data for analysis. I used the NVivo 12 Plus software to manage, organize, and analyze the data. While NVivo lacks the ability to fully stage the data analysis process, it does provide exceptional data management and data retrieval capabilities that support data analysis and reporting. As technology advances, the use of electronic filing is common and efficient (Maher et al., 2018; Swanier, 2016).

Researchers may use software applications to organize and store electronic data (Rajesh & Ramesh, 2016). The comments will assist as I arrange the information gathered. Also, I store and organize electronic data using a software application. Moreover, I applied the coding technique for information retrieval and organization. The hardcopy documents will be kept in a secure cabinet. I stored electronic information documents in a computer that is protected by a stronger password. My security structure will help ensure the confidentiality of the participants and protect the information from unauthorized persons. After five years of secure storage, I will permanently delete the documents stored in the computer and shred the documents stored in the cabinet.

Data Analysis

Researchers can use multiple data sources in a qualitative study, including data from semistructured interviews, to explore a research question (Yazan, 2015). Data analysis includes compilation, disassembling, and reassembling data (Yin, 2018). Considering my research question, the naturalistic inquiry will be necessary since the question at hand reflects a real-world approach to improving internal control strategies in business.

The major issue of concern in this research is negating manipulating the phenomenon of interest, and accordingly, business leaders' experiences within their organizations will be informative (Thy et al., 2015).

In my qualitative data analysis, I incorporated semistructured interviews and documentary evidence. I used coding methods, a software application, and a reflective journal to organize data. While researchers often use the terms data triangulation and methodological triangulation interchangeably, data triangulation involves collecting data from multiple sources using three inter-related data points: people, space, and time (Fusch et al., 2018). Methodological triangulation involves using several sources of data and more than two data collection methods that contribute to the reliability of results (Fusch et al., 2018; Houghton et al., 2013). Second, I transferred all transcribed data to a computer-assisted qualitative data analysis software to help transcribe all the information collected (Sutton & Austin, 2015). Afterward, I coded the data to help compress the information into understandable concepts, properties, and patterns, thus ensuring the information creates meaning. The last step will be to validate the data based on the accuracy of the design process and the methods used and then check for procedural consistency to improve reliability. The robustness of data will be tested through sampling and chi-square tests. Researchers can use a qualitative data analytics application to locate and retrieve material related to themes and codes (De Massis & Kotlar, 2014). Qualitative data analysis vendors include NVivo, HyperRESEARCH, ATLAS.ti, and MAXQDA (Yin, 2018). Researchers utilize qualitative data analysis applications to analyze, oversee, and increment speed for organizing subjective subjects (Blaney et al., 2014). These applications can increase the effectiveness of thematic analysis (Blaney et al., 2014; Brennan & Bakken, 2015). I used the NVivo 12 application in conjunction with Miles and Huberman's (1994) data reduction and display model to comprehensively analyze emergent themes and how the resultant data was applied to this study.

Researchers use thematic analysis to identify important and recurrent themes in literature (Pascoal et al., 2016). Thematic analysis allows a researcher to extract emergent themes from collected data and literature (Teruel et al., 2016). I triangulated data from interviews with company documents. The identification of themes based on repeated words, phrases, signs, or symbols is a popular method of qualitative data analysis (Hennink & Kaiser, 2020). Researchers often use thematic analysis to read the data several times and to identify and organize emerging themes related to the research question (Rohlfing & Sonnenberg, 2016). Therefore, I used thematic analysis to detect and organize emerging themes.

Reliability and Validity

Reliability

Reliability is the qualitative measure used in the research that must ensure stability in the research process as it must create equivalence in the data analysis. Eyisi (2016) suggested that reliability improves the accuracy of the results. Ensuring credibility and internal consistency will be critical to ensure that the results fit the objectives of the study. Dependability is a key consideration during the study design phase. Qualitative researchers include mechanisms for ensuring dependability in the design of their studies to ensure the integrity of collected data and findings (Marshall & Rossman, 2016). The test scores achieved must remain constant in the qualitative approach even when another test or variable is introduced. When ERP questions are introduced in the qualitative approaches, it is important to ensure that the scores do not change but must be in line with previous results from the qualitative approach. Connelly (2016) asserted the importance of using an interview protocol during qualitative case studies in the business and management fields to ensure study dependability.

Additionally, this also represents another avenue to ensure conformability in the research. In this case, the interviews, survey questions, and structured recording must show a high correlation with the results, and to help achieve this result, all the measures will use different questions, but they must lead to the same outcomes (Heale & Twycross, 2015; Johnson, 2015). However, for all these measures to show consistency in results, the time scale is appropriately selected for the study while also incorporating the appropriate methodology by considering the study characteristics. Data saturation is a technique that safeguards that the researcher collectively acquired data (Viet-Thi et al., 2016).

Reliability is enhanced when the researcher continues data collection until data saturation occurs. Data saturation occurs when collecting additional data will add new insights to the topic or issue being explored (Hancock et al., 2016). Thus, I continued my interviews until I reach data saturation.

Validity

Albers (2017) referred to validity as the extent to which a concept is accurately measured in a quantitative or qualitative study. Validity entails the credibility, transferability, and conformability of the collected data and research results. I used a combination of data extraction methods to include methodological data triangulation and documented audit trails of materials where available. In the following sections, I explained the procedures to assure transferability, credibility, and confirmability of the findings of this study.

Credibility

Credibility refers to the confidence that the qualitative researcher is truthful with research study findings (Munn et al., 2014). Connelly (2016) recommended member checking and reflective journaling as techniques to establish credibility in a finding. Researchers use member checking to allow participants to validate, correct, or extend the investigator's interpretation of their experiences as recorded in the interview transcript (Marshall & Rossman, 2016). I used member checking and provided participants with summaries of my interpretation of their responses during interviews to ensure the accuracy of interpretations. I implemented methodological triangulation to ensure credibility by comparing the interpretation of interview responses with the analysis of the data collected from reviewing related company documents.

Transferability

Transferability refers to the researcher's ability to transfer research methods and findings to other contexts, places, times, and people (Hallberg, 2013). Future researchers increase the transferability to apply a study's findings to related research (Anney, 2014). I provided information by evaluating the study results on the phenomenon to provide readers and future researchers with transferable findings to their research.

Conformability

According to Elo et al. (2014), conformability entails reporting participants' responses accurately and free of bias. Connelly (2016) indicates that researchers can ensure conformability by auditing the techniques used to collect and analyze data. Also, a researcher uses multiple data collection methods to explore a phenomenon (Greyson, 2018). The use of methodology triangulation increases the conformability of results (Santos et al., 2020). I maintained an audit trail during the research process and illustrate the data collection process, the coding process, and clustering codes to form themes. I used different sources of data collection, including zoom interviews, documentary evidence, and casual observations in this study.

Data Saturation

Data saturation occurs when participant responses become repetitive (Morse & Coulehan, 2015). Data saturation is critical in qualitative case study research (Yin, 2018). Data saturation arises when additional interviews do not add new information (Adom et al., 2014; Onwuegbuzie & Byers, 2014; O'Reilly & Parker, 2014). Data saturation involves employing diverse techniques to capture all possible data from participants. Additional interviews might be necessary to ensure that the researcher achieves data saturation (Marshall & Rossman, 2016). I reached data saturation through conducting semistructured interviews, asking probing questions during interviews, and using member checking. A researcher attains data saturation when additional data collection does not result in additional themes (Morse & Coulehan, 2015). I continued to collect data until no new themes or patterns emerge. I reached data saturation after conducting four interviews and reviewing documents from seven participants, no new themes emerged when analyzing the responses of the seventh interview.

Transition and Summary

In Section 2, I explained my role in the research, described the target population, listed the participant selection criteria, and discussed the research method and design. I explored the effective control strategies for ERP systems. I addressed the qualitative research method and a case study design to analyze various business leaders' attributes about applying effective internal controls for enterprise resource management. I closed Section 2 with an explanation of the processes I implemented to ensure reliability and validity of the study findings. In Section 3, I include the findings of my research, their application to professional practice, and my recommendations for how applying internal control strategies for ERP can avoid fraudulent transactions. Qualitative approaches are different in various scenarios. The incorporation of qualitative techniques depends on the type of information required. Crucial to create coherence and align all aspects of the research project to improve focus and design. The research has established that the research question will be structured so that the problems that tap into the concept under review are internal control systems versus ERP systems. Section 3 concludes with analysis of the implications for social change, my reflections, and a concluding statement.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this qualitative single case study was to explore the effective internal control strategies for ERP systems business leaders use to reduce risks from reporting and erroneous transactions. I derived the data from semistructured interviews with seven business leaders at one business in Mississippi who had successfully implemented effective internal control strategies for their ERP systems. Through methodological triangulation, I supplemented the interview data with documentary evidence from internal documents. The COSO conceptual framework, the detailed literature review, and the data collected and analyzed were crucial in this data analysis leading to the emergence of three main themes. Using Yin's (2018) 5-step data analysis process, three themes emerged. The themes derived in the study were: (a) effective internal control strategies, (b) overcoming barriers to implementing internal control strategies, (c) addressing key internal control challenges.

Presentation of Findings

The main research question in this study was: What effective internal control strategies for ERP systems do business leaders use to reduce risk reporting and erroneous transactions? I interviewed seven business leaders that had experience in the implementation of ERP systems in reducing risk reporting and erroneous transactions. Furthermore, I accessed more data about the firm through observation and document reviews. Thus, based on the information I accessed about the organization and the responses of the interviewees in relation to the research questions was critical in addressing and answering the research. Furthermore, I relied on NVivo 12, Miles and Huberman's (1994) data reduction, as well as the display model to help in comprehensively analyzing the emergent themes.

Three main themes emerged from the analysis, including internal control strategies, overcoming barriers to implementing internal control strategies, and addressing the key internal control challenges. Recommendations from participants included ways of using and measuring the effectiveness of internal control strategies and the additional strategies to help safeguard the organizations.

Theme 1: Internal Control Strategies

The purpose of the internal control strategies for an ERP system is to reduce the risk of fraudulent reporting as well as erroneous transactions. Applegate (2019) suggested that organizations should create a robust COSO control environment to help deter fraud and emphasize the importance of ethical behavior and adherence to internal controls. Based on the interview data, participants had their preferred internal control strategies. In this case, P6 preferred "to use the access reviews and the cash control by trusted people as the main internal control strategies." P3 stated, "I prefer automation and password security as the key internal strategy." P1 stated that, "it is effective to apply the use of distributed control on the transaction, restricted control on company credit card use, as well as monthly reconciliation of bank accounts." P3 stated, "I am comfortable with the application of frequent audits." As displayed in Table 1, there were a total of 17 references for the application of various internal control strategies.

Table 1

Internal Control Strategies (Frequency)

Source	Number of thematic specific comments
P6	2
P3	5
P1	10
Total	17

To access review was a preferred internal control strategy that one business leader found to be critical in the reduction of fraudulent reporting as well as erroneous transactions. One participant felt that they have managed to ensure the internal control strategy for the ERP system goes through the monitoring, which involves accessing the reviews based on the job requirements. In this case, P6 reiterated that, “I have been using regular access reviews to ascertain who has the authority to access what, and at which level does their job requirement need them to have access right as a user.” The response aligned with the COSO model component of control activities. The COSO model outlines that control activities enables an organization to identify and mitigate the errors and biases in the financial reporting (Shaiti, 2014).

P3 indicated that, “there is big need for automation and the application of password security.” In this case, the strategy was found to be effective in controlling the access to the accounting systems to ensure that it permits authorized individuals to access the company’s information system. The participant maintained that access controls are a critical control that must be embedded in the system. As such, P3 reiterated: “Controlling the access to the accounting systems through strategies such as passwords, lock-outs, and electronic access ensures authorized parties can only access the system.” In this case, it is evident that the accounting system of an organization has to remain intact, and as such, it has to apply various approaches. According to Moeller (2013), the COSO model component of the control environment, which is considered effective and reliable in shaping the internal control function, assists managers in overseeing their responsibilities and defining authority as well.

P1 was involved in the implementation of distributed control on the transaction, use of monthly reconciliation of bank account, and restricted control on company credit card use. The participant found out that the three strategies were suitable for helping an organization to manage fraudulent reporting as well as erroneous transactions. P1 opined that, "one of the strategies I used is a checks and balances system to make sure that nobody has control over all parts of a transaction." The participant felt hat limiting people on certain aspects of the transactions helps in reducing fraudulent reporting as well as erroneous transactions. Furthermore, P1 stated that, "I reconciled the organization's bank accounts every month," which is crucial in safeguarding the proceeds of the bank accounts. The participant also clarified, "I implemented a restriction on the use of the company's credit cards and verified all the transactions made using the credit cards to ensure they were business-related."

P3 maintained that conducting frequent audits is vital in ensuring that an organization remains safe and all the transactions are recorded well. The participant mentioned, "Physical audits of assets involve bypassing electronic record-keeping though the process may be carried out less frequently as it involves physically tracking various physical assets." The response aligned with the perspective of the COSO model related to monitoring activities which help in defining the strategies that an organization has adopted in assessing the internal system's quality over time (Rubino et al., 2017). In addition, P6 found out that trusted individuals need to be considered to have access to the cash control center. P6 mentioned, "I have been using only a few trusted employees to make our deposits and make them as frequently as possible." Limiting the number of people that access the cash reserve control center helps to limit the leaking of information, passwords, and transactions that can lead to huge losses (Rose et al., 2015).

My assessment of the company documents supported the comments, responses, and reactions of the participants about the infusion of internal controls in the ERP system to reduce fraudulent reporting as well as promote erroneous transactions. Based on this case, the firm adopted various strategies, such as the access reviews. These review audits were crucial in ascertaining the authority that is mandated to access organizational documents and operations. My document review also revealed that the application of automated processes and password security helps in controlling access to the accounting system. In addition, I realized that the firm trusts a few individuals to control the cash, especially when making deposits. The firm has conducted frequent audits, which involve physical assessment and evaluation of the electronic to keep the record.

Based on this assessment and results, I connected the them with previous researchers. For instance, Rajesh and Ramesh (2016) argued that the adoption of effective internal audit processes helps in creating better opportunities for better internal control systems. Internal audit helps an organization in creating platforms that promote effective governance and control activities. On the other hand, Pett et al. (2015) argued that effective implementation of an ERP system requires an assessment of the workforce to determine the most trustworthy individuals that will be responsible for the improvement and implementation of the adopted strategies. A successful organization needs to consider revising its workforce and offering the mandate to the trusted individuals alone. The handling of duties and responsibilities like cash reserves requires the management to have a long-term connection with the people responsible for the work.

The participants discussed their views on the measured effectiveness of ERP internal control strategies for fraudulent reporting and erroneous transaction risks by finding out ways of measuring the effectiveness of internal control strategies. The united workforce having an ethical conduct of the leaders and the workers and the assessment of the current communication system used to make up the main ways a firm can measure the effectiveness of an internal control strategy (Haislip et al., 2015). Based on the responses of the seven participants, it became evident that different leaders had different ways of measuring the effectiveness of internal control strategies. As such, as displayed in Table 2 there were 11 leadership references for different ways to measure the effectiveness of internal control strategies.

Table 2

How to Measure Effectiveness of Internal Control Strategies (Frequency)

Source	Number of comments related to effective measures
P7	1
P2	1
P5	3
P1	3
P4	3
Total	11

P1 offered three main suggestions on how to measure the effectiveness of internal control strategies. First, it was the use of an assessment of the ethical conduct of employees where the participant stated, “I assessed the control environment to ensure the employee operated with ethical values and integrity.” The second suggestion was to evaluate the available communication system, and he outlined, “I examined communication and information systems to assess the accuracy and efficiency of reports.” The last suggestion was based on evaluating the risk control system, and the participant mentioned, “I evaluated the risk management to audit compliance and risks internal controls are designed properly.” More so, P2 adopted the use of key performance indicators where she mentioned, “Since ERP systems are fully integrated with the system of reporting and dashboards, I used the key performance indicators for measuring the efficiency of the control systems in place.”

Another participant maintained that the assessment of harmony among the workers was an effective way. In this case, participant P7 stated, “In measuring the effectiveness of ERP internal control strategies, the focus was to determine the harmony and working relationship of workers in each department." P5 relied on the assessment of the proper functioning of systems as an evaluation measure. In this case, the participant mentioned that "by determining the extent to which the stated control measures fulfill proper functioning of the organization with regards to ERP's control environment, risk assessment, information and communication control activities, and monitoring." Regular auditing and review of fraudulent reporting were the two ways that P4 found reliable to measure the effectiveness of internal control strategies. Thus, P4 mentioned that "auditors regularly audit ERP system together with manual evidence to ensure no fraudulent activity occurs" as well as "The ERP system conducts book balancing for the casino. Unbalanced books were flagged as erroneous and fraudulent using the system, requiring the responsible parties to adjust the books."

The responses aligned with some of the findings from the current literature. For instance, Alrobaish et al. (2022) found out that the ethical conduct of the workers has been an integral aspect in assessing the effectiveness of an internal control strategy as it helps in revealing the applied ethical values and integrity. In this study, the assessment of the ethical conduct of the students was critical because it revealed that the organization adheres to the goals, policies laid in place, and mission. More so, systems in a firm tend to reveal the effectiveness of the management, plans, and ERP system (Ettish et al., 2017). When an organization has reliable systems in place, it ensures that the assessment of risks, communication, information, and control activities are well structured and working out well.

Theme 2: Overcoming Barriers to Implementing Internal Control Strategies

The model assesses approaches for entering the market while remaining sustainable. According to the notion of strategy, an organization functions in a continually changing environment as society is essentially dynamic. It is the responsibility of the business to evolve with the times (Mansaray, 2019). This includes adapting to a variety of factors, including as shifting customer preferences, advances in technology, shifts in political ideology, and globalization. A strategic company strategy handles all of these functions simultaneously, ensuring that the majority's perspectives are reflected. Thus, there are social, technological, financial, political barriers while implementing internal controls.

The responses of the participants indicated that the adoption and implementation of internal controls tend to have some key barriers in their implementation process. When adopting the ERP system to reduce the fraudulent reporting and erroneous transaction risks means that an organization may face challenges or barriers which come in different ways, and there is no systematic number of barriers involved. A variation in the operations, resources, and the number of workers is a major factor when developing an internal control strategy (O’Reilly & Parker, 2014). Participant responses implied that a firm will not lack any barrier in implementing internal control strategies. Thus, Table 3. displas the frequency of the theme in identifying the various barriers to the implementation of the internal control strategies.

Table 3

Barriers to Implementing Internal Control Strategies (Frequency)

Source	Number of comments related to barriers
P3	2
P2	2
P6	2
P5	1
P1	5
P4	1
Total	13

Based on Table 3 there were 13 references to the identification of barriers that ERP systems face in the implementation of internal control strategies. One business leader relied on the achieving buy-in of all actors as a major barrier in implementing the internal control strategies. Furthermore, each leader argued that the compliance of issues, rob rotation, dealing with a lot of cash during the transaction, poor-data quality, the requirement for constant system updates, and poor management skills were the main barrier experienced. On the other hand, three leaders or participants found out that resistance to change was a major barrier, with two clarifying that lack of human resources and capacity and high cost of risk control was the major barriers encountered.

In this finding, P3 stated: "Mobilizing donors to facilitate the various protocols" was the main challenge experienced in achieving the buy-in of all actors. Participants referred donors as individuals or organization which can offer services which could help them to overcome barriers. P3 further noted that "compliance and enforcement challenges are significant as involved parties undertake the various protocols effectively." The participant was trying to address the issue of challenges that arise due to the compliance issues. On the other hand, P2 noted, “It is more time consuming to comply with available set standards and regulations as it is a multiple-step process” due to the barriers related to the high risk of control. P6 found out that dealing with lots of cash during the transaction is a major barrier and thus cited that, “A lot of cash transactions resulted in having a lot of cash in the office at given times.” Furthermore, the participant outlined that job rotation is a major hindrance to the implementation of internal control strategies. The participant noted that “change in operational responsibilities of my employees resulted in a challenge because new roles allocated had to facilitate change in user rights every time there was a change.”

It is evident that different leaders highlighted different barriers as P5 found out that lack of human resources and capacity was a major hindrance to implementing internal control strategies. In this case, the participant noted, “Insufficient staff members make segregation of duties difficult.” P4 further claimed, “The primary barrier while implementing the system was the changing business environment requiring constant updates for optimal results.” P1 managed to identify various barriers like the resistance to change and claimed, “Resistance to change by some sections of the employees or management” hindered some organizations in implementing the realization of internal control strategies. Furthermore, poor management skills were found to be a major concern as P1 cited, “poor project management and planning” made it difficult to implement the internal control strategies.

In addition, my analysis of the firm in identifying the various barriers to implementing internal control strategies was based on the ability of the different leaders to identify the main challenges that they face. In this case, leaders like P1 found out that poor management skills and poor data quality were the main barriers. The participants affirmed the findings from previous literature. For instance, it was clarified that the auditor might lack professional competence to form a quality assurance from the audit operations because of a lack of professional training (Moeller, 2014). Al-Sady et al. (2021) suggested that internal control training need to be completed at all level of the organization. In this study, participants indicated that inadequate professional competence could be caused by a lack of continuous training and improvements to ensure that the auditor is conversant with organization to control environment, risk assessment, information and communication, monitoring activities, and existing control activities.

Theme 3: Addressing Key Internal Control Challenges

Participants in this study discussed the best ways to address and deal with the challenges that the organization faces in implementing the internal control strategies for the ERP systems with the aim of reducing fraudulent reporting as well as erroneous transaction risks. As leaders, it is important to have an in-depth understanding of the different ways of handling barriers that hinder smooth flow or implementation of internal control strategies (Martin et al., 2014). The participants found different ways of handling and dealing with the barriers. Table 4 below displays the frequency of the theme in addressing the barriers to internal control strategies. The table shows that there were 16 comments of addressing the key challenges in internal control strategies.

Table 4

How to Address Key Challenges

Source	Comments associated to challenges
P3	1
P2	1
P6	3
P5	1
P1	7
P4	3
Total	16

One key approach focused on by participants was the use of functional structure and leadership. P3 stated: “Adopting a functional culture and leadership techniques” is considered effective and reliable.” In addition, the approach to building capacity for the staff members was found an appropriate way, and P4 opined: “I overcame lack of leadership challenge by offering constant training and user support until the employees were conversant with the system.” The study outlined that the use of another efficient parallel system was considered reliable, and P2 stated: “I didn’t completely rely on the sole system as I always kept another system which was more efficient and quicker.” P6 proposed the use the promotion of cash-less transactions and employee rotation. In this case, the participant outlined “advocating for cashless transactions by the clients to minimize the handling of a lot of cash in the office” as well as “I designed a policy together with the management of specific periods of staff to change their roles.”

Participants suggested other methods like achieving widespread buy-in were proposed. In this case, P1 explained, “I also obtained buy-in from stakeholders and leaders across the department before the implementation process to prevent any form of resistance that could arise." The participant also proposed that efficient communication was seen as a considerable approach. In this case, "timely two-way communication" was preferable in dealing with barriers to the implementation of internal control strategies. The other strategy outlined in this study was the reliance on setting realistic goals and time frames. In this case, P1 reiterated, "To ensure proper planning and management, it is important to set realistic milestones, timeframes, and expectations, together with timely two-way communication." P1 also found the validation of data quality an important approach as the participant feels "that it ensured data quality by validating and cleaning out duplicates and adding missing information before transferring them to the ERP system."

My review of this case scenario concluded that no approach is more important than the other. In this case, P1 managed to outline four main ways of handling the barriers affecting internal control strategies. Furthermore, I realized that the responses affirmed the previous literature. According to Johnson (2015), management acts as the agent for optimizing the value in an organization. The setting up effective management, which is based on a working structure, offers a leeway in developing reliable mechanisms for setting up an effective internal control strategy.

Furthermore, effective communication is considered a solution to aligning the working mechanisms of an organization as it fosters a good understanding between the different parties (Jagoda & Samaranayake, 2017). Other researchers have identified the challenges of communication and how communication is embedded in the COSO framework. Effective communication includes the transfer of information across the entity to stakeholders (Edimo et al., 2022; Rubino et al., 2017). Embedded in the COSO framework is management's responsibility to provide a clear message throughout the organization (COSO, 2017).

The participants discussed additional strategies that the organization can implement in relation to the internal control strategies for an ERP system in mitigating the reporting and erroneous transaction risks. The responses offered a deeper insight into the existing strategies that can be adopted for ERP systems. There are many sources of errors and challenges in the implementation of a reliable and smooth ERP system (Chen & Keung, 2018). The two participants found out that apart from the current strategies that the casino business is implementing, there are other strategies that are relevant for ERP systems.

Participants identified additional strategies referenced in an ERP system when handling internal control strategies in the organization. P6 noted that the auditing of physical assets had been a major strategy in handling internal control strategies in ERP systems to mitigate reporting and erroneous transaction risks. The participant clarified, "I have also been using other internal control systems in my accounting departments like; asset audits which we physical verification of assets in regard to the records." In addition, cloud backup has been a major strategy that organizations can consider. As such, P6 noted, "Data backups to the cloud are another method I use as an internal control; when the computers are corrupted, or servers fail, we can easily retrace our data." I also noted that the use of written policies and procedures had become an important strategy. P5 clarified "that she develops written policies and procedures to enhance awareness, ensure adequate staff training, identify potential areas of fraud and risks concerning the system, and develop mitigation plans."

My analysis of the company revealed that the casino business can still incorporate more strategies in the ERP systems to mitigate reporting and erroneous transaction risks. In this case, I managed to understand that the business usually conducts an annual physical audit of all the assets. Such progress implies that the firm can still make this a regular exercise. The use of physical asset assessment has been applied to ensure that the company manages to understand all the available assets and their implications on the operations. It has also enabled the firm to determine the status of the assets to improve the performance of the organization. As such, the use of physical documents and evaluation of the firm showed that the firm has been taking too long to conduct such an assessment which needs to be done quite regularly.

The findings from the participants aligned with the previous literature. For instance, the use of physical auditing assets has been implemented in the organization to determine their value, uses, and effectiveness in promoting operations and working (Chalmers & Khlif, 2018). The study noted that physical count and assessment of the assets help an organization to understand its worth, capability, and aspects it can improve on. Furthermore, the current business environment requires an organization to back up its data, information, and internal controls to avoid losses and changes in the configuration of the firm (Binder, 2016). It is one of the most effective ways to create a better understanding of the business environment as it highlights the key issues and ways of safeguarding the operations.

Application to Professional Practice

The findings from this study are critical for the leaders in a casino business to understand better ways of developing internal control strategies that are crucial for ERP systems to reduce fraudulent reporting as well as erroneous transactions. The finding offers deeper insights that the various leaders at the casino have used to incorporate internal control strategies in the ERP system. The emerging themes have been relevant in ensuring that the casino businesses apply professional practices in implementing internal control strategies. The thematic issues in the study have been crucial in ensuring that the casino businesses understand better ways of reporting fraud as well as reducing errors during transactions. Business managers are in a position to offer the best guidelines for improving the business operations of the firm (Agarwal & Ansell, 2016). The leaders helped in creating better ways to understand more about internal control strategies in the firm, identifying the barriers that hinder the organizations in implementing the internal control strategies, ways of addressing the key challenges, ways to measure the effectiveness of internal control strategies, and ways of using the internal control strategies.

The themes that emerged from the data analysis applies to professional practice. The findings offer rich and diverse internal control strategies to different managers to use in their ERP systems. It will help to understand the importance of having an internal control strategy. The study findings will be relevant in ensuring that business owners and managers find it critical to develop better internal control strategies that will be applied in the ERP systems. The findings will also help in the reduction of reporting errors and transactions for an organization. In addition, participants presented practical practices and strategies that organizations can use to benefit from the implementation of ERP systems. The goal of internal controls is to ensure that the adopted internal control strategies align with the business needs, goals, mission, and vision. These controls will improve the business operations and thus ensure that the reporting and handling of the company operations are free of errors, which will lead to the seamless functioning of the firm. The adoption of the internal control strategies will enable the businesses to improve on the innovation, and this means that the leaders will understand the handling of company affairs, especially when handling the finance department.

Small businesses and firms like the casino businesses need to find out the benefit of having a smooth working relationship between the leaders and the workers. It reveals the importance of having a closely-knit working relationship between the workers and the leaders. The application of the findings like developing effective internal control systems, developing the right attitudes towards the workers, and the segregation of duties. It will ensure that the business leaders benefit by increasing their need to have a deeper insight into ERP systems. Furthermore, it is evident that the study will be vital for the leaders to realign their internal controls and ensure that they develop a reliable and effective working ERP system. It also means that when an organization manages to establish a reliable internal control strategy, it will be easier to promote facets of accountability and profitability as it will lead to a reduction in the fraudulent business deals and errors that occur during transactions.

Implications for Social Change

The casino business has played an important role in the promotion of the economy. The business offers job opportunities to different people, from the waiters and the managers to the supervisors. It is one of the best places that people can source employment, although its functioning and management need to ensure that all the departments are working closely with each. It also implies that the leaders have to devise better ways of improving their performance (Adom et al., 2014). The working relationship between the leaders and the employees needs to be flawless. As such, it will help to align the perspectives that the workers and the community have towards working. It will help to improve standards and character. It is a better way of ensuring that people learn to focus on quality production. It is a better way of ensuring that organizations remain sustainable as there will be a balance between the production and the needs of the market or the community.

The findings from this study are quite relevant and important for the business leaders as well as the community. It will depict the efficiency with which the business leaders can identify and detect the presence of fraud during reporting as well as prevent future erroneous transaction risks. Thus, when business leaders participate in the implementation of the ERP system, it will be easier to promote the efficiency with which they will manage to handle the internal controls. It means that when a business manages to develop strong internal control strategies, it is easier to propel the business to rise and attain success. It will also aim at promoting the economic wellbeing of the community. As such, it means that leaders will be in a position to improve the economic wellbeing of society. When the leaders manage to create and develop effective and reliable internal control strategies, it is easier to improve the social and cultural wellbeing of the community by creating a consistent source of employment. Thus, it means that developing consistent working or employment opportunities will allow an organization to empower the residents in a community, and this propels it towards becoming better.

Recommendations for Action

The findings from this study call upon the casino business leaders to consider implementing internal control strategies in the ERP systems. It aims at ensuring that the firm offers better production by reporting fraudulent transactions and reducing the occurrence of errors during the transaction. The results offer deeper insights on the best way to promote the better working of internal aspects of an organization. It also calls for defining better strategies that can be applied to reducing errors and fraud. Fraud is very damaging to any business but losing money to fraud in the nonprofit sector can be more damaging as it undermines morale, tarnishes the organizations 'reputation, and erodes public confidence in such organizations (Ohalehi, 2019). The implies firm needs to understand the need to have a flawless relationship between employees and the leaders. Developing different internal control strategies enables an organization to develop integrated ways of handling crises, fraud, and avoiding errors.

Based on the study findings, it was evident that handling internal control processes may involve various strategies. In this case, the study proposed different strategies like the improvement of the relationship of the employees. There is a need to promote the working relationship of the workers. One way that can be applied is through segregation of duties, as this will ensure that a single individual or department has control over the complete business process (Pańkowska, 2022). The propel an organization's departments to work closely to work together, and this boosts their working relationships. It is a better way of ensuring that each employee is held responsible for their work, duties, and responsibilities. Company employees can also be trained on importance of practicing high level of ethics while performing their duties through literature and conferences.

The second recommendation is management and Board of Directors review and oversight. Purchases, expenditures, budgets, and monthly financial statements should all be reviewed and authorized by the aforementioned. The third recommendation is implementation of effective internal controls including restricted use of cash The considerable fraud risk connected with the use/presence of cash on premises is the basis for this idea. When possible, managers should try to reduce or eliminate the use of cash. This can be accomplished by prohibiting the use of cash and requiring payment by credit or debit card instead. In addition, managers may consider the implementation of a whistleblower policy and segregation of critical duties whenever possible.

Reviewed literature and the findings within this study develop processes to support decision-making in areas of structure, strategy, management control, and management support leads to undesirable effects for the internal control system, undermining the ability of the internal system to support ERP effectiveness**.** Implementation of the recommended strategies may minimize fraud risk and reduce financial loss associated with fraud incidents in organizations. I will provide the study findings to managers in organizations via professional publications. In addition, I plan to present study findings at conferences and training sessions. Managers of organizations may increase their understanding and knowledge regarding effective fraud risk mitigation strategies which may aid in the education of financial loss due to a fraud incident.

Recommendations for Further Research

The findings from this study have revealed that there is a need to adopt more internal control strategies. Participants suggested that developing internal control strategies will be crucial in ensuring that firms like the casino businesses benefit more from their operations. For instance, firms need to use cloud backup as a new strategy. This approach will ensure that there is the involvement of new and traditional methods in updating and promoting internal control processes. I would suggest that there is a need to expand the exploration of digital platforms when handling internal control strategies as well as ERP systems. The study adopted a single case study, and this limited the data collection to a single business entity. A single case study is appropriate when the researcher is interested in a concentrated holistic understanding of a single unit (Gaya & Smith, 2016). This study was based on the different ways that the leaders use to handle the issues related to ERP systems. Thus, I would suggest that future studies adopt multiple case studies to ensure that we get a different insight into the way leaders can handle internal control strategies in ERP systems to reduce the available errors and report on transactions.

Reflections

My first impression during this study was that the participants would not be cooperative and supportive. However, I later realized that the participants were willing to offer a detailed explanation and description of their experience in handling the internal control strategies. I was impressed with their personal insights on different issues, which helped to develop three main themes.

I chose to research lack effective internal control strategies for ERP systems to reduce risks from reporting and erroneous transactions. Throughout my professional career I have worked with numerous organizations and witnessed the unique challenges these groups face regarding fraud risk. My hope was to reduce risks from reporting and erroneous transactions to similar organizations. Adoption of these strategies may help organizations avoid fraud incidents and the associated reputational and financial loss.

My previous job in the organization sector as well as with internal controls presented possible personal biases regarding the lack of effective internal control strategies for ERP systems to reduce risks from reporting and erroneous transactions. I had to set aside any preconceived ideas about the internal controls I believed to be necessary or best for reducing risks. Reservation of my personal bias and ideas was necessary in order to allow the findings of the study to reveal the actual effective reduce risks from reporting and erroneous transactions.

The DBA doctoral study process provided an opportunity for me to develop valuable research skills. I have gained an understanding of the research process as well as an appreciation for data gathering coding and qualitative analysis. I would like to expand upon my initial study and research to reduce risks from reporting and erroneous transactions. In addition, I plan to continue writing and presenting findings with the hope that it will help organizations avoid costly, damaging fraud incidents.

Conclusion

The purpose of this qualitative single case study was to explore the effective internal control strategies for ERP systems for business leaders in reducing the risk reporting and erroneous transactions. The target sample was seven business leaders working in a casino in Mississippi. Based on the five-step thematic analysis recommend by Yin (2018), three themes emerged, including (a) internal control strategies, (b) overcoming barriers to implementing internal controls, and (c) addressing key internal control challenges. The leaders gave various insights that supported each emergent theme. The internal control strategies outlined by participants were straightforward. While the themes have direct application to the implementation of an ERP in a casino, the emergent themes provide guidance for other industry leaders.

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Appendix A: Interview Protocol

Interview: Exploring the strategies for ERP systems business leaders use to reduce fraudulent reporting and erroneous transaction risks.

1. I will start with greetings and a brief introduction.
2. I will thank the participant for accepting my invitation to participate in the interview.
3. I will ensure that participants received, read, understood, and signed the informed consent form.
4. I will inform participants that the interview will last 45 minutes, and the interviews will be audio recorded.
5. I will begin interviewing.
6. I will explain to participants that I will email my interpretation of the interviews to them for validation as part of member checking.
7. I will conclude the interview, stop the audio recording, and thank the interviewee again for taking part in the interview.

Appendix B: Interview Questions

1. What internal control strategies for your ERP system did you use to reduce fraudulent reporting and erroneous transaction risks?
2. What key barriers to implementing your internal control strategies for your ERP system did you encounter to reduce fraudulent reporting and erroneous transaction risks?
3. How did you address the key challenges to implementing your strategies for internal controls for your ERP system to reduce fraudulent reporting and erroneous transaction risks?
4. How have you measured the effectiveness of your ERP internal control strategies for fraudulent reporting and erroneous transaction risks?
5. How has your organization used internal controls processes from the strategies monitor activity to fraudulent reporting and erroneous transaction risks in your ERP system?
6. What additional information can you provide about your internal control strategies in your ERP systems to mitigate reporting and erroneous transaction risks?