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Relationship of Enterprise Risk Management to the Success of Micro-, Small-, and Medium-Sized Enterprises

Gary Francis
Walden University

Walden University

College of Management and Human Potential

This is to certify that the doctoral study by

Gary Francis

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Roger Mayer, Committee Chairperson, Doctor of Business Administration Faculty

Dr. Matthew Knight, Committee Member, Doctor of Business Administration Faculty

Chief Academic Officer and Provost
Sue Subocz, Ph.D.

Walden University
2024

Abstract

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by

Gary Francis

MSc, University of Wales, 2017

BSc, University of the West Indies, 1996

Doctoral Study Submitted in Partial Fulfillment

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August 2024

Abstract

Micro-, small-, and medium-sized enterprises (MSMEs) account for over 95% of businesses and 80% of the workforce in Jamaica. Jamaican government and business leaders are concerned that MSMEs' meager success rate will continue to hinder economic growth. Grounded in the four pillars of enterprise risk management and rent theory, the purpose of this quantitative correlational study was to examine the relationship between ERM and the business success of MSMEs. The participants were 85 owners or managers of registered MSMEs who operate in the Kingston metropolitan area of Jamaica, have been in operation for at least three years, and completed a questionnaire based on Lundqvist's instrument to measure the independent variables and Chandler and Hanks' instrument to examine the dependent variable. The result of the multiple linear regression was significant: $F(4,80) = 40.633$, $p = <.001$, $R^2 = .670$. In the final model, three predictors were significant: general internal environment and objective setting ($\beta = .293$, $p = 0.004$); general control activities, information, and communication ($\beta = .339$, $p = 0.002$); and specific risk identification and risk assessment activities ($\beta = .392$, $p < 0.001$). A key recommendation is for MSME leaders to implement ERM programs, focusing on tightening internal controls, setting objectives for their achievement, communicating among employees and customers, and identifying and managing their risk exposures. The implications for positive social change include the potential for more people to ascend the hierarchy of needs, changing how they relate to other people, and providing the government with more resources to improve education, healthcare, roads, and other social benefits to the Jamaican population.

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Dedication

I dedicate this milestone to God, my family, and the *necessity entrepreneurs* in Jamaica. In all my life, God has been faithful. He gave me clarity of thought and people to assist and encourage me along the way. God was and continues to be totally reliable. “O Lord, I will honor and praise your name, for you are my God. You do such wonderful things! You planned them long ago, and now you have accomplished them!” (New Living Translation, 1996, Isaiah 25:1).

I could not complete this journey without family. With the pooling of funds, my wife and I could manage the cost of this doctoral journey without compromising our other priorities. My daughter appreciated that I was not neglecting her when I was not able to read bedtime stories, help her with math, play with her, or even take her to her places of interest. During her time of sickness and hardship, my mother did not consider aborting her pregnancy with me, giving me up for adoption, or altering her plans to give me her sole legacy: Education. My siblings were willing to assist me through school with my homework and encouraged me, and they defended and protected me from others.

Of importance, I want to see entrepreneurs flourish. I am an example of those who depended on necessity entrepreneurs - my parents. At times, they had to decide between using proceeds from sales to meet living expenses or replenish their stocks. They had to reduce their price mark-up or reduce the quantity of their products to make quick sales. It was a difficult and stressful battle, but could they do without? With this study, I hope the message will go out to all necessity entrepreneurs on how they could use enterprise risk management to make their businesses flourish.

Acknowledgments

I owe gratitude to God and several persons for their assistance or encouragement while on this doctoral journey. God provided all the resources I needed to successfully complete this journey. I am grateful to Walden's success advising and my committees, Dr. Roger Mayer and Dr. Matthew Knight, for their professionalism and advice. My ActSol team was amazing; they covered my work assignments while I focused on completing this doctorate.

My family played a pivotal role in this success. In the Bible, King Solomon asked, "Who can find a virtuous woman? for her price is far above rubies." (King James Version, 1611, Proverbs 31:10). My wife, Tamara, was that virtuous woman. She ungrudgingly provided love, care, companionship, financing, all that I needed for this journey, and caused our daughter, Joelle, to understand why I needed to be absent for a while. Having understood, without a frown (most times), Joelle gave me the time to think, to write, and to focus on completing this journey. My mother passed in the middle of this journey. She looked forward to my completion as I would be the family's first to reach this far in educational pursuits. I thank her for her care from baby to adulthood and her encouragement along this doctoral journey. The telephone calls I received from my siblings and close friends went straight to the sinews of my body. These telephone calls reinforced why I needed to complete this journey successfully and helped to relieve my anxiety and stress.

I am grateful to all who assisted me along this journey, which undoubtedly has lifelong implications.

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Section 1: Foundation of the Study

Relative to micro, small, and medium enterprises (MSMEs), most large companies have high success rates, are more likely to flourish, and have reserves to deal with stress (Goswami, 2019; Mardikaningsih et al., 2022). Successful large businesses have a structure founded and executed on proper risk management (RM) and controls. Business leaders from large organizations can employ experts in RM to identify, reduce, mitigate, and transfer their risk exposures. Jurdi and AlGhnaimat (2021) demonstrated that using a robust enterprise risk management (ERM) program in large insurance companies has not just improved an entity's performance but allowed it to diversify its products and services, which further reinforced positive performances. ERM has increased firm values and reduced the cost of capital (Bohnert et al., 2018; Shad et al., 2022). Altuntas et al. (2020) were more emphatic in suggesting that a robust ERM program strongly impacts an entity's success.

Some MSMEs do not have a layer of ERM. MSMEs have needs beyond registration within the formal sector (Choudhury, 2018). Smith (2015) identified three areas of training requested by leaders of MSMEs in Jamaica. Those training needs did not include RM, and coupled with Cabello et al.'s (2018) claim that MSMEs in Latin America and the Caribbean lack internal structure and how to cooperate intercompany for growth and development, suggests that leaders of MSMEs in Jamaica need an understanding of the impact of proper RM within their businesses. In South Africa, the government developed a training program for MSMEs, but again, the government did not see the need to include an item on RM (Dladla & Mutambara, 2018). Furthermore, from

their study of MSMEs' problems and prospects, Nema et al. (2021) had not identified RM as contributing to the issues MSMEs faced or the prospect of exploitation. More interesting, Maffioli et al. (2020) found that in Jamaica, entrepreneurs willing to pay for their training were wealthier, more risk seeking, and had a higher drive to expect business growth from the training received. Maffioli's et al.'s conclusion supports the point that MSMEs in Jamaica either do not appreciate the benefits of ERM within their firms or consider ERM as unaffordable compared with the perceived benefits.

Background of the Problem

The Jamaican government has created institutions to support the success of MSMEs. Central to its aims and objectives, the Development Bank of Jamaica [DBJ] assists the MSMEs through funding and technical support (DBJ, 2018). DBJ (2018) recorded that one of the funding mechanisms was the invoice factoring system, which allowed MSMEs to convert invoices into cash ahead of payment from the invoice recipient. With a similar objective but a different approach, the Jamaica Business Development Corporation was formed to build management and marketing capacities in MSMEs (Jamaica Business Development Corporation [JBDC], 2019). Through the JBDC, MSMEs can access technical skills including financial and tax advisers, legal and accounting experts, business and product developers, and marketers (JBDC, 2019). Through the Ministry of Finance, the government has also provided efficiency grants and loans to the MSMEs (Jamaica Ministry of Finance and Planning, 2021). MSMEs continue to have a poor success rate.

In this study, I expanded on research on the importance of accepting RM within MSMEs in Jamaica. I measured the relationship between ERM and the success of the MSMEs by examining how ERM correlates with MSMEs' success. The idea was that where there was a strong positive correlation between ERM and MSMEs' success in Jamaica, leaders of MSMEs in Jamaica should be appreciative of and be encouraged to implement ERM systems to foster business success. Songling et al. (2018) demonstrated that in Pakistan, there was a strong positive correlation between the practices of strong ERM and the MSMEs' success.

Problem Statement

Many MSMEs are unsuccessful (Bushe, 2019; Crane, 2020). While MSMEs account for over 95% of businesses and over 80% of employment in Jamaica, the rate of MSME discontinuation is 91% of the rate of MSME formation, with three of every five MSMEs lacking business success (Jamaica's Ministry of Industry, Commerce, Agriculture, and Fisheries [JMICAF], 2019, pp. viii & 14; Statistical Institute of Jamaica [STATIN], 2019b, p. 13). The general business problem was that Jamaican MSMEs leaders were unaware of the factors contributing to MSME's low business success rate, which has stymied the development of entrepreneurship in Jamaica. The specific business problem was that some small business leaders do not know the relationship between general internal environment and objective setting; general control activities, information, and communication; holistic organization of risk management; specific risk identification and risk assessment activities; and business success.

Purpose Statement

The purpose of this quantitative correlational study was to examine the relationship between internal environment, internal control, holistic risk management strategies, risk assessment strategies, and business success of Jamaica's MSMEs. The targeted population included MSMEs leaders in Jamaica's Kingston metropolitan area. The independent variables included: (a) general internal environment and objective setting; (b) general control activities, information, and communication; (c) holistic organization of risk management; and (d) specific risk identification and risk assessment activities as measured with a Likert-type scale developed by Lundqvist (2014) and used by Jenya and Sandada (2017). The dependent variable was business success, measured with the survey scale developed by Chandler and Hanks (1993). The implications for social change from the results of this study included improving Jamaicans' quality of life; as the number of MSME leaders implementing ERM increases, the greater the sustainability of income and growth for those who depend on MSMEs.

Nature of the Study

For this study, I chose the quantitative methodology. I demonstrated a relationship between the independent and dependent variables for the MSMEs population of the Kingston metropolitan area of Jamaica. Such a relationship was generalizable after observing the relationships among the variables from a sample of the targeted population; it was consequential for each variable to be measured without subjectivity. The formation of hypotheses and the systems to decide which hypotheses to accept or reject were critical components of my study. Ugwu et al. (2021) suggested that a study that uses objective

measures to examine and generalize relationships is quantitative and adopts a positivist paradigm. L. Cohen et al. (2018) added that quantitative studies use analyses of inferential statistics to guide the acceptance or rejection of a hypothesis. Qualitative researchers seek to establish factors that either influence or cause a phenomenon (Ugwu et al., 2021). Kothari (2019) and Saunders et al. (2019) noted that these factors emerge from thematic analyses of data gathered from unstructured interviews, observations, and document reviews. Yin (2018) asserted that researchers use the qualitative methodology to answer how and why questions within the phenomenon examined. Saunders et al. described the mixed-method study as a combination of quantitative and qualitative methodologies. My study demonstrated the significance of relationships between variables and was purely quantitative; I rejected the qualitative and mixed methods for my study.

I sought to establish relationships among variables. Pallant (2020) suggested that a correlational analysis is appropriate for establishing relationships. Researchers use a correlational research design to demonstrate how independent variables relate to a dependent variable (Pallant, 2020). I employed the correlational design in my quantitative study. Because I did not seek to establish causation, complex models used to show both relationship and causation, experimental and quasi-experimental analyses, were not considered. Further, researchers have disqualified experimental and quasi-experimental approaches for doctor of business administration (DBA) studies because these designs are used to fill gaps in literature instead of contributing to the core of the DBA, which is

solving business problems by employing existing theoretical frameworks (Baudet, 2021; MacLennan et al., 2018; Tzavara & O'Donnell, 2021).

Research Question

Research Question (RQ): What is the relationship between MSME's general internal environment and objective setting; general control activities, information, and communication; holistic organization of RM; specific risk identification and risk assessment activities; and business success?

Null Hypothesis (H_0): There is no relationship between MSMEs' general internal environment and objective setting; general control activities, information, and communication; holistic organization of RM; specific risk identification and risk assessment activities; and business success.

Alternative Hypothesis (H_1): There is a relationship between MSMEs' general internal environment and objective setting; general control activities, information, and communication; holistic organization of RM; specific risk identification and risk assessment activities; and business success.

Theoretical Framework

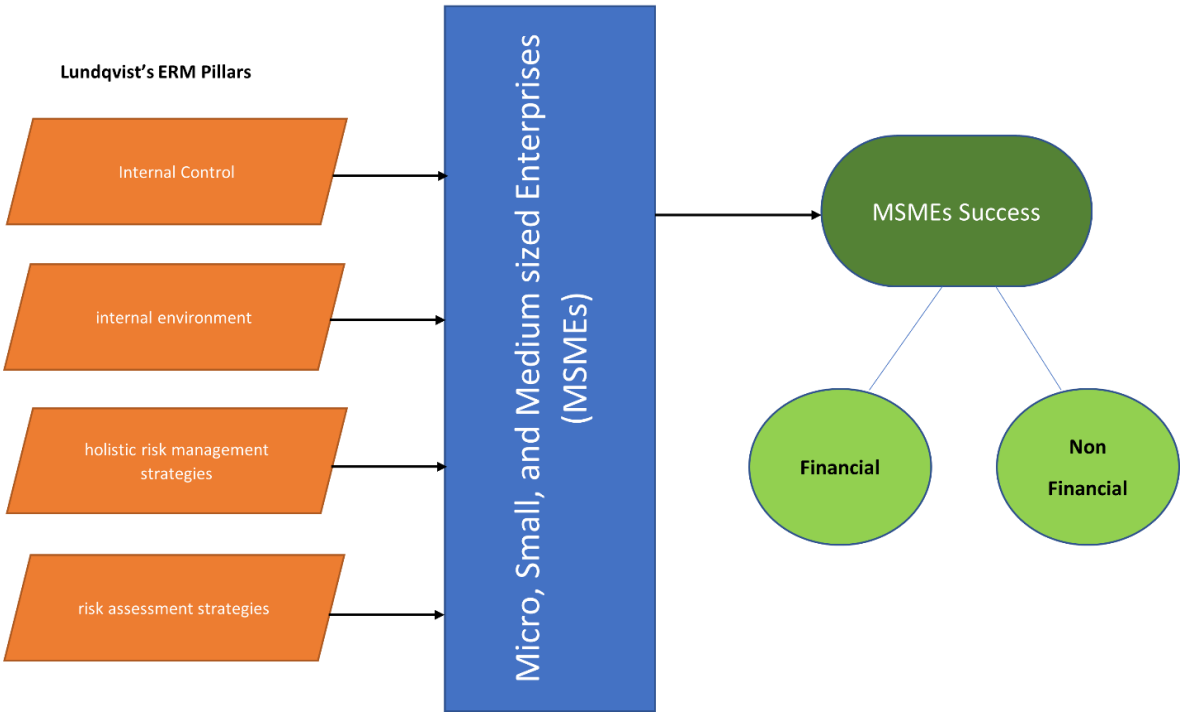
The risk environment, internal controls, and RM within Jamaican MSMEs were fundamental to my study. I followed Lundqvist's (2014) four pillars of ERM, which demonstrated that risks and corresponding processes within an organization are grouped under one of the following four categories: general internal environment and objective setting; general control activities and information and communication; holistic organization of RM; and specific risk identification and risk assessment. Boholm (2019)

demonstrated that an entity's internal and external environments and RM are essential for success. When examined, Boholm's factors can be summarized using Lundqvist's pillars of ERM.

All businesses are affected by profitability; profitability influences the level of confidence investors and other stakeholders have in the business (Chiladze, 2018; Nariswari & Nugraha, 2020). Factors that affect profitability also affect business growth; these two variables have positive correlations, especially in the early years of business operations (Yadav et al., 2021). Walker (1887) established the rent theory of profit. Walker posited that profit is a differential business ability. In a metaphorical sense, Walker likened profits to rental income, noting that superior plots of land attract higher rental costs than those with no unique appeal. Similarly, exceptional businesses can reap increased profitability and growth. MSME organizations that implement an ERM framework are more efficient and resilient, reducing operating costs and increasing their appeal (Lundqvist, 2014). As applied to this study, Lundqvist's (2014) ERM theory holds that the independent variables (internal control, internal environment, holistic RM strategies, and risk assessment strategies) predict MSMEs' business success. The independent variables were measured using a survey scale by Jenya and Sandada (2017) and derived from Lundqvist. MSMEs' business success, the dependent variable, was measured by the survey scale developed by Chandler and Hanks (1993). Figure 1 is a graphical depiction of Lundqvist's ERM theory as applied to MSMEs' success.

Figure 1

Lundqvist's ERM Theory Relating To MSMEs' Success



Operational Definitions

RM is a complex science that must be interpreted so that various practitioners can understand and appreciate it. This was the case of Borgonovo et al. (2018), who demonstrated the commonalities between the fields of RM and decision making. In demonstrating similarity, Borgonovo et al. showed that these fields used different language styles to mean the same thing.

Business growth: A business is successful if it experiences asset and cash growth, sales growth, and return on equity (Chandler & Hanks, 1993).

Enterprise risk management: ERM is a holistic look at the business entity to identify risks and be strategic in treating the risks to increase the value of the business entity (Anton, 2018; Committee of Sponsoring Organizations of the Treadway Commission [COSO], 2017; Fraser et al., 2021; Mottoh & Sutrisno, 2020).

Micro-, Small- and Medium-Sized Enterprises, MSME MSMEs are not considered large within the economy they operate and for Jamaica, MSMEs are businesses that employ a maximum of 50 persons and have annual sales of less than 425 million Jamaican dollars (JMICAF, 2019)

Risk: Risk is the uncertainty of an event occurring that could distort one's planned outcome (Alagar & Wan, 2019)

Small- and Medium-Sized Enterprises, SME SMEs are a subset of MSMEs and within the context of Jamaica, SMEs are businesses that employ a minimum of six persons but not more than 50 persons and have annual sales of exceeding 15 million Jamaican dollars but less than 425 million Jamaican dollars (JMICAF, 2019)

Assumptions, Limitations, and Delimitations

Research conclusions are sensitive to data, processes of collecting data, arriving at conclusions, and reporting. Controlling the research conditions does not just improve the quality of the research but also reduces the research time, expense, and other resources (Verma & Abdel-Salam, 2019). In cause-effect studies, researchers have had to put limitations on the research subjects to prevent or reduce the impact of threats to the research's validity. These threats include maturation, history, and selection effects. In this section, I outline the conditions I placed on my study. These conditions were the

assumptions under which I conducted the study, the limitations, or weaknesses I accepted my study would have, and the delimitations or boundaries I imposed on the study.

Assumptions

A general feature of research is the use of assumptions. Employed also in project management, an assumption is the acceptance of a fact used in the study but where the respective fact has yet to be verified either by the current or any prior study (Browning, 2018; Theofanidis & Fountouki, 2018). For this study, I assumed that the characteristics of MSMEs were independent of their geographical location in Jamaica and whether they operated in the formal or informal Jamaican economy. I assumed that the respondents in the survey research would be drawn from a knowledgeable audience who would not misuse or take advantage of the midpoint or neutral scale. Further, I assumed that participants were willing and available to participate in the study and that each participant would be fulsome and honest in responding to each survey question.

Limitations

Limitations of the study were the embedded weaknesses within the study that I had no control to contain. Some indicators of the study might not have been measurable or identifiable but could have been powerful enough to invalidate the entire study (Peter, 2018). Jamaica has a high informal economy, which includes unregistered businesses and registered businesses that participate in undocumented transactions to evade taxes (Miller, 2018). Representivity would imply that I have proportionate numbers of businesses in the sample as per the total population of MSMEs in Jamaica, but that was difficult to obtain. Also, since my sample was drawn from MSMEs who operate in the

Kingston metropolitan area of Jamaica and where this group is uncharacteristic of MSMEs throughout Jamaica, the representivity and reliability of my study for extrapolation to the entire Jamaica would be questionable. Similarly, participation in the study was voluntary. Where a particular class of MSMEs chose not to participate or to be less than accurate in their responses, conclusions drawn from the study would be spurious as it may not be sufficiently representative of all classes of MSMEs.

Delimitations

Delimitations are the conditions imposed on the study to ease the research (Weiler et al., 2018). There are three delimitations of my study. First, I delimited the sample to MSMEs operating in the Kingston metropolitan area of Jamaica. Second, my sample consisted of entities registered with the Government of Jamaica. Third, I did not analyze data by demographics to identify classifications of leaders with differentiated success relative to the implementation of ERM; for this study, I was not interested in whether female leaders, for example, (or any other demographic group) who implemented ERM had better business success than male leaders.

Significance of the Study

Notwithstanding the increased support from the Jamaican government, MSMEs continue to have a poor success rate. Herrington et al. (2017, p. 71) showed that in Jamaica business formation is 9.9% of persons aged 18-64. MSMEs' discontinuance rate is 9% of persons aged 18-64 (Boodraj et al., 2017, p. 3), resulting in a discontinuance rate of 91% of business formation. Herrington et al. (2017, p. 25) postulated that 56% of discontinued MSMEs resulted from their businesses' lack of profitability. The

implication is that of every 10 MSME formations in Jamaica, more than five are unsuccessful and end up discontinuing.

Contribution to Business Practice

Business leaders need help to maximize their organizations' profitability and growth. In this study, I examined an existing business problem using theoretical frameworks. Jenya and Sandada (2017) demonstrated a strong positive correlation between SMEs' sustainability, profitability, and ERM tools and controls implementation in Harare, Zimbabwe. This study may demonstrate to business leaders that ERM is a tool to improve their businesses' profitability and growth. The study may also be significant to business leaders because it may guide ERM implementation at different business stages, life cycles, and needs. By using Lundqvist's (2014) four pillars of ERM, MSMEs would not just mitigate their risk exposures and be more efficient, but also correct some significant deficiencies in growth and business development (Habiburahman et al., 2019).

Implications for Social Change

MSMEs are significant players in reducing poverty. MSMEs in Jamaica employ most of the labor force (JMICAF, 2019). The Statistical Institute of Jamaica (2019a) reported that 39% of the Jamaican labor force is in the informal economy and employed by MSMEs. The need to survive dominates the motivation for startups among most MSME owners, but these types of MSMEs are at a greater risk of failing (Fairlie & Fossen, 2018; JMICAF, 2019). Even with the greater likelihood of sustainability of opportunistic MSMEs, both opportunistic and necessity MSMEs have difficulty accessing finances, employing professional assistants, and implementing growth systems

(Fairlie & Fossen, 2018; Habiburahman et al., 2019). Using Lundqvist's four pillars of ERM could create new business models that would be unique to each business and create significant business opportunities for growth and expansion (Sobir, 2020; Walker, 1887). Correcting the fundamental issues of MSMEs by implementing Lundqvist's (2014) four pillars of ERM, MSMEs could reduce poverty and positively impact health, education, and other social developments in Jamaica's local communities.

A Review of the Professional and Academic Literature

The literature review was a necessary component of this doctoral study. A literature review provides the triangulation of established perspectives on a subject (Paul & Criado, 2020). The literature review is an independent disquisition that connects past and current views on the same subject (American Psychological Association, 2020). The literature review is used to unpack the research problem and gain insight into the various approaches and limitations experienced in solving the problem or a closely related problem, as well as forms the basis for the theoretical and methodological frameworks to guide the study (Paul & Criado, 2020; Shahsavar et al., 2020). I conducted this literature review to develop supportive evidence for the need to understand the relationship between ERM and the success of SMEs and the approach employed in this study.

RM is an important concept that directly affects the business's internal and external performance. Managers in SMEs need to properly understand risk identification, evaluation, and management for their firms to be profitable (Wijayanti et al., 2021). Failure to initiate appropriate risk identification, analysis, and evaluation mechanisms could lead to the liquidation of organizations (H. Shah & Bhatnagar, 2020). The primary

benefits of ERM in SMEs include increasing financial performance, improving SMEs' public image, increasing employee and customer engagement, and improving service or products (Silva et al., 2018). Ineffective ERM in SMEs threatens the existence of the firm and the inability of the organizations to meet its obligations to internal and external stakeholders.

In my literature review for this study, I conducted an analysis and synthesis of the relationship between ERM practices and the success of MSMEs, and useful information that addressed the knowledge gap relating to the relationship between ERM and the success of MSMEs. The literature review was conducted through the analysis of several sources from inquiries of the university's library database. The databases that I searched included ScienceDirect, EBSCOhost, PubMed, Google Scholar, ProQuest, and SAGE. Searches were conducted using key terms: *risk management, risk management in SMEs, risk identification and management, SMEs' success,* and *SMEs' performance*. A total of 90 articles were used in the literature review. To enhance validity, I ensured that at least 85% (77) of the sources used were peer-reviewed articles published from 2019–2023. The literature review included an analysis of Lundqvist's (2014) ERM model rival theories, the theoretical framework, ISO 31000-2009 framework, RM and ERM, theoretical foundations of RM, measurement, independent variables, dependent variable, methodologic issues, and a summary.

Micro-, Small-, and Medium-Enterprises

There is no general definition or classification of MSMEs. The International Finance Corporation (IFC), a member of The World Bank Group, proposed that MSMEs

be classified by their number of employees and sales turnover (A. Stone, 2019). Countries of varied sizes splinter the world economy; a large business in a small economy would be considered a small business in a large economy. In the European Union (EU), MSMEs are classified as firms with up to 249 employees, having an annual turnover of less than Euro 50 million, and having less assets than Euro 43 million (European Union Commission [EUC], 2020). In the United States and Canada, MSMEs are classified as businesses that employ fewer than 500 persons and have maximum sales turnover dependent on their sector (SBA Office of Advocacy, 2018; Sidek et al., 2020).

Consistent with the IFC, Jamaica's Ministry of Industry, Investment, and Commerce used the number of employees and total sales to classify MSMEs (JMICAF, 2019; A. Stone, 2019). In Jamaica, a large business employs at least 50 persons and has sales turnover of at least 425 million Jamaican dollars. For the world economy, IFC classified MSMEs as employing a maximum of 300 persons and having annual sales that do not exceed 15 million U.S. dollars (A. Stone, 2019). Table 1 below shows the classification of MSMEs in Jamaica and by the IFC for the world economy.

Table 1

Jamaica's and the IFC's Classification of MSMEs

	No. of Employees		Annual Sales/Turnover & Asset Value	
Firm Size	Jamaica	IFC	Jamaica	IFC
Micro	≤ 5	≤ 10	≤J$15 M	≤US$0.10M
Small	6 – 20	10 – 50	>J$15 M, ≤ J$75M	>US$0.10M, ≤ US$3M
Medium	21 – 50	51 – 300	>J$75M, ≤ J$425M	>US$3M, ≤ US$15M

Note. Based on JMICAF (2019) and A. Stone (2019)

Main Theory: Lundqvist ERM Model

I used the Lundqvist ERM model to guide my study. Lundqvist (2014) developed the model after researching how firms implement risk measures in their organization. Lundqvist proposed four ERM pillars: general internal environment and objective setting; general control activities, information, and communication; holistic organization of RM; and specific risk identification and risk assessment activities. These four pillars of ERM framed my research question.

The Lundqvist ERM model is a simplified approach for MSMEs. Researchers organize the various complex ERM approaches into four distinct pillars, with two being nonrisk-related items and the others being risk-related items (Lundqvist, 2014, p. 412). With this model, entities could benefit from ERM by implementing the nonrisk-related pillars: general internal environment and objective setting; and general control activities, information, and communication. These two pillars can be used by a firm mitigate small risks (Lundqvist, 2014). Further, implementing a stepwise approach results in the model being perfected and aligned with desired outcomes (Haalboom et al., 2021). Kanu (2020)

further suggested that ERM on its own does not result in business success; instead, businesses are successful when ERM is implemented with strategic planning. H. Shah and Bhatnagar (2020) suggested that MSMEs do not implement ERM because they perceive that the ERM is expensive and will add costs. With Lundqvist's model, this fear disappears by implementing the model strategically beginning with the first two pillars.

Pillar 1: General Internal Environment and Objective Setting

The first pillar of the Lundqvist model of ERM is the general internal and objective setting component. This pillar is a prerequisite to implementing the ERM (Lundqvist, 2014). The general internal environment and objective setting makes it easy for the firm to implement the ERM strategy successfully. Moshesh et al. (2018) suggested that a successful ERM is tailored to meet the idiosyncrasies and needs of the organization in which it is implemented. Further, in implementing ERM, prior awareness of people's behavior, roles, job functions, and interactions, and knowledge is critical for the success of the ERM as they remove major issues, which could or potentially frustrate the ERM process (Jean-Jules & Vicente, 2020). Key RM technicians view internal controls as the driver of ERM processes (Tola, 2020). These strategies, goals, and rules that govern jobs and people interactions are determined within the organization's internal structures or under Piller 1 (Lundqvist, 2014; Moshesh et al., 2018). Most of the elements of this pillar may be implemented with no connection or relation to the RM or ERM practice (Lundqvist, 2014).

The internal environment includes general activities or functions that are executed independently yet important in implementing the ERM. Without proper internal

structures immature businesses are bound to be unsuccessful (Nikolić et al., 2018; Njanike, 2020). Klychova et al. (2021) suggested that the internal environment frames the functionaries for decision making and the bases for operations. The strategies MSME leaders embed in the internal environment of the MSMEs would determine the level of profit the MSMEs make; the success of the MSMEs. Klychova et al. (2021) suggested that the components of that influence businesses' profits are decided within the internal environment of the businesses. Expense allocation, prioritization, and what defines competitive advantages are fundamental strategic objectives that correlate positively with success (Klychova et al., 2021; C. Wang et al., 2021). Under the Lundqvist model, in the internal environment strategies are set and managed with a written strategic plan of how to achieve company mission; defined performance targets to determine whether the firm is achieving its goals and objectives, and the development of a system to ensure that policies and procedures are followed, functioning, and effective (Lundqvist, 2014).

Successful businesses do not operate by inertia; personal interaction is necessary to make the business successful. The internal culture or ways of operating, and the social norms of the members of the organization could determine whether the business is successful or not (Seo & Lee, 2019). Elements of these norms and culture include ethical standards held by management leaders, continuous training of employees on ethics, and documented procedures for handling operational activities. Lundqvist (2014) suggested that in the internal environment, leaders must recognize the input of the human capital and that contained in the internal environment are well-defined policies for hiring and terminating employees, clarity of duties and responsibilities, a well-written document

describing the structure and responsibilities of the board, and well-defined performance requirements and incentives for employees at all levels.

Castro-Silva et al. (2019) and Upadhyay and Kundu (2019) supported Lundqvist (2014) and further suggested that quality management leaders establish strong governance and good working environment that result in business success. Effective management allows dialogue among members of the organization and promotes high ethical standards. Leading with integrity builds the organization and promotes a corruption-free environment without compromising on wrongful acts of members of that organization (Bussmann & Niemeczek, 2019; Gaillard & DeCorte, 2020). The system to recognize and incentivize staff results in a culture for honesty and industry, thereby promoting business success (Teichmann et al., 2020).

Internal control factors have an important impact on the success of an entity. Hanggraeni et al. (2019) defined internal control as a combination of policies, procedures, strategies, functions, activities, and plans put in place by management leaders to realize the set goals and objectives. Internal control can be said to be one of the determinants of the success of an MSME (Garone et al., 2020). Previous research showed a strong relationship between the internal control of an organization and the ability of a firm to mitigate risks, especially avoiding bankruptcy and financial losses (Akmeşe & Gündoğan, 2020). Firms' internal control is the center of interest among researchers and practitioners. Auditors pay more attention to internal control processes when conducting their audits. A well-designed and effective internal control ensures compliance with required procedures and policy requirements, avoiding possible errors and irregularities.

Internal control is an integral part of management, and lack of it leads to disorganization, inefficiency in operations, little compliance with applicable laws and regulations, opacity of financial reporting, high staff turnover, and low staff morale (Chang et al., 2019; Garcia et al., 2021). Hanggraeni et al. added that internal control determines the level of comparative advantage the business has over its competitors. Implementing appropriate internal controls provides reasonable assurance that organizational goals or objectives will be achieved.

Studies conducted in different sectors demonstrate that internal control factors have a significant influence on a firm's performance. Akmeşe and Gündoğan (2020) highlighted an example of how managers in the hotel industry consider internal control to be an important part of business success. The researchers opined that internal control has a very strong impact on their realization of enterprise goals and objectives, which also increased their profitability. Bentley-Goode et al. (2017) reported that a company strategy is the foundation of strong internal control that leads to quality financial reporting. In addition, strong internal control increases efficiency and compliance with laws and regulations, leading to high returns and business success in other spheres. Büyükçoban et al. (2018) investigated the influence of business performance on the formation of an internal committee and concluded that poor performance of an enterprise signifies a weak internal control committee. Glowka et al. (2020) also found that internal control has some influence on the performance of the business, in terms of efficiency and compliance with legal requirements, which all affect business success. Internal control is a strong pillar in relation to the RM process (Bentley-Goode et al., 2017). Previous researchers have not

investigated the influence of a controlled environment on the success of MSMEs (Bentley-Goode et al., 2017). It is important to investigate how internal control, as a pillar of ERM, influences the success of SMEs.

Pillar 2: General Control Activities, Information, and Communication

Communication is a vital tool for business success. Like the first pillar, Lundqvist (2014) noted that communication, though essential to the ERM strategy, is not directly related to the ERM strategy. Especially with globalization, the use of communication enables business owners to be informed of their internal and external environments so that decisions can be taken that lead to adaptability and improved competitiveness (Đelošević & Spasojević, 2021). P. Wang (2020) suggested that when carefully packaged, communication within an organization could improve the success of that organization. Communication, whether verbal or nonverbal, has been effective in boosting staff morale to surpass the company's key performance targets (Maran et al., 2019; Steinmann et al., 2018). Throughout the organization, management leaders have the sole responsibility to set the pace for RM by communicating to all employees that all employees are of a common understanding and exist within a good atmosphere to discuss risks, risk exposures, risk impacts, and risk mitigation strategies (Etges et al., 2018).

The content of the communication is just as important as the activity of communicating. Information builds knowledge and when that knowledge is uniform within an organization, the products and services are expected to be consistent. It is this level of consistency and knowledge transfer that Andriotis (2018) and Ross (2018) suggested would accelerate businesses' net incomes, improve business processes, reduce

exposures to risks within the organization, and build market share. Successful ERM requires that information on risks is shared among the players in the RM chain and that protocols are developed to communicate internally and externally especially if or when a risk crisis is current (International Organization for Standardization [ISO], 2018; Przetacznik, 2022). Information is not just what is communicated among people; data are also information. Successful businesses keep a pulse on customers and respond to customers' needs by collecting, aggregating, and analyzing customers' data and feedback (Hajli et al., 2020). Businesses outpace their peers when combined data collected from the market and intracompany are analyzed and used to guide business initiatives, product developments, and customer satisfaction (Liang et al., 2022).

Successful businesses have controls that govern how things get done within the organization. Failure in controls in managing MSMEs has been one of the major factors that led to their premature demise or stymied growth (Tran & Nguyen, 2019). Macheridis (2022) suggested that controls aid efficiency and success within the organization processes and allow for the easy identification of improvements. MSMEs are competing with major players within their industries; controls allow wastes to be minimized and maintain standards within the operation; improving competitivity and goals attainment. Controls are not just about policies and guidelines, but they include checking alignments with comparators and keeping staff aligned with company objectives. These checks and balances with comparators and for staff alignment would result in management leaders determining whether the entity is on a path of growth relative to comparators and identify risks that could thwart or are currently inhibiting growth (Duramany-Lakkoh et al., 2022;

Novaković et al., 2018). Because small businesses are usually not as financially resourced as large businesses, a small fraudulent or deceptive activity against the small business could significantly impact its longevity. Internal controls have been effective in controlling fraud, embezzlement, and other forms of deceptive activities within the company and protecting reputations against harm and betrayal. Where users of the internal control systems are not informed or are appreciative of its benefits, the internal controls may not produce the potential benefits to aid business growth and reduce risks (Lestari et al., 2019).

Pillar 3: Holistic Organization of Risk Management

Pillar 3, holistic organization of risk management (HORM), is a critical component of the ERM characteristics. Most of the elements in this component are part of a firm's strategy with a direct link to RM and ERM (Lundqvist, 2014). Yap and Yap (2016) noted that the use of HORM addresses the holistic nature of RM and how it is organized within the organization, including the determination of risk appetite, risk strategy, and a central body charged with the management and execution of the RM strategy throughout the organization. The risk strategy is used to outline targets; the process for identifying risks that threaten the organization's strategic targets; the management of those risks by way of mitigation, transfer, or absorption; and the level of risks the institution can solely retain without impacting its longevity. The use of HORM is positively correlated to the effectiveness of the entity's risk strategy and the communication of the risk strategy to both internal and external stakeholders (Hopkin & Thompson, 2021).

HORM is not just about threats or risks; HORM also includes opportunities. The use of HORM would not be holistic if it was focused entirely on risks that threaten but ignores those risks that create opportunities for the organization (Bohnert et al., 2018; Gatt et al., 2021; Půček et al., 2021). The identification of an opportunity for exploitation must be followed by a process to examine the level of significance of the opportunity and whether such opportunity falls within the entity's strategy for meeting its objectives (Půček et al., 2021). Through HORM, leaders use ERM to identify mechanisms to reduce an entity's costs and improve the efficiency of processes, thereby increasing the entity's net income (Maruhun et al., 2021). Maruhun et al. (2021) further highlighted that by using HORM as a conduit in executing ERM, areas of underinvestment within the entity and cash flows that could distress the entity are revealed for mitigating actions to be discovered and implemented.

Glowka et al. (2020) demonstrated that the effectiveness of ERM might be dwarfed by who is leading the ERM process and especially by the short tenure of the person leading the organization. In an effective and efficient ERM, members of the HORM must have clearly defined roles and responsibilities headed by senior leaders who have a strong commitment to the ERM process (Gatt et al., 2021). An effective HORM requires participants who have a strong commitment to be effective in sharing information and data promptly to the requisite stakeholders (Gatt et al., 2021). Members of the ERM should be sufficiently knowledgeable of ERM to know what enhancements of the ERM could improve the company's profitability and efficiency ratios. Shad et al. (2019) demonstrated that incorporating sustainability reporting as a feature of the ERM

would improve the economic value added (EVA) of the company through positive changes in the company's accounting ratios and improving information symmetry among stakeholders.

This pillar of HORM most directly applies to this research because it contains the key items that characterize the ERM strategies. Under this pillar is the organization, the topography of the ERM process within the organization, being clearly defined. Questions of who spearheads the ERM process, the roles and responsibilities of the board, senior managers, and other players; and the *how*, the *what*, and the *to whom* information will be shared, are addressed under this pillar. Importantly, it is under this pillar that participants' interest in and commitment to the ERM process are established.

Similarly, under this pillar, determinations are made of how the ERM will function, the expected impact ERM will have on various stakeholders, and the potential impact ERM will have on the company's financial outflows, cost savings, and revenues. Most importantly, the HORM sets out the process for mitigating, transferring, and exploiting risks within the organization. This pillar will largely inform whether firms that successfully implement this pillar have a greater chance of success compared to companies that do not have this pillar.

Pillar 4: Specific risk identification and risk assessment activities

The tasks of risk identification and risk assessment are key components of RM. Using risk identification and assessment helps business leaders understand the nature and severity of their risk exposures and enable them to implement strategies and early warnings to reduce negative impacts and effects (Homonoff, 2018; Kliem & Ludin,

2019). The use of risk identification enables the determination of the existence of risk exposure, but assessment enables the defining, categorizing, and prioritizing of risks and risk exposure (Rimantho & Hatta, 2018). Chakraborty and Ghosh (2020) added that risk assessment does not just enable the quantification and qualification of the risk exposure or risk event, but it enables the determination of causes or triggers. Hopkinson (2010) demonstrated that in the risk identification process managers could be a risk factor as they, along with politics, could hinder the process of identifying or correctly assessing risks or risk exposures.

Lundqvist's (2014) fourth pillar of ERM implies that the business leader must consider internal and external exposures in identifying specific risks to the organization. Risk identification and risk assessment involve extensive review of documentation and monitoring as the RM framework evolves. It results in the identification and chronicling business leaders' attempts to prevent or overcome downside risk. Risk identification highlights the need for a well-documented paper trail of the RM process within the organization. Some of the risk treatment strategies in this model include the consideration of different types and sources of risks: financial risks, strategic risk events, economic events, compliance events, contracts, and people. Starosta (2021) suggested that analyzing the embedded risks of contractors could reduce provisions for bad risk events occurring.

The proper documentation of the risk identification steps can be seen as a value-adding component of the RM process. This can be seen when the strategy of a given entity acts like a filter against the universe of risk events and allows only those events

directly linked to a specific business venture to be identified and analyzed. With potential downside risk events, upside risk events or business ventures can be seen emerging from the RM process thereby giving decision-makers an insight into further business opportunities the entity could explore. The company would be enabled to be diversified; increasing the probability of business success and higher company value. An example of a business strategy leading to upside risk events can be seen in the production of printers and copiers. Companies producing printers also must supply ink with the new printers they sell. These companies have the capacity to supply ink cartridges either directly or through a strategic partner. HP is one such supplier and through its business strategy has dominated the manufacturer and sale of both printers and cartridges (Ding et al., 2020). This pillar will help to understand whether the risk mitigation strategies implemented by firms can help the firms become resilient and achieve business success defined in terms of growth, business volume, satisfaction with performance, and performance against the competitors.

Theoretical Foundations of RM

Given that I use the ERM framework for my study, it is important to understand the theoretical foundations and methods of classifying and managing risks as suggested by other scholars. Risks faced by businesses are very diverse and complex such that scholars have classified risks into two main categories, static or pure risks and dynamic risks (Verbano & Venturini, 2013). Hopkin and Thompson (2021) added that pure or static risks are risks that only lead to negative consequences and create no chance for the business to leverage the situation to make an earning. Pure or static risks are accidental

and cannot be predicted, including the risks linked to disasters and pandemics (Büyükçoban et al., 2018). Verbano and Venturini (2013) noted that such risks are traditionally mitigated through insurance and by extension, insurance-like schemes. Insurance-like schemes such as industry associations give insurance coverages but are not formal insurance. Business leaders are not mandated to obtain optimal insurance coverages for their firms and must strike a balance between absorbing the risks or transferring the risks to the insurance company (Gentile et al., 2021). Selecting appropriate insurance and optimal coverages for pure risks could promote the future growth and success of an entity.

The other category of risks is dynamic business risks. Dynamic risks can create a negative impact, positive impact, or both (Bruwer et al., 2018). Dynamic risks are associated with the management of the enterprise, and they can be predicted and mitigated through ERM. Some of the dynamic risks include a business investment that leads to losses (Hopkin & Thompson, 2021). This study will be based on the dynamic risks which are associated with the internal control of a business enterprise. Several studies show that internal control is an important factor in the mitigation of enterprise risks or the implementation of ERM (Davis et al., 2017; Vij, 2019). There is a direct link between the internal control of an enterprise and the successful implementation of RM (Dvorski-Lacković et al., 2021). Bruwer et al. (2018) contributed that the sustainability of an organization will largely depend on the strengths of its internal control.

Previous findings on ERM align with the three theories of RM proposed by Dubin (1976). The three commonly studied theories or concepts of RM include the RM cycle,

the RM, and the methods of RM (Bogodistov & Wohlgemuth, 2017). The RM cycle is a key process used in identifying, analyzing, evaluating, and monitoring risks (Bruwer et al., 2018). The first task in RM is to identify the specific risks to which a business or a project is exposed (Büyükçoban et al., 2018). Once the risks have been identified, the team in charge will evaluate the risk in terms of the probability of occurrence and consequences of the risks (Wideman, 2022). Evaluating the risks allows the risk manager to rank according to the likely severity and frequency of the risk. The risk manager then examines the business process to track and monitor the risks (Wideman, 2022).

The last step of RM theory involves the management of risks. Hopkin and Thompson (2021) suggested four techniques of RM, including tolerating or accepting the risks, controlling or reducing the risks, transferring the risks to another entity through insurance, and eliminating or avoiding the risks altogether. Spikin (2013) split the RM process into risk control (avoiding, tolerating, or reducing the risks) and risk financing (risk sharing and transfer methods).

RM and ERM

Every successful business has its mission, goals, and objectives that its leaders aim to achieve by the end of a particular period (Adewole & Umoru, 2021; Hans, 2018). The achievement of these goals and objectives depends on how the business leaders manage the major risks their entities face in the internal and external business environments (Hopkin & Thompson, 2021). Business leaders have placed greater concentration on the downside risks exposures as these have the potential to create financial losses to the firm (Glowka et al., 2020).

The ERM theory is used to understand RM practices and processes in SMEs. Colasante and Riccetti (2021) suggested that the propensity and attitude to risks are subject to geography and demographics of people. This suggests that risk could mean different things to different people. In this study, the understanding of risk is assumed absolute, and that risk defines the uncertainty of an event occurring that could distort one's planned outcome (Alagar & Wan, 2019). The impact of such an event could be positive or negative.

Business risks can be predicted through the risk manager's experiences; using the RM process as a tool, the risk manager could reduce and manage the risk exposures faced by entities. Verbano and Venturini (2013) defined RM as the process of identifying risks, estimating the probability of their occurrence and their possible impacts, and eliminating their impact with minimal use of resources. RM process focuses more on insurable risks or the negative sides of risks: losses and increased costs (Bruwer et al., 2018). As the business environment evolves, the concepts of RM have also been evolving through the years, necessitating the need for corporate leaders to relook at their RM processes for alignment with internal and external threats. The RM concepts have been subsumed under ERM in the modern business environment.

The evolution of RM to ERM to align with the business needs of identifying and mitigating different sets of risks and the changing characteristics of risks is significant. Laws and regulations have changed as a measure to contain the increased risks, and by extension, business leaders have been paying greater attention to the changing risk environment (Santos & de Oliveira, 2019). Typically, ERM represents a modern form of

RM in which risks are handled holistically. The main difference between RM and ERM is that ERM creates value for the business, while RM only focuses on identifying risks. Shital and Thekdi (2022) defined ERM as an enterprise-level minimal assessment, quantification, financing, and RM. Supported by Apaloo and Bright (2022), Shital and Thekdi noted that ERM creates value for the enterprise. MSMEs need to employ the concepts of RM more than larger entities because MSMEs have more limited resources to respond to internal and external risks that threaten their success and survival (Verbano & Venturini, 2013).

ERM is vital to the survival of MSMEs in risky environments. The use of ERM allows MSMEs to identify and manage risks, thereby creating and protecting MSMEs' competitive advantages (Hanggraeni et al., 2019). Mikes and Kaplan (2015) expanded this concept by reporting that ERM processes challenge existing assumptions, communicate information effectively, address gaps in controls, and complement traditional RM within an organization, which helps companies build and retain key core competencies. Bogodistov and Wohlgemuth (2017) also reported that ERM processes minimize the volatility of returns and help ensure the organizational sustainability and survival of the firm by providing managers with a checklist for monitoring, identification, and revolving of potential threats in the business environment. Dîrvă (2017) also argued that business leaders might leverage ERM to enhance shareholder value by building better business strategies, relationship management, product pricing, capital management, and risk transfers. Each of these varying elements combines to become a useful ERM definition for business leaders. Ideally, for a business to achieve its set goals and

objectives, business leaders must develop a mechanism through which they can identify, mitigate, or internalize the obstacles that will prevent them from achieving their goals (Khurana et al., 2019).

The adoption of ERM helps business leaders reduce uncertainty, aids business continuity, and promotes the image of the enterprise both internally and externally (Hanggraeni et al., 2019). For instance, Silva et al. (2018) identified that holistic ERM aligns directly with the performance of an organization and M. A. Khan et al. (2021) explained that the greater the sophistication of ERM in businesses, the more sustainable and valuable the business. Saeidi et al. (2019) added that firms that implement ERM commensurately improve their competitive advantages. Typically, the correct implementation of a holistic ERM process increases the value of an organization and can lead to increased profitability (Silva et al., 2018). Hanggraeni et al. (2019) researched to establish the value or the importance of adopting an ERM in businesses and found that the holistic implementation of ERM has a positive effect on the cash flow of an organization, leading to increased cost and revenue efficiency. Yap and Yap (2016) concluded that more than 80% of business leaders and stakeholders believe an effective, holistic RM system is necessary for organizational sustainability.

Many MSMEs fail to survive beyond their fifth year of existence (Boodraj et al., 2017, p. 3; Herrington et al., 2017, p. 71; U.S. Small Business Administration, 2018; Woldehanna et al., 2018). Poor RM strategy among SMEs thwarts SME leaders' ability to appropriately identify and quantify different risks and this inability is believed to contribute to such failure among SMEs (Boodraj et al., 2017). Hill et al. (2022)

demonstrated that leaders of MSMEs in Jamaica have a low perception of the linkage between their businesses' success and effective management of their businesses' internal environment and associated risks. Interestingly, when asked to state the reasons preventing success, none of the MSMEs' leaders who participated in the 2018 Jamaica survey of establishments saw internal factors as a reason (STATIN, 2019b).

Implementing ERM strategies in MSMEs helps MSME leaders to identify and manage several risks in the business environment, and to develop a risk strategy for addressing the identified risks beyond the first 5 years (Apaloo & Bright, 2022; Hanggraeni et al., 2019; H. Shah & Bhatnagar, 2020). PWC was satisfied that ERM will support MSME leaders to align business strategies with possible risks, lower the operational surprises that lead to instability and losses, improve their deployment of capital, and help them seize investment opportunities by evaluating the full range of risky events (Boodraj et al., 2017). In their study of the importance of ERM to the survival of MSMEs, Ade et al. (2020) concluded that of the 400 MSMEs examined, business leaders of MSMEs who implemented ERM strategies within their entities significantly increased the longevity of their organization. The use of ERM in MSMEs is important because it helps them add value for the stakeholders and create a sustainable competitive advantage and increased profitability by aligning profitability goals to possible risks in the environment and providing a framework to achieve the planned profit and manage the associated risks.

The majority of MSMEs face several challenges that inhibit the successful implementation of ERM. While the benefits of ERM cannot be ignored, it is mostly

perceived by most MSMEs as an added cost (H. Shah & Bhatnagar, 2020). Many MSMEs have limited resources which discourages them from implementing ERM strategies since there are other competing priorities. Marcinkowski (2016) revealed that many firms avoid or are not interested in ERM because they lack knowledge and experience of ERM practices and ERM frameworks including the framework suggested by the Committee of Sponsoring Organizations of the Treadway Commission (COSO, 2017). Marcinkowski added that the reluctance to implement ERM is multifaceted and includes the lack of skills and human resources, the lack of involvement of the top management leaders in the risk management function, and the strong perception that ERM encourages bureaucracy. Some MSMEs do not understand the value of ERM; they do not pay attention to it. This highlights the importance of this study. Linking the implementation of ERM to business success may encourage MSME leaders to embrace and adopt ERM practices that can play an important role in risk mitigation, a key move toward business success.

Synthesis

The Lundqvist (2014) ERM model helps promote business growth. This model is simple for startups and MSMEs that are not practicing ERM. It has many components that are part of what is required to run a business normally including the code of ethics and communication guidelines, which, since there are no additional costs, makes it efficient for MSMEs at all stages. As the MSME grows, the leaders will then consider the other two risk-related pillars. Since they have already implemented the non-risk-related

pillars, it will be easy to implement the risk-related pillars of the model. The model is appropriate for MSMEs compared to the ISO and COSO frameworks.

Rival Theories

Many businesses develop their own guidelines when implementing ERM strategies. Most models used by companies are borrowed from internationally accepted guidelines or frameworks. Some of the most commonly used frameworks are the COSO (2017), ISO 31000-2009, the Casualty Actuarial Society Framework, the Casualty of Actuaries framework, and the risk maturity model from the RM Society.

COSO

The COSO (2017) is among the most used frameworks. Lundqvist (2014) noted that 24% of participating firms in her study confirmed to have used the COSO framework in combination with internally generated frameworks. The COSO framework identified eight components of the ERM and suggested that they are strongly interrelated. COSO (2017) suggested that the organization's internal environment, setting objectives, identification of risk events, risk assessment, risk response, control activities, information and communication, and monitoring are the central components linked to the COSO framework.

COSO identified the organization's internal environment as the first component of the ERM framework (COSO, 2017). The internal environment is akin to the planning house or the steering committee for how the institution manages and appreciates risk, and plans and executes operation strategies and structures (Wahab et al., 2019). The internal environment drives the philosophy and culture by which the institution operates, accepts,

handles, mitigates, and communicates risks and risk exposures throughout the organization (Kantabutra, 2019; Ketprapakorn & Kantabutra, 2019). With the internal environment, the success and progress of the institution are planned, executed, and monitored, and without a healthy internal environment, institutions are most improbable to succeed (Mardikaningsih et al., 2022; Wahab et al., 2019). Leaders of MSMEs must improve the elements of their enterprises' internal environment for the enterprises' increased success, competitiveness, and longevity (Chandrarin et al., 2021; Kantabutra, 2019; Wardana et al., 2022).

COSO (2017) suggested that the second component for effective ERM is objective setting. In implementing an ERM, objectives will guide the identification, assessment, and mitigation of risks and opportunities (Davis et al., 2017). These objectives will contextualize the identification of risks and opportunities in that they are subject to the entity's risk appetite and entity's mission and vision. ERM defines the process for objective settings, which aligns the risk appetite of the company with the ERM (COSO, 2017). Further linking ERM to the strategic objectives of the company creates an environment within the company for value creation (Vij, 2019).

Every business faces risks and opportunities from sources internal and external to the business. COSO (2017) suggested that event identification is the third component of an effective ERM framework. In event identification, organization leaders identify the possible events that threaten the entity's strategic objectives and opportunities which could be exploited within the organization's mission and vision (Bruwer et al., 2018; Vij, 2019). As businesses evolve, business leaders need to know the business threats and

opportunities to keep them relevant, for example, Moeuf et al. (2019) demonstrated that for their success, MSMEs need external support and that workers and leaders of MSMEs need continuous training.

The firm leaders must determine whether those events will negatively impact achieving planned goals and objectives (Davis et al., 2017). If the event has a positive impact, it presents an opportunity, and if the event has a negative effect, there is a need to assess and respond to the event. For instance, in research conducted by Sari and Sundiman (2019), the possible risks that are associated with a vegetarian enterprise are financial, executive staff risk, activity risk, and intention and behavior risk, which have consequences on the image and growth of the business and could lead to financial loss. The identified risks are analyzed to determine the possible effects of their occurrence and how they can be managed (Bruwer et al., 2018). Risk analysis includes identifying the extent the risk event will affect the goals and objectives of the company (Hopkin & Thompson, 2021). The assessment is done both on a residual and inherent basis and applies qualitative and quantitative procedures. Some risks may present an opportunity for the company to make higher earnings (H. Shah & Bhatnagar, 2020). Through risk assessment techniques, the business can effectively determine two things: the extent of losses that are likely to be suffered by the business, and the possible gains the business could experience by exploiting the risk exposure (Farrell & Gallagher, 2019).

After determining the risk events, their likelihood of occurrence, and their consequences, the leaders of an organization will then be required to devise a response strategy (Borkovskaya & Passmore, 2020). The response may include techniques: risk

minimization, risk sharing, risk financing through insurance, and internalization or acceptance of risk. The leaders will select a set of methods equivalent to the company's risk appetite (Davis et al., 2017). For instance, a hotel eatery's leaders are faced with several risks in the operation of their business that require specific mitigation. The eatery might suffer losses due to food spoilage, requiring the hotel leaders to respond by purchasing a freezer or preparing just enough food for the day (Hopkin & Thompson, 2021). This would require the enterprise leaders to conduct market research to understand its daily food demand (Bruwer et al., 2018). Different industries will have different response types since they also face different types of risks. If the hotel eatery leaders assume the risks they are facing, they may suffer many losses that would lead to closure synonymous with many Jamaican MSMEs.

Control activities are another component of the model which refer to rules and procedures to establish the RM process; they are akin to the checks and balances that make the RM process work effectively. Control activities include approvals by leaders, performance appraisal, security evaluation, and also the allocation of duties and responsibilities (Chalmers et al., 2018). An eatery that is suffering loss of monies due to corruption by members of staff may implement the use of CCTV and the use of electronic payment system to ensure that all the monies go through the right hands. The leaders of the eatery could also assign crucial roles to certain employees to ensure that compliance is enhanced in the business.

Information and communication is the seventh component of the COSO (2017) ERM framework. The relevant information relating to the risks identified is identified,

collected, and transferred to the relevant individuals in a timeframe that allows every stakeholder to carry out their responsibility (Lee, 2021). For an effective ERM, all the stakeholders must understand their roles in ERM and how their actions relate to or impact those of other employees (Kashif Shad & Lai, 2019). There must be free communication from the top down and from down to top for an organization to successfully implement an ERM.

Monitoring is the eighth aspect. Leaders who follow the ERM strategy must be monitored to identify loopholes and new sources of risks continuously (COSO, 2017). Once management leaders identify a risk, the ERM strategy must be modified appropriately. The monitoring process is a part of the normal process of evaluation. The monitoring process helps the organization respond promptly to the changing business environment.

The Committee of Sponsoring Organizations (COSO) of the Treadway Commission COSO developed the framework in 1985 (Lee, 2021). Lee (2021) suggested that the COSO framework was not accepted by business leaders as it was perceived to be complex and lacked universality among firms of varied sizes. The framework was updated to the COSO RM framework of 2017 and treated ERM within a culture, capabilities, and practice underpinning the business strategies for the business (Lee, 2021). Previously COSO treated ERM as a process. The updated COSO framework has five components: governance and culture, strategy and objective setting, performance, review and revision, information, communication, and reporting (Lee, 2021).

ISO 31000-2009 Framework

The ISO 31000-2009 outlines a mechanism to implement ERM in an organization. ISO 31000-2009 is an update to the ISO of 2004. The International Organization for Standardization (ISO, 2009) framework is efficient for individual and portfolio risks. The RM framework has five components. The first step is establishing the context of the ERM. It involves determining the internal and external factors to be considered in the RM process (Davis et al., 2017). This step incorporates setting goals and objectives, assigning duties and responsibilities, and determining the scope of the RM process (Bruwer et al., 2018). Establishing the context of the risk ensures that the RM process aligns with the nature of the organization (Rehman & Anwar, 2019). Setting the context of the ERM also involves an analysis of the internal and external business environment to determine the factors that affect the goals and objectives of the organization (Sari & Sundiman, 2019).

Risk assessment is the second process. It is the process of identifying, analyzing, and evaluating risks. Hopkin and Thompson (2021) suggested that by this component, one understands the possible origin, the likelihood of occurring, and the consequences of risks. The risks identified are then evaluated to determine whether they are manageable or tolerable (Jonek-Kowalska, 2019). The importance of this component is for management leaders to understand all the risks the business faces (Davis et al., 2017).

Risk treatment is the third process. It involves identifying and implementing techniques to manage risks and exposures to risks (Bruwer et al., 2018). Risk treatment is a cyclic process that involves identifying the scope of the risk and whether it is tolerable

or manageable. If the technique is insufficient, other techniques can be deployed (H. Shah & Bhatnagar, 2020). Some methods of treating the risk include avoiding the risk, increasing the risk levels to make higher profits if the risk is tolerable, transferring part or all of the risk or consequences of the risk to a third party, reducing the effects of the risk (Sari & Sundiman, 2019).

Communication and consultation are the fourth step. Communication and consultation must occur through implementing the ERM (Bruwer et al., 2018). All stakeholders should be adequately informed about their roles in the RM process (Hopkin & Thompson, 2021). In ensuring the RM process is efficient, all stakeholders, whether they reside internally or externally in the organization, must communicate (Sari & Sundiman, 2019).

The last step is monitoring and review. Monitoring and review is the process of observing, supervising, and checking to see that the expected changes have taken place as scheduled by the organization (H. Shah & Bhatnagar, 2020). This step is a continuous process that ensures that the RM techniques are working and that the business can conduct as usual (Davis et al., 2017). The ERM strategy must be continuously monitored to identify loopholes and new sources of risks. Once identified, the ERM strategy must be modified appropriately (Sari & Sundiman, 2019). The monitoring process can be done through the regular operation of evaluation (Silva et al., 2018). The monitoring process helps organization leaders respond promptly to changing business environments.

The Casualty of Actuaries Framework (CAS)

The casualty of actuaries' framework covers the hazard, financial, strategic, and operational risks. The CAS framework is commonly used compared to the ISO and the risk maturity model from the RM society. The model proposes seven ERM pillars, including establishing context, identifying risks, analyzing risks integrating risks, prioritizing, treating, and monitoring risks (CAS, 2003).

Establishing context involves the external environment, internal environment, and RM. In the external environment, the enterprise must determine and define the business's relationship within the external environment (H. Shah & Bhatnagar, 2020). This can be done using a strength, weaknesses, opportunities, and threats (SWOT) analysis where the firm determines its opportunities and threats. This step also helps to identify the relevant stakeholders (Büyükçoban et al., 2018). The internal environment context involves identifying the key goals and objectives of the firm, the firm leaders' strategies to achieve those goals, and the key performance indicators (Wijayanti et al., 2021). The internal environment context also includes defining the organization and governance structure (Sari & Sundiman, 2019). The RM context identifies the risk events associated with the business.

The identifying risk step involves detailed documentation of the risk events that are likely to threaten the achievement of the goals and objectives of the firm ((Abdel-Basset et al., 2019). The leaders should also determine which risks can be exploited to give the company an added advantage in the market (Dîrvă, 2017). Analyzing the risk involves determining the likelihood or probability of a risk occurring and documenting

the nature and extent of the impacts (Büyükçoban et al., 2018). This step consists of some analysis techniques: scenario analysis, quantitative and qualitative analysis, and simulation analysis. Analyzing the risks sets the stage for the other steps in the ERM (Davis et al., 2017). Integrating risks involves aggregating the risks and establishing the portfolio effects of the risk. The RM team must determine the risks' impact on the key performance indicators identified in the first steps.

The prioritizing risk step requires the RM team to identify the contribution of each risk in the risk portfolio (Davis et al., 2017). The risks should then be arranged or scaled in order of their impact so that the organization can direct resources to the risks that will have the most impact on the firm (Büyükçoban et al., 2018). Treating the risks involves the deployment of a risk mitigation strategy (H. Shah & Bhatnagar, 2020). Different strategies can be used including avoiding the risk, financing the risk, sharing the risk, and exploiting the risk to maximize returns (Dang et al., 2019). The framework suggests that the most appropriate mitigation strategy for hazards is insurance. The financial risks can be dealt with the use of capital markets, which help overcome interest and foreign exchange risks, while the strategic or operational risks can only be avoided (H. Shah & Bhatnagar, 2020).

Monitoring is the last step and involves the continuous review and monitoring of the risk mitigation strategies. Using the monitoring and review process helps enterprise leaders determine the risks that can be rescaled or reclassified (Büyükçoban et al., 2018). Also, the step informs organization leaders how the mitigation strategies are performing. The ERM strategy must be continuously monitored to identify loopholes and new sources

of risks (Dîrvă, 2017). Once identified, the ERM strategy must be modified appropriately. The monitoring process can be done through the normal process of evaluation (Silva et al., 2018). Using the monitoring process helps the organization leaders respond promptly to the changing business environment.

Risk Maturity Model from the Risk & Insurance Management (RIM) Society

The risk maturity model (RMM) from the RIM society is described as an umbrella since it takes all the other RM frameworks into use. The RMM is not applied as often as the COSO and the ISO frameworks. The RMM proposes five pillars of the ERM, which include risk identification, assessing perceived risk, evaluating the risk tolerance, mitigating the risk and exploiting opportunities, and monitoring (Risk and Insurance Management Society, 2006).

Identifying the risk is the foundational pillar of all the pillars of the RMM. Under this pillar, business leaders are required to determine when, where, how, and why a business strategy, an event, an activity, or a market might inhibit the achievement of business goals and objectives (Risk and Insurance Management Society, 2006). Business leaders will need to analyze the internal construct and operations of the business to identify the internal risk exposures and to determine external risks by examining the market and the industry in which the business operates (Davis et al., 2017). Davis et al. (2017) suggested that the business leader having understood the nature of the risks the business faces, must document and monitor the risk exposures. Identifying the risks includes paying keen attention to risks that were unknown, latent, or underreported (Mendes et al., 2022).

Step two of the RMM is the assessment of risks. This step requires the examination of the risk through consistent and objective criteria to determine the impact, likelihood, and effectiveness of possible control measures (Bruwer et al., 2018). The analysis process will consider the consequences of the identified risks and the opportunities they present (H. Shah & Bhatnagar, 2020). Through the assessment, the potential gains from the risk are determined and enable the firms' leaders to make decisions on how to treat the risks observed or anticipated (Silva et al., 2018).

Evaluating the risk tolerance is the third step under the RMM. The RM team has to determine the risk tolerance level of the company by identifying the opportunities and drawbacks of a risk event (Davis et al., 2017). Two similar companies having the same market and risk environment may have different risk tolerance levels. N. H. Shah et al. (2020) suggested that risk tolerance is multifactorial and not just limited to the amount of free assets an entity or individual may possess. Business leaders' personality traits may contribute to their levels of risk tolerance and decisions relating to business and investment (Antony & Selvarathinam, 2022; Sadiq & Amna, 2019). Leaders' knowing the combined risk tolerance of leaders and of the organization would facilitate or help them decide on how to mitigate the risks faced by the organization (Bruwer et al., 2018). The leadership team must decide on their priorities and scope of the risks while establishing combined risk tolerance of the organization.

Mitigating risk and exploiting opportunities is RMM's fourth step. This step requires business leaders to develop a method or strategy for maximizing the benefits of risk or minimizing the drawbacks and the potential cost of their risk exposures (Sari &

Sundiman, 2019). It involves all stakeholders, including external auditors, who develop methods of lowering, transferring, and mitigating the risks. Mitigating risks is not just risk avoidance; mitigating risk includes risk transfer and creating a financial or procedural buffer to absorb or cushion the risk effects should the risk event occur (Burke & Demirag, 2018). Alshawish and de Meer (2019) described how capitalizing on one's vulnerabilities, and risk exposures, could resound in mitigating and benefiting from their risks vulnerabilities or risks exposures.

RMM's last step is monitoring the effectiveness and efficiencies of the risk mitigation activities. The RM team has to ensure that the changing circumstances do not alter the desired outcome of the mitigation strategy but must determine whether an alternative mitigation strategy is needed (Büyükçoban et al., 2018). In the sophisticated financial world, investors use financial immunization consisting of portfolios of financial derivatives to safeguard against financial shocks (Bashir et al., 2019). The composition of the financial immunization varies depending on the perceived threat but the anticipated effect of the immunization remains fixed: to protect the investor's bottom line (Giansante et al., 2023).

Comparison of the Rival Frameworks

The four rival frameworks of ERM have many similarities, although the COSO framework and others are more detailed. The differences between the four frameworks indicate that different firms will implement different ERMs since there is no universally accepted ERM framework (Bogodistov & Wohlgemuth, 2017). In Jamaica, firms develop their internal framework while borrowing components or applications from each of the

four models. The COSO and ISO models are the most common benchmarks and sources for ERM practice and development in Jamaica.

The COSO ERM framework is more complex and multilayered compared to the ISO model, which is clearer and easier to implement. There are many similarities between the two frameworks, although there still are many differences (Hopkin & Thompson, 2021). The scope of the ISO framework provides guidelines and general principles that guide organization leaders in the implementation of ERM (Bruwer et al., 2018). This suggests that ISO does not belong to any single business or organizational sector. In the same way, the COSO framework is not specific to any industry, but it is broader and wider compared to the ISO framework (Sari & Sundiman, 2019). The COSO framework focuses directly on the objectives set by leaders of a specific organization (Bruwer et al., 2018).

While ISO provides a very shallow definition of RM, the COSO framework provides a very comprehensive definition noting that RM is enacted by the board of directors, management leaders, and other employees and applied in the strategy setting of an organization (Davis et al., 2017). The first phase of the updated COSO framework has two components, governance and culture, which is a very wide concept compared to the first phase of the ISO framework, which only involves establishing the context. The first component of COSO mentions codes of conduct and ethics, which are not mentioned in the ISO framework. Despite the differences, the two models have similarities in how they suggest the ERM should be implemented (Hopkin & Thompson, 2021). These two frameworks contain the assessment and treatment of risks, a system for information and

communication, and a mechanism to monitor and review each component in the ERM process.

Table 2

Comparison of the ISO and COSO ERM Models

	ISO	COSO
Scope	Provides general principles and guidelines on RM that are not specific to any industry.	A very broad scope that applies to the specific objectives set by an organization
RM definition	Shallow definition "Coordinated activities to direct and control an organization with regard to risk"	ERM is a tool senior managers use to assess potential risk exposures so that the risks can be managed within risk tolerance levels. It gives greater assurance that the organization's objectives will be met within margins.
ERM components	Establish the context Risk assessment Risk treatment Monitor and review Communicate and consult	Risk governance and culture Risk, strategy, and objective setting Risk information, communication, and reporting Monitoring ERM performance Review and revision Communicate and consult

Methodology

Previous research has investigated this topic using different methodologies. In most cases, the analysis has used qualitative and quantitative methods. Researchers have used quantitative methods to investigate the relationship between RM and business success (Bogodistov & Wohlgemuth, 2017). For instance, Bentley-Goode et al. (2017) studied the link between business success and RM using a quantitative approach. Yap and Yap (2016) noted that business risk significantly impacts an organization's performance

after using a quantitative research methodology to investigate that relationship. Bunea and Dinu (2020) and Yusheng et al. (2019) have used quantitative analyses as their primary methodology to investigate RM relationships with bank operations. In all these cases, the researchers' aim was common: understanding the relationships between some independent variables and a dependent variable.

Quantitative studies are used for a particular purpose. Allen (2018) suggested that quantitative research's primary purpose is to understand the relationship between noticeable or perceived phenomena and a population. In this study, the phenomenon is the ERM, the population is MSMEs, and the relationship is business success. A positivistic paradigm was assumed as it was believed that the relationship existed and could be objectively measured. Park et al. (2020) suggested that studies under a positivist paradigm are done to verify hypotheses and allow explanations of or confirm causal or correlational relationships. Quantitative research uses a sample to make inferences about a population; quantitative researchers generalize to an entire population an outcome noticed in a sample from that population (Creswell & Plano Clark, 2018). In this case, I examined the hypothesis that there is a relationship between MSMEs' general internal environment and objective setting; general control activities, information, and communication; HORM; specific risk identification and risk assessment activities; and business success. I examined the relationship in a sample of MSMEs to form a conclusion about the entire MSME population in Jamaica. The quantitative method was appropriate. Besides, most quantitative studies have adopted a correlational research

design. Selecting a quantitative correlational research approach aligned with previous research used to investigate the topic.

Qualitative research methodologies have also been used to gain an understanding of ERM and business success. For instance, Ade et al. (2020) used a qualitative research methodology to investigate the perceptions of business managers on the impact of business risk on performance. Qualitative methodology has been effective in investigating the concepts or the constructs of RM and its perceived impact on businesses (Pecina et al., 2022; Venkatesh et al., 2021). Yap and Yap (2016) used a qualitative research methodology to explore the impact of business risk on the performance of SMEs. The investigation was about exuding factors that impacted the particular case. Creswell and Plano Clark (2018) and Yin (2018) suggested that qualitative methodologies are used to excavate factors and reasons about phenomena, but quantitative are used to generalize the effects. In this study, I am confirming and generalizing a perceived relationship and not trying to identify factors of a phenomenon.

Measurement

The purpose of this study was to establish whether a relationship exists between a firm's ERM program and business success. To demonstrate this relationship, it was paramount to understand what business success entails and some of the methods used by previous scholars to measure it. Chaves-Maza and Fedriani (2022) explained that business success is a very complex term whose definition will depend on the context or the type of business or enterprise. Lekovic and Maric (2015) reported that there is no universally accepted definition of business success but argued that business success

should begin from a subjective point of view in that the success will be defined in terms of the owners or the entrepreneur.

The business's success will largely depend on the goals and objectives of the business owners (Bruwer et al., 2018). Different scholars and studies have defined business success in terms of financial performance and non-financial performance, while others will define success in terms of short-term and long-term growth (Lekovic & Maric, 2015). Dang's et al. (2019) considered business success as making profits and increasing enterprise value in the long term. In other literature, business success is defined as the ability of enterprise leaders to achieve their goals and objectives and to ensure continuity of business activity.

There has not been consensus on the measure of business success. Some scholars of MSMEs have used objective or financial measures for enterprise success: profitability, business innovation, employee development and growth, turnovers, market share, market share growth, financial ratios, sales growth, cash flow, return on assets, return on equity, and return on investment (Ahmad & Seet, 2016). Some practitioners have placed greater reliance on certain types of financial measures over others. Increases in profitability, solvency, efficiency, and liquidity ratios are the most common measures of business success.

Profitability measures determine how a business is efficient in managing its costs of doing business. One measure of profitability is aggregate profit margins or net profits (Kloosterman, 2019). A more common measure of profitability is the return on equity (ROE) or the ratio of net profit to total equity. A high ROE relative to industry norms

indicates business success, while a low ROE could indicate a business is under stress and nearing failure (Hirdinis, 2019). Liquidity and solvency measures determine the extent to which a business can pay for its current obligations: rent and debts (Dîrvă, 2017). A business is successful if it can generate enough cash to pay for its rent and other immediate costs while an unsuccessful business will not generate enough money to meet its current obligations and may become bankrupt in the long term (Büyükçoban et al., 2018). The efficiency of a business is also used to establish the success of a business. Efficiency ratios determine how well a business uses its assets to generate revenues or profits (Hirdinis, 2019).

Many MSMEs do not maintain clear financial records, or, if available, they may be complex to interpret or not reliable (Kangal, 2018). Also, objective data for MSMEs are not easy to compare due to increased diversity among firms: different industries of operation, unpredictable growth rates, and a small capital base (Akmeşe & Gündoğan, 2020). The lack of financial records makes it difficult to establish whether a business is successful or not. Subjective measures or nonfinancial measures can be used to complement financial measures of business success (Ade et al., 2020). Some examples of subjective measures of business success include measures of customer or client satisfaction, employee satisfaction, employee turnover, client retention, and other factors (Ahmad & Seet, 2016). Other scholars suggest that the success of a business can be measured based on long-term and short-term criteria (Dîrvă, 2017). A successful business will last longer than an unsuccessful business; it is more likely to, survive stress and turbulence compared to an unsuccessful business (Bogodistov & Wohlgemuth, 2017).

Jović and Tomašević (2021) demonstrated that financial ratios and analyses are good for establishing short-term growth, but long-run sustainability is boosted by focusing on the nonfinancial attributes of the MSMEs. Analyzing the non-financial components will require observation over an extended period (Akmeşe & Gündoğan, 2020).

A more comprehensive method of measuring business success and performance known as the economic value added (EVA) conceptualized within the consulting firm Stern Stewart in the 1980s (Madsen et al., 2020). The use of EVA helped overcome the weaknesses of other financial measures of performance by incorporating the cost of capital, economic conditions, and market performance information (Bogodistov & Wohlgemuth, 2017). EVA is calculated by subtracting the product of the weighted average cost of capital (WACC) and invested capital from the net after-tax profit of a firm (Sari & Sundiman, 2019). Previous research shows that ERM adds value to a firm, and EVA would be a perfect measure of business success (Dîrvă, 2017). Tripathi et al. (2019) also implied that the EVA as a measure of financial performance was superior and amplified. If the EVA of a firm at the end of the research period is zero, then no value has been created by implementing ERM. Still, if the EVA is greater than zero, then the value has been created, and the business can be said to be successful when compared to others in the same industry (Akmeşe & Gündoğan, 2020). If the EVA is negative or below zero, then the value has been decreased.

Chandler and Hanks (1993) also developed a survey method of measuring financial performance. The survey method uses a self-evaluative questionnaire to measure the performance and success of a business. There are three commonly used

methods for evaluating business success, which include requesting information in broad categories (objective information): asset growth, sales growth, and return on equity; using satisfaction with performance index; and performance with relation to competitors (Chandler & Hanks, 1993). Summarized in Table 3, below, Chandler and Hanks found three categories of measuring business success: broad measures, satisfaction, and performance.

Table 3

Chandler and Hanks (1993) Measurements for Business Success

Measure Category	Measure Variable
Broad Category & Business Volume	• sales & sales growth • market share • cash flow • earnings • net worth
Satisfaction	• satisfaction with sales growth • return on investment • changes in market share • changes in cash flow
Performance relative to competitors (each measure is compared with the corresponding competitor's measure.)	• market share growth • return on investment • return on assets • net profits • sales growth • net worth

All three criteria were found to be relevant and valid. However, the use of satisfaction with performance scale had the lowest relevance because leaders of MSMEs were reluctant to release their data to measure their satisfaction with their performance.

Variables

Following the Lundqvist (2014) model, the independent variables in this study were general internal environment and objective setting; general control activities, information, and communication; HORM; and specific risk identification and risk assessment activities. The aim of measuring these variables was to have an understanding of the extent to which MSMEs have implemented an ERM strategy. I then conducted a correlation analysis to establish the extent to which the implementation of an ERM strategy influenced the success of a business, the dependent variable. I sought to demonstrate how independent variables relate to the dependent variable. A correlational quantitative research design was used. A survey questionnaire was used to collect data and information from the participants.

The survey instrument, a questionnaire (see Appendix A) was structured on a 5-point Likert-type scale with (1) Strongly disagree; (2) Disagree; (3) Neither agree nor disagree; (4) Agree; (5) Strongly agree. The five-point Likert-type scale has been widely used by previous researchers in a different field to measure the attitudes of respondents. The Likert-type scale is more reliable and valid than a single scale. The Likert-type scale is simple, easy to use, and provides an index that allows reliability and validity to be checked by use of Cronbach's alpha (Penson & Tyson, 2021). Chyung et al. (2017) argued that the use of the midpoint scale *Neither agree nor disagree* can lead to misleading results since the respondents might abuse the scale as a dumping point for survey questions, they are not familiar with. The elements of the independent variable to

be measured will be based on the pillars proposed by Lundqvist (2014), as shown in Appendix A.

Variable 1: General Internal Environment and Objective Setting

The internal business environment impacts business culture, which can then determine the success or failure of a company (Adewole & Umoru, 2021; Aziz et al., 2019). Hans (2018) identified that the business's mission and objectives, human resources, and its organizational and management structures, nature, and directions are fundamental components of the business's internal environment and are drivers for innovation and adaptability within external environments. These essential components are not just factors that a company has control of and can manage or solve by itself, but these are the factors that enable the competitiveness of MSMEs in small island economies (Hans, 2018; Hurley, 2018). Many MSMEs, especially those run by family members, have poor internal management structures and practices, making them likely to develop an unprofessional business culture and increase their chances of failure (Crane, 2020; Luan et al., 2018; Ocloo et al., 2021). Many family-operated businesses still have succeeded and survived the test of time (Lekovic & Maric, 2015). The governance structure of the business could determine whether the business will succeed (Singh & Gaur, 2021). The inclusion of this pillar, general internal environment, and objective setting is vital since research relating the internal environment to business success is limited. This research will expand on this relationship.

The internal environment entails the business philosophy set by the company leaders. When implementing the ERM, company leaders must first develop a base for the

implementation of ERM (Silva et al., 2018). This involves developing a code of conduct, determining the risk appetite of the firm, ethical values, the roles and responsibilities of the board of directors, and the way the company leaders solve conflicts and assign duties (Davis et al., 2017). The internal environment helps set how risks are controlled and treated in a company (Bruwer et al., 2018). The internal environment, for instance, determines the internal culture of a firm (Silva et al., 2018). If a firm does not have strong leaders or well-established supervisory roles, the employees might end up not following the rules and regulations. If the employees, for instance, fail to follow professional practice, they may commit fraud while in the line of duty, which might expose the company to losses (Hopkin & Thompson, 2021). This element is very important when business leaders want to avoid losses that emanate from the behaviors of employees.

Lundqvist (2014) demonstrated that a key element of the first pillar of implementing ERM for the success of the organization was objective setting. Setting goals or objectives for attainment sets the pace for success (Nair et al., 2021). Nair et al. (2021) suggested that deciding on specific desired and relevant outcomes, objectives, or goals, which are measurable and bounded by precise time horizons, aid the achievement process, and allow success to be monitored and evaluated. Failure of programs, and by extension, people and entities, have a direct causal link to failing to establish clear and appropriate goals or objectives to guide the execution of the program (Fawcett & Laurencont, 2019).

Leaders of MSMEs are no different, setting goals to drive their enterprise allows them to create a checklist for growth and success. When these objectives or goal setting is

done under an effective strategic planning system, the positive impact on the organization is even more pronounced (George et al., 2019). Zander (2018) demonstrated that individuals working in a group are not just motivated by their attainment of goals, but are more motivated by the group's successes, and by their work in achieving the group's goals. Poor communication of goals could thwart the success that goal setting could derive. Locke and Latham (2019) implied that goals become very effective if their actors both understand them and can communicate them correctly. Leaders of MSMEs should set goals with different time horizons and communicate them to their subordinates so that as they work together to attain the goals, the MSMEs will grow and be successful.

Variable 2: General Control Activities, Information, and Communication

Researchers have demonstrated a direct link between internal controls and the success of a business. Internal controls are the initiatives or the checks and balances within an organization to prevent losses or inaccurate reporting (Akmeşe & Gündoğan, 2020). Internal controls include the quality and efficiency of the internal factors that drive the business, and which direct the business leaders' responses to external factors (Akmeşe & Gündoğan, 2020; Bruwer et al., 2018). Efficient internal controls lead to the reduction or prevention of fraudulent activities and embezzlements, which are more impactful on the MSMEs; internal controls strengthen the organization in dealing with both internal and external threats.

Rehman and Anwar (2019) and Dîrvă (2017) reported that internal factors of a business including human resources, operational activities, and innovations directly influence the extent to which SMEs are successful. Yuningsih et al. (2022) concluded

that the internal factors of an SME directly influence the performance of the organization. In their findings of 215 U.S. SMEs, Bogodistov and Wohlgemuth (2017) reported that SMEs' human resource capacity, in terms of skillsets, competencies, and proficiencies, has an essential role in the success of SMEs. Consistent with Akmeşe and Gündoğan (2020) and Walker (1887), Bogodistov's and Wohlgemuth's findings were based on the premise that a highly innovative workforce with a backup of strong information and communication technology (ICT) is likely to lead to new products, services, and improvement in the current processes, which directly increase the company's ability to adapt to changes in the internal and external environments, and to install innovation and efficiency systems that foster success of the firm. These systems include the segregation of duties, checks and balances, and a detailed and defined hierarchy approval structure to prevent fraud or misconduct (Bruwer et al., 2018). Suyanto et al. (2021) also found that ICT used by SMEs would have a direct and indirect impact on the efficiency of the processes that affect the performance of the MSME and the controls the MSMEs could exert within its various processes and checks and balances.

Internal factors are not foreign to external factors; existing literature links the strategic performance of business to external factors. The robustness of the SME's resilience to changes in external factors is underpinned by the SME's internal strength (Kativhu et al., 2018). External factors of an organization include regulations, competition, legal requirements, and external stakeholders and customers (Hans, 2018). The extent to which an organization addresses external factors determines its success (Adewole & Umoru, 2021). Glowka et al. (2020) and Dang et al. (2019) demonstrated

from their respective research that businesses that keep current with their external environments via consistent and detailed research of the needs and developments within the external environment usually embrace a strong marketing strategy that significantly influences the positive performance of the business. The strategic performance of an MSME is influenced by its external factors and the extent to which the MSME leaders allow these external factors to create internal competencies (Ade et al., 2020). Glowka et al. (2020) demonstrated that MSMEs that timely address customer's needs are more likely to report higher performance and profitability compared to MSMEs that do not respond to customer needs. It is important to note that companies that provide goods and services to customers to fulfill particular needs will attract more customers, and increase sales (Bruwer et al., 2018). Ade et al. (2020) added that firms that address the needs of external stakeholders (e.g., society, etc.), uphold ethical requirements, report a positive image, and attract more customers to the firm. Government regulators and financial reporting standards also force firms to create a culture of control and efficiency within the firms.

Variable 3: Holistic Organization of Risk Management

Using HRMS sets the base of RM within the organization and aids with business success. Jenya and Sandada (2017) noted that HRMS variable indicates the extent to which the organization is compliant with having:

- defined RM practices, which include risk appetite, risk identification, risk assessment, risk mitigation, and communication of risk information within and outside the organization,

- a central body and person overseeing and organizing the RM function within the entity, and
- formal and periodic reports of risk assessment, impact of risks, and responses to risk events.

Proper HRMS could lead to a reduction of wastes and unnecessary expenses, and also foster the identification of opportunities that either directly or indirectly increase the entity's net income (Maruhun et al., 2021). The faster threats to the success or normal operations of the organization are identified and assessed, the greater the chance of implementing successful mitigating strategies that reduce the negative impacts of the threats. Similarly, communicating effectively with staff and external stakeholders motivates recipients to act in the company's best interest, thereby improving the business's success (Ljajić & Pirsl, 2021). Daradkeh (2021) suggested that understanding data and the relationships within data allows the transmission of vital information that fosters business growth, improves business operations' efficiency, and brings greater satisfaction to customers and stakeholders of the business. The more efficient the HRMS, the greater the business success.

Executing HRMS requires a central focus. Jia and Bradbury (2020) outlined that, an independent central body that concentrates and executes the RM function makes the process more efficient and leads to more tremendous business success than when the RM function is subsumed under a different body. The central committee allows the RM function to be split into individual tasks that can be overseen independently by members of the central body, allowing for quicker identification and management of risks

(Prabhawa & Nasih, 2021). With its responsibility to keenly oversee the risk function, the central body embeds more internal controls and audit probity within the organization, causing the occurrence of fraud and other dishonest practices to be more difficult and less frequent (A. W. Khan & Subhan, 2019). Though the probing could increase the expense of the entity, the gains from the reduction in fraud and other dishonest practices would likely result in a net gain to the entity. The impact of the HRMS variable on business performance could imply the quality of how HRMS is organized and focused within the entity.

Variable 4: Specific Risk Identification and Risk Assessment Activities

The risk assessment strategy is the fourth independent variable. Leaders of SMEs that implement ERM must be able to assess the risk environment of the SME to determine the full risk exposure specific to the SME, the likelihood of the risks occurring, the likely impact the risk occurring could have on the business, and what mitigating strategies could be implemented to arrest the risk (Chakraborty & Ghosh, 2020). Risk assessment is most important as it allows preventative measures to be employed to reduce or eliminate the impact of risk exposure (Gorzeń-Mitka, 2019). Risk assessment strategies are positively aligned with business success and MSME owners' or operators' perception of risks and the effects of risks on the entity could steer the business in the direction of sustainability and success (Dvorsky et al., 2020). The stronger the risk assessment strategies, the greater the likelihood that the business will thrive and be successful.

Risk assessment scans both internal and external environments for threats or opportunities that could impact the business. Jenya and Sandada (2017) suggested that the risk assessment variable takes into consideration events of financial, strategic risks, compliance, technology, and economics which could impact the entity either positively or negatively. In preparing for these exposures, leaders of SMEs need to understand and appreciate these categories of risks and how to mitigate or exploit them to allow the sustenance and growth of the entity. A low score on this variable could suggest that leaders are either not taking seriously RM nor the impact of not having proper RM within their organizations (Dvorsky et al., 2020). The value of this variable could be used as an early sign of whether the entity is heading toward demise or success.

Variable 5: Business Success

The dependent variable, business success, will be measured based on criteria developed by Chandler and Hanks (1993). Chandler and Hanks suggested that business success can be measured in terms of performance in broad categories, satisfaction with performance, and performance compared to competitors. The table below summarizes the specific items to be measured using a self-report questionnaire (see Appendix B). Bentley-Goode et al. (2017) previously adopted Chandler and Hanks's (1993) approach to measure factors influencing organizational performance on a 5-point Likert-type scale. Lekovic and Maric (2015) used Chandler and Hanks's method to measure business performance in manufacturing companies in the United States. The widespread use of Chandler and Hanks's approach to organizational performance demonstrates that the

method is an effective way that scholars and stakeholders can use to measure the performance of organizations.

The performance of broad categories for growth was measured using the value labels of decreasing, constant, slightly increasing, moderately increasing, increasing significantly, and rapidly increasing. In terms of performance on business volumes, the value labels were Jamaican Dollars less than 25 million, 25-50 million, 50-100 million, 100-250 million, 250-500 million, 500 million –1 billion, and above 1 billion. Satisfaction with performance was measured using a 5-point Likert-type scale with (1) very dissatisfied (2) dissatisfied (3) neither satisfied nor dissatisfied (4) satisfied (5) very satisfied. Also, the performance compared to competitors was measured using a 5-point Likert-type scale with the descriptors being (1) somewhat lower (2) the same level (3) a bit higher (4) significantly higher (5) a great deal higher.

Conclusion

A literature review is a documentary examination of the historical records or research of topics of interest to the reviewer (Paul & Criado, 2020). Researchers use literature review to put their research into context with past research and demonstrate how current research is filling gaps or adding to the body of knowledge. In this literature review I demonstrated the appropriateness of the methodology and measures I used in this study. I also showed why other methodologies were not appropriate for use in this study. Importantly, I showed the context of this study in relation to the theoretical framework and why I excluded alternative theories.

Transition

In Section 1, I introduced my doctoral study by outlining the objectives of my study which I have encapsulated in my purpose statement and nature of the study. I also presented my problem statement which included my specific business problem that some micro-, small-, and medium-sized business leaders do not know the relationship between the general internal environment and objective setting; general control activities, information, and communication; HORM; specific risk identification and risk assessment activities; and business success.

I outlined that in the conduct of my study, I employed an appropriate theoretical framework that precisely synchronized with my study. Implicit from the selected framework was that MSMEs which implemented Lundqvist's (2014) four pillars of ERM, were more likely to experience business success (Walker, 1887). Within the context of Jamaica, I presented my conduct of a quantitative correlational study that I used to examine the relationship between MSME's general internal environment and objective setting; general control activities, information, and communication; HORM; specific risk identification and risk assessment activities; and business success.

I concluded Section 1 with my review of current literature. The literature review examined all those aspects of my study that were deemed foundational to the credibility, reliability, and validity of my study. In particular, I demonstrated that though ERM has been implemented in businesses, the MSMEs are at a disadvantage and need an ERM framework that is rigorous but simple and inexpensive given the MSMEs' limitations.

In the literature review section, I analyzed the works of research that were conducted previously on ERM. The first task of the review was to document how different scholars defined RM and ERM and how the practice had evolved over the years. Based on the definitions of different scholars, I defined ERM for the MSMEs as an enterprise-level minimal assessment, quantification, financing, and management of risk. The concepts of RM have evolved over the years from just managing the negative sides of risks to a holistic application of strategies to mitigate losses on enterprises and also add value to businesses. Many MSMEs fail to use or implement the ERM strategies due to the perception that ERM is an added and unnecessary cost and that ERM by its nature is very complex.

The four frameworks have many similarities, although they have different order and sequence of activities and processes. Due to increased variability in how different enterprises implement the ERM frameworks, Lundqvist (2014) came up with an ERM model that combines common features of ERM frameworks implemented in different organizations. Lundqvist identified the following four pillars of ERM: general internal environment and objective setting; general control activities, information, and communication; HORM; and specific risk identification and risk assessment activities. These pillars were adopted in this research over the pillars suggested by other frameworks since Lundqvist's model is more appropriate for MSMEs due to its nature: ease of understanding, noncomplex, and ease and sequence of application.

From previous works of research, the implication is that the application of ERM leads to the firm's value creation: increased competitive advantage, business continuity,

and stability. Further research showed that many MSMEs do not progress beyond their second year due to poor implementation of ERM strategies. Although the current research showed that there is a relationship between the successful implementation of an ERM strategy and value creation, it was not clear how the ERM strategies influenced the success of the business. There exists a gap in existing literature since previous research has not identified whether there exists a relationship between the ERM strategies and business success demonstrating the need for and the importance of this study.

I sought to understand how the successful implementation of ERM increases the chances of business success. In this research, business success was defined as the ability of an enterprise to achieve its goals and objectives and to ensure continuity of business activity. Business success was measured using the criteria of performance on broad categories (growth and business volume), satisfaction with performance, and performance in relation to competitors. The data for the research was collected using a survey because it provided a chance to explore a wide range of audiences, reduced the variation in the outcome, and eased the analysis of the data.

In Section 2, I present more information on my research strategy. These include my process of collecting data, selecting my sample, determining my sample size to ensure my study has a high power, analyzing data, and synthesizing to form conclusions. Along with the need for high power, I discuss in more explicit terms the mechanisms employed for the validity and reliability of my study. I also outlined some ethical issues, constraints, and considerations. In Section 3, I present the results and implications of my

findings. I also show how ERM could be implemented to achieve social change, improve MSME leaders' professional business practices, and assist future research.

Section 2: The Project

In this section, I present information regarding the strategy I employed in executing my study. I start the section with my purpose statement, and my role as the researcher, and define the characteristics of those I targeted to participate in the study. I then give details of my research design, research methodology, the target population, and the process of sampling. I also outline my process of conducting the research ethically and discuss my data collection instrument, data collection technique, and data analysis. I conclude with a transition statement after I have outlined the steps I employed to ensure the validity of my research

Purpose Statement

The purpose of this quantitative correlational study was to examine the relationship between internal control, internal environment, HRMS, risk assessment strategies, and business success of Jamaican MSMEs. The targeted population consisted of MSME leaders in the Kingston metropolitan area of Jamaica. The independent variables were general internal environment and objective setting; general control activities, information, and communication; HORM and specific risk identification and risk assessment activities as measured with a survey scale developed by Jenya and Sandada (2017). The dependent variable was business success as measured with the survey scale developed by Chandler and Hanks (1993). The implications for social change from the results of this study included improving Jamaicans' quality of life; as the number of MSME leaders implementing ERM increases, the greater the sustainability of income and growth for those who depend on MSMEs.

Role of the Researcher

My primary responsibility as a researcher was to ensure that the data I collected were appropriate and met the requirements for the research in answering my research question (Edmonds & Kennedy, 2019). Research is only as good as its data: garbage in – garbage out. I ensured that the appropriate instruments were used in collecting the data and encouraged complete and honest participation of all members of my sample group (Saunders et al., 2019; Zyphur & Pierides, 2017). Using qualitative study techniques for quantitative data collection or analysis invalidates the study (Yin, 2018). Similarly, where the study is qualitative in nature, collecting data based on a quantitative analysis is like fitting a round peg within a square hole (Aspers & Corte, 2019; Trent & Cho, 2020). Data must match the basis of the study and my responsibility as the researcher was to ensure that it does (see Yin, 2018; Zyphur & Pierides, 2017).

The researcher has to ensure that data are bias-free and of the highest integrity (Gomila & Clark, 2022; Kumar & Shantala, 2020). The process of gathering the data or selecting subjects for the data must not include biases, idiosyncrasies, or the desired outcome of the researcher—if this were the case, the researcher would have corrupted the data, making it flawed and useless (Desquilbet et al., 2021; Gomila & Clark, 2022; Yin, 2018). Data integrity implies that I was ethical in my approach to data collection and treatment (Kumar & Shantala, 2020). Integrity in research suggests that I must give credence where it is due, and seek permission for nonpublic or copyrighted information (Gatignon, 2019; Robishaw et al., 2020). Respecting the rights of others, the rights of a person's privacy, and the rights of a person's property in gathering data are important

ethical traits in collecting and using data (Gatignon, 2019). I ensured I did not lead nor coerce individuals or participants in supplying the data and I did not recruit participants from protected categories.

Importantly, I protected the data and chose storage systems carefully. Storage systems should be carefully selected and not be easily hacked or easily made available to the public or persons without authority (De Guise, 2020; Kumar & Shantala, 2020). Using manipulated data invalidated the study and I made certain that the data were not altered by an unauthorized third party. Having a triple layer generally refers to as the grandfather-father-son type of backup and storage was key in protecting my data; not every cloud storage is fit for all types of data as data security is not uniform across platforms (see De Guise, 2020).

Researchers have another fundamental role to work within the agreed budget. Research can be costly, but the researcher must ensure that without invalidating the research, the cost of collecting, storing, and using the data are at their minimum (Liu & Lu, 2018). In this regard, I conducted the study within budgetary limitations without compromising the quality and integrity of the data, and the sensitivity or use of the outcome from the research.

Importantly, the researcher must understand what invalidates a study or makes the study unreliable. Creswell and Creswell (2018) and Bougie and Sekaran (2019) suggested that the demographics of the study could negate the reliability and validity of the study. Key to the research is the process of gathering data, but if the appropriate population is not targeted, or the sample or sample size is inappropriate or unrepresentative, the study

could be considered flawed, invalid, and unreliable (Bougie & Sekaran, 2019). A researcher's knowledge of the subject matter could improve the determination of the demographics for the study. A researcher may also need to make assumptions as the study is performed to protect the validity and reliability of the study (Verma & Abdel-Salam, 2019).

In this study, I ensured that I understood the research question and used my knowledge to design each research component. My selection of the instrument for the collection of the data took into consideration the type of study and the limitations of the MSMEs. I also used mathematical tools to ensure my sample size was appropriate and representative of the intended population. In my conduct and interpretation of the study results, I adhered to the guidelines of *The Belmont Report* (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research [NCPHSBBR], 1979) and thereby exercised ethical standards, which barred my imposition of personal biases. With these ethical standards under *The Belmont Report*, I respected the rights of all participants, obtained participatory consent among participants and obtained permission to use the surveys of Lundqvist (2014), Chandler and Hanks (1993), and Jenya and Sandada (2017; see appendices C, D, and E). As guided by *The Belmont Report*, I ensured that all participants were treated similarly, with preferential treatment given to none.

Participants

The participants in the study were those MSME leaders who were active in the operations of the MSMEs. Not all owners of MSMEs are involved in the functions of the

business. This study was about the relationship of ERM to business success. The MSME owner or operator should be knowledgeable of both the ERM practices of the business and the success status of their businesses. Second, my study was limited to MSMEs operating within the Kingston metropolitan area of Jamaica, formally registered, and were contained in the JBDC's database. The targeted persons for this study were persons who are owners or operators of MSMEs that are:

1. formally registered with the Government of Jamaica,
2. operating within the Kingston metropolitan area of Jamaica,
3. satisfy the MSMEs description outlined by JMICAF (2019), and
4. operating for a minimum of 3 years.

Care was employed in selecting the participants. To ensure my study had sufficient power, I used the G*Power 3.1.9.4 software to determine an appropriate minimum number of participants (see Uttley, 2019). I requested access to the JBDC's database of registered MSMEs within the Kingston metropolitan area and randomly selected an appropriate sample without breaching the results from G*Power. I selected more than the G*Power's output of the minimum number of participants because some persons might either elect not to participate nor satisfy all the selection criteria. I only chose individuals who met the requirement criteria. Demography: age, gender, education attainment, or other descriptors which do not satisfy the selection criteria, were not analyzed as they are not the foci of my study.

I was strategic in getting individuals to participate. Using the information obtained from the JBDC, I telephoned the company and sought an audience with either

the owner or the operator of the business. I introduced myself, told them of the nature and importance of my study, and asked for their participation. Before the survey, I sent potential participants a consent form where I communicated that only one person per MSME could participate, described the conditions for participation, and explained that MSME must fit all the participation requirements for the study. I also suggested and described to these potential participants that the study was quantitative in that questions were like multiple choice except that the answer to each question was subject to the participant, that the questions were common to all participants, that participants or the MSME that they represent would not be identified to any third party, and indicated the average time duration, thirty minutes, it would take to complete the questionnaire. I then asked them whether they would participate and if they answered in the affirmative, I would email them the Survey123 link to the survey, or make arrangements to visit them physically or via a virtual space: Zoom, Microsoft Teams, Google Meet, or some other meeting software to conduct the survey. Whether they agreed to participate or not, I thanked them for allowing me audience with them.

Research Method and Design

A research study is as good as its methodology. Doyle et al. (2020) indicated that in answering research questions researchers must use an appropriate methodology and design to establish validity and reliability. A research question that calls for generalization of outcome would be flawed if used with a small sample size or a qualitative design. Similarly, the systems of collecting and managing data not being in synch with the purpose of the research would deem the research erroneous and invalid

(Creswell & Plano Clark, 2018; Doyle et al., 2020). Selecting a research methodology and design that aligns with the research question is a primary task in the stages of research.

Research Method

Quantitative research has its distinct and unique purpose. Saunders et al. (2019) posited that where the researcher needs to generalize an outcome, the quantitative methodology is most suitable. Generalization of outcomes requires the researcher not to influence the data nor to introduce biases in their treatment of the data. The ontological and epistemological foundations of quantitative research imply that the researcher handles the data from a distance, not imposing personal beliefs or biases (Ragab & Arisha, 2018; Saunders et al., 2019). Using quantitative research allows the interactions among variables to be examined such that relationships among these variables can be established. Another requirement in generalizing outcomes is the confirmation of hypothetical views. Quantitative studies employ mathematical tools in hypothesis testing allowing the rejection or acceptance of proposed hypotheses within a desired level of accuracy.

Foundational to quantitative studies is the use of samples from an intended population. The sample must be representative of the peculiarities of, and in proportionate quantities to the population from which it is drawn. Creswell and Plano Clark (2018) and Saunders et al. (2019) implied that representivity is crucial for the reliability of the quantitative study. If the sample includes a greater proportion of one element of the population, then the outcome would be skewed towards that element and

not reflect the population (Creswell & Plano Clark, 2018). The sample size is large to ensure all groups are represented thereby reducing internal inconsistencies and improving the reliability of the study (Uttley, 2019; Verma & Verma, 2020).

In this study, I examined the relationship of ERM variables with business success among MSMEs. In this regard, I employed hypothesis testing to confirm observations. I also generalized the outcome of the study to a general population of MSMEs. I used a stratified sample of MSMEs in the Kingston metropolitan area of Jamaica thereby ensuring that all classes of MSMEs were proportionately contained in my sample. My study and type of sampling satisfied the conditions for quantitative research methodology, and my selection of quantitative methodology was suited.

Qualitative and mixed methods are other forms of research methodologies, but these do not meet the conditions for my study. Choosing an inappropriate research methodology would invalidate the research and the conclusions of the research (Basias & Pollalis, 2018). In qualitative studies, the researcher's pure goal is to understand the reasons, the whys, and the hows in explaining the phenomenon, events, or lived experiences (Jamali, 2018). Mjelve and Tangen (2020) suggested that when appropriately used, qualitative studies can affect a holistic understanding of a phenomenon. Qualitative studies do not produce generalizability of outcomes; do not use hypothesis testing; and their data collection methods are semistructured or unstructured interviews, observations, and lived experiences (Kelley-Quon, 2018; Yin, 2018). Creswell and Plano Clark (2018) explained that sampling for qualitative studies is small and purposive. Yin (2018) went on to suggest that the worldview of the qualitative researcher allows them to conduct the

study within their fundamental beliefs, thereby allowing them to mix and mingle with their dataset. In this regard, researchers believe that reality exists but is subjective, multiple, and contextual (Creswell & Creswell, 2018; Ravitch & Carl, 2021). With my study, I aimed to describe relationships between variables that I believed exist and were general to all situations; I was not trying to understand the issues influencing the relationships. I used a large sample and my data instruments were in the form of structured questionnaires with Likert-type scale responses. I did not mix with the data but examined the data without mingling with the data. The qualitative research methodology did not suit my study design or purpose.

The mixed-method research design did not fit into my study requirements. Mixed studies join both qualitative and quantitative methods into one study. The mixed study is either exploratory or explanatory (Creswell & Creswell, 2018). Yin (2018) and Creswell and Plano Clark (2018) described that the explanatory mixed study gives explanations of the reasons for the quantitative component outcomes; the exploratory mixed study generalizes the qualitative outcome. Vakhitova et al. (2021) used a mixed method to first generalize the perceived impacts of cyber abuse on victims and then a qualitative approach to characterize the impacts. Mertens and Wilson (2019) supported Vakhitova et al.'s approach and added that an explanatory mixed study puts the findings of the quantitative analyses into context and enriches and expands the validity and reliability of the study. In my study, my goal was to define and generalize a perceived relationship between ERM variables and business success. Though it could enhance the quality of the outcome, in my study, my purpose did not include the examination of the reasons for the

relationships among the variables. The mixed-method approach was not appropriate for my study.

Research Design

Research design is the research strategy, akin to a blueprint, within the research methodology (Bloomfield & Fisher, 2019). My study was quantitative, and this methodology included descriptive, correlational, experimental, or quasi-experimental designs (Bloomfield & Fisher, 2019; Creswell & Plano Clark, 2018). Researchers including Bloomfield and Fisher (2019), Johnson (2019), Patten and Newhart (2017), Uttley (2019), and Verma and Verma (2020) have concluded that though each of these quantitative research designs requires an appropriately large sample size to establish a good power of the study, each has its unique purpose and may not be appropriate for all investigations.

A descriptive quantitative research design is useful for detailed information about phenomena. Grove and Gray (2019) outlined that with descriptive designs, the researcher can accurately characterize a situation or people by analyzing corresponding numbers. Not only do descriptive quantitative designs tell you *what is* or *what appears to be*, but they add new meanings and give further information on the characteristics and frequency of what exists (Bloomfield & Fisher, 2019; Grove & Gray, 2019). This type of quantitative design has been effective in assessing people's perceptions and determining items of perceived importance with human evaluative processes (Basias & Pollalis, 2018; Petrongolo & Toothaker, 2021). This research design is not appropriate for my study. I

did not seek to characterize people or phenomena but instead, sought to examine relationships between variables.

The correlational quantitative study matched my research requirements. In my study, I sought to describe the relationship between four RM variables and business success among MSMEs. Grove and Gray (2019) expressed that the correlational study is ideally useful for describing relationships among variables. The strength of the relationship is measured by the correlation factor, which varies between -1 and 1 (Green & Salkind, 2017). Grove and Cipher (2020) explained that a factor of 1 indicates a perfect positive correlation between the variables, -1 indicates a perfect negative correlation, and 0 means no relationship among the variables. A perfect positive correlation implies that both the independent and dependent variables act in parallel (Starnes, 2019). An increase in the values of the independent variable would result in the same proportional increase in the outcome of the dependent variable. The perfect negative correlation factor suggests that both the independent and dependent variables act in parallel but in opposite directions. An increase in the values of the independent variables implies the same proportional decrease in the outcome of the dependent variable. Thrane (2019) went on to suggest that with the correlational factor, a further analysis, the regression analysis, could be performed to imply how the independent variables interact to predict the outcome of the dependent variable. Correlational designs do not imply causation and my study does not prove causation or predictability (Creswell & Plano Clark, 2018). I was interested in the nature of the relationship, demonstrating strength and relatability, the primary outcomes from the correlation quantitative design.

Quasi-experimental and experimental designs are the two quantitative designs in research used to establish causation and effects. Both designs use data from two groups: a treatment group and a control group (Creswell & Plano Clark, 2018). In these designs, the researcher compares the outcome from these two groups after an intervention was applied to the treatment group. Where there are differences between the outcomes, it is deemed that the intervention was due to the outcome and the causation of the phenomenon. Both designs use defined samples, the sizes of which are determined from the power computation exercise (Grove & Cipher, 2020). The main difference between both designs is how the sample is selected. Elements of the sample for the experimental design were strictly randomly selected (Bloomfield & Fisher, 2019; Creswell & Plano Clark, 2018). The sample for the quasi-experimental design was a stratified random selection. Though my study is related to MSMEs and I used a stratified approach in selecting members of my sample, I did not have control and treatment groups, and neither did I aim to establish causation or effect. In this case, my study does not match either the experimental or the quasi-experimental design.

Population and Sampling

In research, the targeted population is implied from the research question. Norouzian (2020) intimated that for research to be effective, there must be alignment of what is being researched and the population being researched. Implied from my research question is that I would try to establish a relationship within the MSME population. In Jamaica, the MSMEs population is relatively large with nineteen of every 20 businesses being MSMEs (JMICAF, 2019).

In this study, I examined how ERM pillars relate to MSMEs' success. Choosing an appropriate sample was fundamental to my study's validity and reliability (Norouzian, 2020). Allen (2018) suggested that to generalize outcomes from samples in quantitative studies, the studies must be both reliable and valid. Reliability demonstrates the consistency of measures within the study; validity suggests the accuracy of the measures. Bougie and Sekaran (2019) linked the reliability and validity of the study to the quality and size of the sample of quantitative studies.

Reliable quantitative studies must have a high power. The power of a study is an expression of the strength of the study (Verma & Verma, 2020). Power is a measure of the probability that the conclusion from the study is correct (Verma & Verma, 2020). This is the reverse of the beta or the type two error in quantitative studies. It is computed by subtracting beta from 1. The higher the value, the better the dependability of the results from the study. A study with a beta of 0.10 means that the power of the study is 0.90, suggesting that there are nine out of 10 chances that the outcome from the study indeed reflects the reality defined by the null hypothesis. Uttley (2019) suggested that increasing the sample size not only increases the power, but larger samples reveal more accurate effect sizes or more accurate descriptions of the strength of the relationship among the variables.

Reliable quantitative studies must also use samples that are representative of the intended population (Creswell & Creswell, 2018; Norouzian, 2020). Pierce et al. (2020) demonstrated that samples that are unrepresentative of their populations introduce biases in the outcome of the study. These unrepresentative samples exclude elements of the

population which could be vital in establishing accurate conclusions from the study (Pierce et al., 2020). Verma and Verma (2020) supported this concept and suggested that sample size is positively correlated to the level of heterogeneity within a population. Where a population is more diverse, the sample size should be greater.

Samples could lose their Representivity by the mechanisms used to collect the data. These mechanisms preclude some classes of respondents, making the sample unprobabilistic (Pierce et al., 2020). An online survey would eliminate persons who do not use the internet. Elliott and Valliant (2017) proposed that a realignment of unprobabilistic samples would be needed to establish the reliability of the data. Both appropriate sample size and sample representivity are needed for reliability.

In this study I was careful in selecting an appropriate sample size. The general guidance was that in correlational academic studies the minimum sample size should follow the mathematical function (Tabachnick & Fidell, 2018):

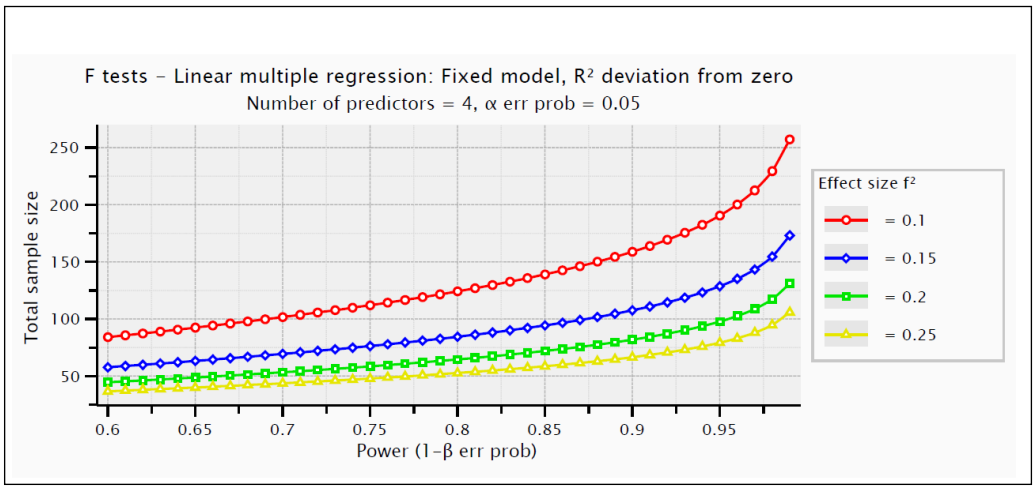
$$s(n) = 50 + 8n$$

where n represents the number of independent variables. With my four independent variables, Tabachnick and Fidell (2018) would imply that my sample size would be at least 82 participants. Using the G*Power 3.1.9.4 software the minimum appropriate sample size needed to be 85 participants (Uttley, 2019). The G*Power software uses the reversal of the power formula and for which, based on best practice and research conventions, I made assumptions of power size ($1-\beta = 0.8$), effect size (medium, 0.15), and tolerable sample error size ($\alpha = 0.05$) (Patten & Newhart, 2017; Uttley, 2019; Verma & Verma, 2020). From the output of G*Power, I noted that increasing the sample size to

130 or 173 would respectively increase the power to 0.95 or 0.99, ceteris paribus (Figure 2). I also noticed that with all other assumptions being fixed, a sample size of 175 would reduce the effect size to 0.07. The effect size shows the importance of a significant outcome or relationship between the independent and the dependent variables (Kyonka, 2019). In estimating sample sizes, G*Power indicates the minimum effect size that the sample would produce. As the sample size increases, the study's microscopic abilities to pick up smaller effects improve, and larger sample sizes would have lower effect sizes (Kyonka, 2019; Verma & Verma, 2020).

Figure 2

*G*Power Output of Power Vs Sample Size and Effect Size*



On the low end, I targeted a sample size that is the greater of Tabachnick and Fidell's (2018) implied number and the number implied from G*Power. On the high end, I relied totally on G*Power. I chose a sample that is between 85 and 175 participants, as this

would allow me to have appropriate levels of power and effect size with four predictor variables without impacting my assumption of a desired sample error of 0.05.

This study is about MSMEs in Jamaica. I used the Jamaican definition of MSMEs in selecting the sample size. Jamaica has a large informal economy and a greater number of MSMEs operate informally (JMICAF, 2019). Representivity would imply that my sample contains both types of MSMEs in the same proportions as the population from which the sample is drawn. No one is sure of the size of this informal economy and who truly participates in it (Miller, 2018). To have the sample include a particular percentage of one group over another group would not guarantee that both the informal and the formal MSMEs are truly proportionately represented in the sample. Miller (2018) suggested that in Jamaica some large and registered MSMEs conveniently operate simultaneously in both the informal and formal sectors. I restricted my sample to registered MSMEs.

With the assumptions that govern this study, my sample included operators of MSMEs within the Kingston metropolitan area of Jamaica. The JBDC promotes MSMEs' growth and development in Jamaica and keeps a record of all registered MSMEs. I used the JBDC's database as the population of MSMEs and used stratified random selection to determine members for the sample. The sample was proportionate to and consisted of each type of MSME in the JBDC's database (Norouzian, 2020; Saunders et al., 2019).

Quantitative research has two classifications of sampling forms. The first and more common approach is the probabilistic approach, which involves random selection and generalizes outcomes (Saunders et al., 2019). The other form is nonprobabilistic.

Creswell and Plano Clark (2018) and Saunders et al. (2019) described the probabilistic sampling approach to include simple random, systematic, stratified, and cluster sampling approaches. With simple random sampling, participants are randomly selected without preconditions. With the cluster sampling strategy, the population is divided into groups, and groups are chosen randomly en bloc to form the sample (Bamberger et al., 2019). Systematic sampling employs a rhythm to the selection. With systematic sampling, participants are selected based on a predetermined frequency except for the first participant, who is randomly selected from the population (Saunders et al., 2019). These forms of sampling are useful when the investigative phenomenon impacts all population members. I studied MSMEs only; simple random sampling would not be appropriate. Creswell and Plano Clark (2018) described a more appropriate sampling strategy for my research, the stratified design, which I used to isolate the MSME population and perform random sampling within each category of MSMEs such that each type of MSMEs is proportionately represented.

Nonprobability sampling does not align with my study. Ragab and Arisha (2018) described nonprobability sampling as nonrandom and subjective to the researcher. The researcher can introduce personal biases which could skew the outcome of the quantitative research. Besides, nonprobability sampling approaches usually target small sample sizes under a purposive, quota, snowballing, self-selection, convenient sample technique, as in the case of qualitative studies (Creswell & Plano Clark, 2018; Ragab & Arisha, 2018; Yin, 2018). My research was quantitative. I employed a stratified random selection approach within the MSME population. Guided by the results from the

G*Power software and the works of Tabachnick and Fidell (2018), my study had a sufficiently large sample size of participants. My sample selection could not conform with a nonprobabilistic sampling approach.

Ethical Research

Ethics is a foundational ingredient in research. It determines how the researcher operates in research, how data are collected, and the level of respect and security for participants in the study (Harnett, 2021). Sivasubramaniam et al. (2021) defined ethics as rules externally established and governed to guide the researcher in executing the research. Ethics is not synonymous with morality; morality is the individual's set of beliefs of what is right or wrong and is subjective to the individual (Sivasubramaniam et al., 2021). The researcher does not influence ethical principles but must abide by ethical norms to allow acceptance and use of their research. In conducting this research, I was careful to be ethical. I adhered to the guidelines of *The Belmont Repor*t (NCPHSBBR, 1979). I also abided by the Walden University IRB's code of ethics and proceeded to data collection only after receiving IRB's approval.

The first principle in *The Belmont Report* (NCPHSBBR, 1979) is that the researcher must respect persons. Participants' views and rights must be respected. Not only must the researcher obtain consent from the participants, but the participants must be informed of the nature and reason for the study. Notwithstanding, Andrews et al. (2018) suggested that the consent process must not hinder the research. Found in Appendix B, with my consent form I describe the nature of and reason for my research. I also included my confidentiality statement and a commitment that I would encrypt and securely store

participants' data in a location that is only accessible to me. I then asked participants to volunteer to participate by choosing to progress by answering the survey questions. With this approach, I obtained implicit consent from each participant. Participants were free to change their minds and were advised that they could choose to stop the survey even after they had started the survey. I also ensured that my sample selection was not prejudiced towards or away from any MSMEs. I used the survey software ArcGIS Survey123, which allowed data to be encrypted and data to be collected without trace to the participants. I stored the encrypted data in multiple places allowing a multi-layered approach to backing up the data.

The second principle of *The Belmont Report* (NCPHSBBR, 1979), beneficence, binds the researcher to ensure the research is a net gain to the participant. In this regard, the researcher performs a risk assessment of the research in respect of the participants to identify, potential economic, or other social risk exposures, and how these risks may be mitigated or avoided (Bos, 2020). Beneficence seeks to advance benefits from the research to the participants (Brear & Gordon, 2020). In my research, participants were not asked to identify themselves whether directly or indirectly. To prevent exposure to economic risks, I did not ask for actual financials, but I asked proxy questions about business success. The participants of my study would benefit from the outcome of the study which would demonstrate whether they should improve on their ERM to be successful.

The Belmont Report (NCPHSBBR, 1979) third principle for the ethical conduct of research is justice: who bears the burden versus who receives the benefits. This principle

ensures that there is equity for all participants in the report; no group of individuals benefits at the expense of another group (Hauk et al., 2021). In my research, I ensured that participants would be selected from the group of MSMEs in the Kingston metropolitan area of Jamaica. No group of MSMEs were treated differently in either the conduct of the study or in the process of forming conclusions from the study. Similarly, the benefits of the study will impact all classifications of MSMEs, thereby resulting in each classification of MSMEs benefiting from the study and being guided by the results.

Data Collection Instruments

No research is complete without data collection. Data are the heart of the research; it drives the research. Data, when appropriately coded and analysed, give information about the research subject that was otherwise unknown or unappreciated (Yin, 2018). Data are sensitive to the outcome of the research and will require careful management of its collection and handling to maintain the integrity, reliability, and dependability of the research and the researcher (Corti et al., 2020). The data collection instrument is just as important to the research as the data it collects. Suls et al. (2021) demonstrated that of necessity for the data instrument to be effective, it must be appropriate to the purpose and type of study, and to the source from which the data are to be obtained. Data collected with an instrument that does not align with the nature and scope of the study would miss vital information for the research (Suls et al., 2021). A data instrument that is not tailored to collect data from a particular source may not collect vital data. A study that has a qualitative data source would not be as exhaustive if the instruments used to collect the data were designed for quantitative data. Thomas et al.

(2018) focused on quantitative studies and concluded that in deciding on the data instrument, the instrument, a questionnaire in most cases, must have questions that are clear and unambiguous, must be pilot-tested and validated, and must be appropriately administered in the target population.

My study was quantitative. Finch et al. (2018), Creswell and Plano Clark (2018), and Saunders et al. (2019) have demonstrated that an effective tool for collecting data in a quantitative study is a questionnaire with predefined responses. Bordens and Abbott (2022) added that experimentation and nonreactive methods of which unobtrusive measures are a subset, are other forms of collecting data for a quantitative study. Creswell and Plano Clark (2018) described the experiment form of data collection as observing the difference in outcome between two samples where the only difference between the samples is that one sample was given an intervention but the other was not. Saunders et al. (2019) suggested that experimentation is used to examine causal and effectual relationships. In employing the nonreactive methods form of data collection, the participants in the study were not aware that their data were being gathered for research (Bordens & Abbott, 2022). Questionnaires are structured questions that would be asked of respondents. Each respondent is asked the same set of questions in the same order and is given the same group of likely responses (Saunders et al., 2019).

To be appropriate, I used questionnaires as my data collection instrument. I employed two questionnaires fused to appear as one questionnaire. To assess the independent variables, I used the instrument developed by Lundqvist (2014) and to

examine the dependent variable I used the instrument developed by Chandler and Hanks (1993). Responses to each question were based on Likert-type scales.

Because the survey instruments are just as important as the data they collect, survey instruments must be validated (Saunders et al., 2019). Lundqvist (2014) modified a survey initially prepared by Desender (2007) which was designed under the COSO framework. In validating the instrument Lundqvist had the instrument reviewed by ERM consultants and pilot-tested on ERM practitioners. V. C. Wang and Reio (2018) and Tsang et al. (2017) suggested that having a survey examined by professionals in the field of study and being pilot tested are suitable measures to ensure survey validity and accuracy. C. Wang and Bai (2017) elaborated that experts in the field of study are used to verify the validity, accuracy, and relevance of content construct, representivity to the research questions and target population, and the technical quality of the questionnaire.

Mohajan (2017) suggested that in establishing validity, the researcher must also prove reliability. Cronbach's alpha (CA) is a mathematical tool that is used to test the internal consistency among respondents to a survey (Creswell & Creswell, 2018). Fundamental to this tool is the amount of variation that exists among respondents on each question, and the overall variation among respondents to questions. The idea is that if respondents were consistent in their responses, both sets of variations would be almost identical (Surucu & Maslakci, 2020). CA does not just measure the level of consistency, it also measures the reliability or dependability of the study (Taber, 2017). Researchers generally accept that a CA value of 0.7 or more demonstrates good reliability or internal consistency (Creswell & Creswell, 2018; Creswell & Plano Clark, 2018; Green &

Salkind, 2017; Saunders et al., 2019; Surucu & Maslakci, 2020). CA is computed from the formula:

$$CA = \frac{K}{K-1}\left(1 - \frac{\sum_{i=1}^{K} {s_i}^2}{s^2}\right)$$

Where

- K is the number of questions in the survey
- S_i is the level of deviation (i.e., the standard deviation) among the respondents to question 'i'
- S is the level of deviation (i.e., the standard deviation) among the respondents to all questions

The questionnaire I adopted to determine business success, Chandler and Hanks (1993) questionnaire, has good reliability indices. In each of the four components of the questionnaire, CA value exceeds 0.7 (satisfaction with performance, CA = 0.77; satisfaction with sales growth, CA = 0.72; business volume, CA = 0.81; performance relative to competitor, CA = 0.93) (Chandler & Hanks, 1993). Taber (2017) suggested that in determining reliability, the researcher must also compute other appropriate statistics besides CA. Chandler and Hanks also computed the inter-rater reliable statistic and determined correlations of self-reported sales with independent sale volumes. The inter-rater reliability statistic gives a unit measure of the ability of the instrument to capture the same information from the same sample as would a similar instrument (Rashid & Mahmood, 2020). It is accepted that an inter-rater reliable statistic, κ, of at least 0.6 demonstrates substantial inter-reliability (Rashid & Mahmood, 2020; Schlager et

al., 2018). Chandler and Hanks found substantial inter-reliability among the components of their questionnaire (satisfaction with performance, $\kappa = 0.65$; satisfaction with sales growth, $\kappa = 0.69$; business volume, $\kappa = 0.72$; performance relative to competitor, $\kappa = 0.53$). Chandler and Hanks also found that self-reported sales volume had a 0.72 correlation factor with the independently reported sales volumes. Green and Salkind (2017) suggested that self-reported statistics closely and positively relate to independently determined statistics.

Data Collection Technique

In this study, I used ArcGIS Survey123 software to collect survey data. Survey123 is a unique survey tool that gives the researcher greater control over the design of the instrument (Jordan et al., 2019). From its website, ArcGIS (2021) describes Survey123 as allowing data to be automatically validated using rules the researcher predefined, and that data are collected via the web, smartphones, tablets, or computers. Offline data collection can be uploaded when there is access to the internet. Data are also secured and are accessible with a special username and password. Jordan et al. (2019) also described that Survey123 has a geospatial component that collects geographical information about where surveys are done to allow analyses by location. This feature is important for my future studies to determine whether ERM is concentrated among MSMEs from particular regions and industries. It will also allow me to check on trends by geographical location. My current study does not require geospatial information and this feature of Survey123 was not reported or analyzed.

My data collection took two steps. After designing the survey forms on Survey123, I contacted the participants of my study using information received from the JBDC database. Participants were sent the link to Survey123. Ponchio et al. (2021) suggested that collecting data via the web is convenient, fast, inexpensive, and does not impair the quality or depth of the data. Some participants may prefer not to use websites, and in this case, I sent them the link via WhatsApp or I visited them to conduct the survey. In all cases, before completing the survey, I asked participants to complete and sign the consent form by clicking "agree" to continue. I advised participants that they would be volunteering information and need not identify themselves or the entity they represent.

There have been inconclusive discussions about the use of web-based surveys (WBS) versus paper-based surveys (PBS). Le et al. (2018) implied that collecting survey data via the web does not produce different results than data collected via paper. Opposingly, Iskandar et al. (2018) demonstrated that the outcomes of surveys are vastly different when data are collected using WBS versus PBS. In both studies, the survey instruments were common between WBS and PBS. The samples of the WBS and the PBS were different in both cases. In investigating a common phenomenon, using a random sample of the population should give the same result as another random sample (Creswell & Plano Clark, 2018; Saunders et al., 2019). Where the issue is uncommon or concentrated on members of a particular demographic, two random samples of the population could give divergent outcomes from lack of representivity in the datasets (Creswell & Plano Clark, 2018). In my study, I did not have this issue; my sample was

not based on the web but used the web as a conduit to collect the data. My sample was independently selected from a government database and the participants were either asked to complete the survey via the web or in person. I downloaded completed surveys into Excel and then into SPSS for descriptive and inferential statistical analyses.

Data Analysis

Quantitative data analysis (QDA) is more than number crunching; it gives meaning to data. Saunders et al. (2019) indicated that using QDA allows the researcher to identify trends and patterns in the data and how variables relate to each other. In extracting information from data, the use of QDA allows hypotheses to be tested and underlying causes and effects of a phenomenon to be extricated (Creswell & Plano Clark, 2018; Saunders et al., 2019). Before conducting detailed analyses, Pearson (2018) and Hopkins et al. (2018) advised that the researcher should become familiar with the type and limitations of the data, and examine whether data are ordinal, discrete, continuous, nominal, or contain outliers. Knowing the data allows the appropriate mechanics to be applied in analyzing the data and reducing or removing processing errors (Green & Salkind, 2017; Hopkins et al., 2018; Pallant, 2020; Sharma, 2020). In businesses and organizations, using QDA allows business leaders to establish strategies, examine the likeability and marketability of their products or services, be innovative in their operations, and design new products and services (Itzhak, 2018; Wright et al., 2019). Schawe et al. (2020) and Wright et al. added that QDA allows leaders of businesses and organizations to exploit markets and build and improve competition within markets. QDA is an important tool in business as it allows business leaders to identify leakages,

income strengths, and the potential strengths of their products and services resulting in decisions to be taken that minimize expenses and maximize income and profits.

In my study, I used QDA to examine the relationship between ERM and MSMEs' success. I answered the research question: What is the relationship between MSME's general internal environment and objective setting; general control activities, information, and communication; HORM; specific risk identification and risk assessment activities; and business success? From this research question, I developed a null and alternative hypothesis:

H_0: There is no relationship between MSMEs' general internal environment and objective setting; general control activities, information, and communication; HORM; specific risk identification and risk assessment activities; and business success.

H_1: There is a relationship between MSMEs' general internal environment and objective setting; general control activities, information, and communication; HORM; specific risk identification and risk assessment activities; and business success.

Hypothesis testing is essential to research utilizing quantitative methodology. It uses a p-value and confidence interval to guide the acceptance or rejection of the null hypothesis relative to the alternative hypothesis (Creswell & Plano Clark, 2018; Saunders et al., 2019). Though there has been increased debate on the reliability of p-values in hypotheses testing, it is nonetheless deemed essential for quantitative scientific research (M. Cohen, 2019; Cook et al., 2019; Harrington et al., 2019; Wasserstein et al., 2019). Saunders et al. (2019) and other experts in the field of research argued that hypothesis testing is needed to extrapolate an observation within a sample to the broader population.

Creswell and Plano Clark added that hypothesis tests are essential to establish the causation of a phenomenon, to establish differences in experimental samples, and to confirm the significance of trends within a phenomenon. In my research, I used hypothesis testing to confirm whether or not the ERM is related to MSMEs' success and to generalize that conclusion to the entire population of MSMEs.

Hypothesis testing is not all. Scheel et al. (2021) and M. Cohen (2019) expressed the need for researchers to understand their data before hypothesis testing. Understanding the concepts that drive the investigative phenomenon, which describes the phenomenon, and the assumptions accompanying the study are essential pre-hypotheses requirements (Scheel et al., 2021). In my study, after downloading the survey output, I explored the data in Excel to identify inconsistencies and extremities before coding SPSS to accept the data. I made no change to the intended responses of any of the respondents. Watkins (2018) suggested that outliers in the data could distort the results and validity of the study. Where the outliers were caused by errors in inputting the data, I corrected the data. On the other hand, where the data I entered was not erroneous, I followed Watkins' advice that the outliers could also indicate that the participant was not from the intended population and should be removed from the study.

After I cleaned the data, I began the process of analyzing the data. Researchers who use quantitative data suggested that there are two types of statistical analyses: descriptive and inferential (Bordens & Abbott, 2022; Creswell & Creswell, 2018; Green & Salkind, 2017; Pallant, 2020; Saunders et al., 2019). Gupta et al. (2019) implied that descriptive statistics are summaries of the sample that define or describe the sample or

the population from which the sample is drawn. One of the two measures of descriptive statistics is the central tendency which gives information about how the data relate to the central point within the data. It includes computing mean, mode, and median. Measures of dispersion, the second of two types of descriptive statistics measures, give information on the shape of the data, and how the data spreads or is distributed (Bordens & Abbott, 2022; Gupta et al., 2019). Pallant (2020) added that the variance, kurtosis, quartiles, and range are some examples of measures of dispersion. In my study, I used descriptive statistics to describe my dataset and to aid my testing of preconditions for inferential statistics.

Inferential statistics allow the researcher to draw conclusions from the quantitative study. Mishra et al. (2019) outlined that for correct conclusions to be drawn from quantitative studies, the researcher must select the appropriate inferential statistical methods that depend on the objective outcome of the study, the type and distribution of the data, and whether participants are paired or unpaired. Best to establish causal or effectual relationships, studies with paired participants allow participants to be observed at different points in the study (Creswell & Plano Clark, 2018). For paired groups, special inferential statistical tests were designed of which the paired t-test is one (Mishra et al., 2019). The unpaired statistical test, the independent t-test, is used for independent samples. Mishra et al. suggested that a study that has discrete data must use statistical measures that are discrete; employing linear regression instead of logistic regression on categorical data would produce spurious outcomes. The researcher must select the statistical measures which are aligned with the study data. Statistical measures must be

selected which meet the objectives of the study. A study that explores relationships among variables would not produce reasonable outcomes if the statistical measures were akin to those for causal conclusions (Creswell & Plano Clark, 2018). In my study I explored how ERM relates to MSMEs' success; my statistical measures were correlational. My study did not seek to establish causation; I did not pair participants nor employ statistical measures designed for pairing. I used statistical measures for unpaired sample sets. Also, my dataset was in the form of a survey with which responses were ordinal on a Likert-type scale. I used statistical measures which were designed for an ordinal, noncontinuous dataset.

Quantitative correlational design uses a family of statistical methods to establish relationships among variables (Green & Salkind, 2017). The selected statistical method depends on the intent of the study, the type of data being discrete or continuous, and the number of variables forming the relationship. My study consisted of four independent or predictor variables and one dependent variable. In my study, I sought to identify the relationship of the four independent variables to the one dependent variable. Green and Salkind (2017) and Pallant (2020) argued that correlational studies that examine more than one independent variable against one dependent variable should use multiple linear regression analysis. Mahmoudi et al. (2017) and Plonsky and Ghanbar (2018) added that multiple linear regression describes the strengths of the relationships between each independent variable and the dependent variable. Montgomery et al. (2021) detailed that multilinear regression seeks to find coefficient values, the strength of the relationship, or the sensitivities of each independent variable to the dependent variable. Mathematically,

in respect of my study, Montgomery et al. suggested that multilinear regression solves the equation:

$$Y = C + s_1X_1 + s_2X_2 + s_3X_3 + s_4X_4$$

Where:

- Y represents the value of the dependent variable, MSME's success. This has a value of C when each independent variable is zero
- X_1 represents the value of independent variable 1, internal control
- X_2 represents the value of independent variable 2, internal environment
- X_3 represents the value of independent variable 3, HRMS
- X_4 represents the value of independent variable 4, risk assessment strategies
- s_1, s_2, s_3, s_4 are the regression coefficients or sensitivities of the independent variables to the dependent variable. For every unit change in any independent variable, the dependent variable changes by the respective sensitivity value. If internal control increases by 1 unit, then the value of business success would increase by s_1 units (as described by Montgomery et al., 2021).

There are other forms of regression analyses, but these were not appropriate for my study. Montgomery et al. (2021) and Green and Salkind (2017) described bivariate or simple linear regression, which uses one predictor variable to estimate the value of the dependent variable. Montgomery et al. and Green and Salkind also defined the hierarchical multilinear regression analysis as a multilinear analysis that restricts or

controls the independent variables' influence on the dependent variable. Theobald et al. (2019) demonstrated the need for particular types of linear regressions, generalized linear models (GLMs), which do not require normal distribution among independent variables; in some cases, independent variables can be nominal. GLMs use stochastic link functions to convert an independent variable into a quasi-independent variable, which would be used in the multiple linear regression model (Carvalho et al., 2018). My study used four independent variables. I did not restrict any of the independent variables nor employ stochastic link functions to establish intermediary independent variables for the linear regression model. Bivariate linear regression, hierarchical multilinear regression, and GLMs were unbefitting to my study.

I also considered other correlational designs, but these were not appropriate for my study. Denis (2019) noted that statistical measures have peculiar functions; the researcher must understand the use of each statistical measure and then make an appropriate selection. In the 11th chapter of their book, Bordens and Abbott (2022) outlined alternate statistical methods to determine the relationship between multiple independent variables and a dependent variable. Other than multiple linear regression, Bordens and Abbott suggested using factor analysis and multivariate analysis of variance. Saunders et al. (2019) and Green and Salkind (2017) added t-tests, Pearson's correlation analysis, and discriminant analyses. Pearson's correlation is used on univariate independent variable relationships with a single dependent variable, but my study consisted of four independent variables (Pallant, 2020). Creswell and Plano Clark (2018) noted that t-tests are used to establish whether there are changes in the intra-group

relationship of independent and dependent variables between two separate groups. Likewise, the analysis of variance and the multivariate analysis of variance are used to compare the mean across samples with the exception that multiple analysis of variance considers multiple dependent variables (Christensen, 2018). My study contained only one group, did not seek to establish changes in the relationship between groups, and had only one dependent variable; invalidating the suitability of the t-test, analysis of variance, and multiple analysis of variance for my study. Factor analyses and discriminatory analyses seek to explain the sample or population by identifying significant factors or grouping significant factors in categorical factors. Neither factor analysis nor discriminatory analysis satisfied my study design (Bandalos & Finney, 2019; Saunders et al., 2019). I did not try to identify, group, or eliminate factors that give rise to business success. Instead, I investigated how Lundqvist's (2014) four pillars of ERM relate to MSMEs' success. Having considered all the statistical measures, multilinear regression was ideal for my study; the others either did not fit my data type or distribution, the aim and purpose of my study or were out of line with my sample set.

Saunders et al. (2019) advised that for statistical analyses to be relevant, the data must meet the prerequisites for the statistical measures employed. I carefully examined my data to ensure that all the assumptions for inferential statistical analyses were met or if violated, that the workarounds were sound and acceptable. Researchers and practitioners have generally agreed that multilinear regression requires data that satisfy the following five conditions (Bordens & Abbott, 2022; Bougie & Sekaran, 2019;

Creswell & Plano Clark, 2018; Denis, 2019; Navidi, 2020; Pallant, 2020; Saunders et al., 2019):

1. Linearity: There should be a linear relationship between the independent variables and the dependent variable;
2. No multicollinearity: The independent variables should not significantly react or correlate together;
3. Homoscedasticity: The residuals or the difference between the predicted value and the actual value of the dependent variable at each data point should be within a constant range or clustered about a central line;
4. Multivariate normality: the residuals of the model are normally distributed;
5. Independence: The observation or the residual should be independent of another.

Creswell and Plano Clark (2018) and Saunders et al. (2019) emphasized the importance of checking pre-conditions before forming conclusions from statistical measures. The sampling technique of the researcher and the researcher's philosophy and need are important ingredients to statistical testing (Green & Salkind, 2017; Parsons et al., 2018). In my research, I tested my dataset for the preconditions of each of the multilinear models and then chose the most appropriate of the five major conditions of the multilinear regression model that suited my dataset and the purpose of my study. I employed some established statistical procedures in examining my dataset. A scatterplot diagram is a good visual aid that shows how variables relate over a domain. Scatterplots

are useful to spot linearity, homoscedasticity, independence of residuals, and normality (Bordens & Abbott, 2022; Christensen, 2018; Pallant, 2020; Yu et al., 2020).

A random sample may include outliers which are data that are unrepresentative of the rest of the sample. These outliers may be too large, too small, or too influential on the dependent variable when compared with the other data points within the sample (Sullivan et al., 2021). Outliers tend to skew the outcome of the summary statistics such as the mean, and variance, and could interfere with the normality and strength of statistical tests thus introducing biases in the quantitative analyses (Sullivan et al., 2021; Thériault et al., 2024). Pallant (2020) suggested the use of boxplots to determine whether outliers are contained in a dataset. Ghorbani (2019) considered that boxplots may conceal some outliers as variables comingle; thus, a stronger test for outliers was needed, the Mahalanobis distance test. For Mahalanobis distance, the entire dataset is transformed into an uncorrelated standardized dataset, and for each data point, the Mahalanobis distance is the distance between the data point and the mean of the transformed standardized uncorrelated dataset (Ghorbani, 2019; Li et al., 2019). Li et al. (2019) suggested that for studies such as my doctoral study, the common practice is that outliers are those data points with Mahalanobis distance values that exceed the chi-square distribution with n-degrees of freedom at the 0.1% significance, where n is the number of independent variables. Thus, the plan was to investigate all data points with Mahalanobis distance, M_i, that surpassed the chi-square exceedance point thus which satisfied the following:

$$M_i > \text{Chi-Square}\ (0.001, 4\ \text{df})$$

i.e., $M_i > 18.467$

Notwithstanding, further research implied that outliers must be considered for all the dimensions of the dataset and the impact on the predictor variable. El-Masri et al. (2021) suggested that Cook's distance was more robust in detecting outliers than the Mahalanobis distance as Cook's distance considered all the dimensions of the dataset and the impact of each data point on the predictor variable. Data points with Cook's distance exceeding 1 are considered outliers and should be investigated much more thoroughly or excluded from the dataset (El-Masri et al., 2021). I used boxplots, scatterplots of residuals, Mahalanobis distance, and Cook's distance to identify outliers in my dataset and to decide whether to exclude them where they existed.

Normality is an important requirement for multiple regression modeling. Statistical tests used to confirm or reject hypotheses are grounded on the basis that data are normally distributed. Generalizability cannot be established without hypothesis testing. Thus, a lack of normality implies a lack of generalizability. Normality can be confirmed by distributing the data on a bar chart with an embedded normal curve, using probability (p-p) and quantile (q-q) plots, the combination of kurtosis and skewness, and the use of the normality tests in SPSS (Gupta et al., 2019; Pallant, 2020). Normality tests in SPSS are the Kolmogorov-Smirnov and the Shapiro-Wilk tests and both must have a significance exceeding 0.5 for normality (Pallant, 2020). Kurtosis is a measure of the relative frequency of the data contained in the extremity of the distribution compared with the normal distribution, plots of data with high kurtosis would see more of the data contained in the tails of the distribution than distributed throughout (Mohammed et al.,

2020; Navidi, 2020). Skewness measures the symmetry of the data (Navidi, 2020). Gallagher (2020) reported that for absolute normality, measures of absolute kurtosis and skewness have values of three and zero respectively. However, for research, normality can be demonstrated from skewness and kurtosis where their absolutes values are less than 0.5 and 3 respectively (Hatem et al., 2022). Further, researchers who want to be very sure of normality conclusions should compute the z-values of skewness and kurtosis, and where their absolute values fall below 2.58, the dataset is normal for sample sizes of $50<n<175$ (Demir, 2022).

Fundamental to social science research and inferential statistics is that there is no autocorrelation present in the dataset, meaning observations are independent. With this, the response of any participant is not influenced by, nor related to the response of another. The lack of independent observations increases the effect sizes of anomalies and invalidates the study (Wolf & Harbatkin, 2022). The independent observations should produce residuals that are also independent. Though selecting participants randomly is good practice to ensure the independence of observations, the researcher should test that the data are made up of independent observations. The Durbin-Watson test measures the level of independence in the distribution of residuals from each iteration and returns a value of 2 for the perfect independent distribution (MacKinnon, 2018). Pallant (2020) suggested that scatter plots of residuals against predicted values should show randomness if data points are independent. In this study, participants were selected from a stratified random approach, and I used both scatter plots of residuals and the Durbin-Watson tests to confirm the independence of observations.

Multicollinearity measures the level of dependence among independent variables in multi-regression models. Ideally, the correlations between the independent variables should not be strong and thus have correlation coefficients that are not close to 0.8 (Shrestha, 2020). Chan et al. (2022) explained that multicollinearity weakens the predictability of the regression model especially when the independent variables take on values that they had not had before. However, strong correlations among independent variables are only a symptom of collinearity and do not imply the certainty of a significant impact of collinearity on the model (Chan et al., 2022). Shrestha (2020) suggested that the researcher must examine the tolerance of collinearity on the model using the variance inflation factor (VIF) and the eigenvalue method. Shrestha suggested collinearity becomes moderately problematic when VIF exceeds 5 or eigenvalue is less than 0.05, and strongly problematic when VIF exceeds 10. In support of their product, SPSS, IBM's engineers suggested that a collinearity condition index, a function of eigenvalue, of less than 15 indicates that collinearity is not a problem (IBM, 2021).

In my study, I applied each of the tests to ensure that I satisfied all the underlying assumptions for the multilinear regression model. Table 3 below summarizes the tests I employed in checking the assumptions. I used both parametric and nonparametric tests to confirm meeting the assumptions. Parametric tests are statistical tests where information or statistical distribution about the population is known; they use the mean as its measure of central tendency (Hopkins et al., 2018). Variables for the parametric tests are defined over the interval or ratio scales; these variables are usually continuous. Nonparametric tests do not rely on the knowledge of any information or statistical distribution about a

population or sample (Hopkins et al., 2018). The nonparametric test statistic is arbitrary and uses the median of the sample as its measure of central tendency. Variables of interest under the nonparametric scale are more flexible and can be ordinal, nominal, or continuous (Hopkins et al., 2018). For every parametric test, there is a corresponding nonparametric test (Pallant, 2020). Boxplots, scatter plots, q-q plots, and bar charts are all nonparametric; skewness, kurtosis, and Durbin-Watson are parametric tests, and correlations are either parametric or nonparametric (Green & Salkind, 2017; Pallant, 2020).

Table 4

Statistical Tests Used to Confirm Assumptions for Multilinear Regression

	Statistical Test of Assumptions							
Assumption	Box-Plots	Scatter Plots	Distance Tests	Bar Chart with Normal Curve	Q-Q & P-P Plots	Skewness & Kurtosis & SPSS Normality Checks	Durbin-Watson	Correlations VIF, Eigenvalue, Condition Index
Independence of residuals		●					●	
Linearity		●						
Normality		●		●	●	●		
Homoscedasticity		●						
No Multicollinearity								●
Outliers	●	●	●					

Note. The table shows the statistical tests I used to confirm assumptions for the regression model I employed in my study. Dots represent the test selected for the corresponding assumption.

Violating assumptions for the multilinear regression model could have serious consequences. One of the benefits from correlational studies is that it allows predictability of the dependent variable based on the values of the independent variables (Bordens & Abbott, 2022; Saunders et al., 2019). The violation of the underlying assumptions of the multilinear regression model could impact the description of the relationship between the independent and dependent variables, reducing predictability, validity, and reliability (Schmidt & Finan, 2018). Violations introduce noise in the model akin to biases, and these impair the ontological and epistemological constructs befitting multilinear regression models (Al-Ababneh, 2020; Saunders et al., 2019). The result is

spurious outcomes which could have dire consequences to economies, societies, and research in general.

In my research, it was incumbent on me to check for violations of assumptions. Primarily, I employed the bootstrap approach to resolve violations. Bootstrap is flexible to resolve all types of likely violations without compromising the quality of the analyses or inferences from the analyses (Gilleland, 2020; Xu et al., 2020). Bootstrap uses the current sample to simulate thousands of samples and then produces a statistical distribution that describes the sample and by extension the population from which the initial sample is drawn (Dikta & Scheer, 2021). With the number of simulated samples, the central limit theorem deemed the bootstrapped distribution as normal and applicable for use in multilinear regression analyses (Eck, 2018; Mwiti et al., 2019).

Study Validity

Study validity is a vital component of all research. The need to have research conclusions accepted by professionals and others outside of the research, and applicable to situations similar to the research, behooves researchers to ensure their research has high study validity (Creswell & Creswell, 2018). Study validity is the extent to which a study is free from three components: biases, errors, and misalignment (Urban & van Eeden-Moorefield, 2018). Where these three components are fully absent from the study, the study would be of the highest study validity.

External Validity

For quantitative studies, Saunders et al. (2019) and Urban and van Eeden-Moorefield (2018) emphasized that validity is reached if the study is internally and

externally valid. External validity relates to applying the conclusions to other similar situations (Saunders et al., 2019; Urban & van Eeden-Moorefield, 2018). External validity also refers to whether there are biases, errors, or misalignments in the data instrument, data collection, data analyses, and reporting conclusions. Anything that introduces biases, errors, or misalignment to the study would externally invalidate the study. Even if the conduct and comments of an investigation are valid, but the data instrument is invalid, the study would be invalid (Surucu & Maslakci, 2020).

Surucu and Maslakci (2020) amplified the need for researchers in quantitative studies to use data instruments that are of high validity and reliability. Data instrument validity implies content validity in that the data instrument measures only the content of the construct it was intended to measure (Almanasreh et al., 2019). Including less or more content than the intended construct requires would make the data instrument content invalid. Likewise, construct invalidity invalidates the data instrument. Embedded in data instrument validity is the requirement that the instrument must be construct valid (Surucu & Maslakci, 2020). Construct validity relates to the extent to which the data instrument is testing the intended hypothesis (Bowman & Goodboy, 2020; C. Stone, 2019). Wanting to test the construct of application of multiplication but using an instrument that tests the construct of multiplication arithmetic would imply that the measuring instrument was invalid. Researchers who use quantitative research methodology have accepted and used peer reviews, confirmatory factor analysis, and exploratory factor analyses as effective tools in establishing content and construct validity of data instruments (Almanasreh et al., 2019; Bowman & Goodboy, 2020; DeSmet et al., 2018; Surucu & Maslakci, 2020).

Though a valid data instrument is usually a reliable instrument, researchers have seen it fit to establish instrument reliability independent of instrument validity (DeSmet et al., 2018; Surucu & Maslakci, 2020). Instrument reliability relates to the efficiency of the data instrument to produce similar results when used to measure the same construct at different times (Mueller & Knapp, 2019). Instrument reliability implies that the instrument must be internally consistent and produce consistent outcomes whenever it is used (DeSmet et al., 2018). Demonstrating the instrument is both internally consistent and reproducible would be to prove that the instrument is reliable. Consistent with other researchers, Wahono and Chang (2019) and Surucu and Maslakci (2020) suggested that the reproducibility of outcomes for the data instrument can be tested using the test-retest reliability and alternative forms tests. Cronbach alpha has been widely used and accepted to examine the internal consistency of the subconstructs of the data instrument (Nguyen & Habók, 2021). Surucu and Maslakci argued that researchers using an established highly reliable data instrument, need not go through the rigor of testing the reliability of the data instrument for their research but should only examine the internal consistency with the Cronbach alpha test.

In my study, I used questionnaires as my data instrument. These questionnaires were used by many researchers before me. I demonstrated under the Data Collection Instrument subsection of this document that the validity and reliability constructs and content of the questionnaires I employed were well established and tested using common and acceptable methods or mechanisms. Consistent with the advice of Surucu and Maslakci (2020), I did not need to demonstrate that any of my data instruments were

valid or reliable except to show, using Cronbach alpha, that the instruments were highly internally consistent.

Knowing that the validity of my study was impacted not just by the data instrument, I employed mechanisms to ensure the validity of my study. Errors and biases in my approach, collection or analyses of data, or reporting of the findings could compromise the validity of my research. To remove unnecessary biases, I was careful to adhere to the research ethics guidelines of *The Belmont Report* (NCPHSBBR, 1979) which I discussed under the Ethical Research subsection of this document. Implied from the approach of Wohlin (2021) in their research design and execution, researcher error or bias could have a significant impact on the acceptability of the study. The researcher should conduct research without imposing themself on the study. The sample size and sample selection could determine the quality of the research. Saunders et al. (2019) and Fernández-Castilla et al. (2019) have argued that the sample must be small enough to be representative of the targeted population and large enough to prevent avoidable errors and large variances. The procedure for selecting the sample size for my study was detailed under the Population and Sampling subsection of this document. There I explained that I decided on the sample size for my study after examining general and best practices and attaining an acceptable power for my study.

Forming conclusions from statistical analyses exposes the researcher to two types of errors. Statistical analyses are underpinned by hypotheses examinations involving accepting or rejecting a null hypothesis over an alternative (El-gohary, 2019). Concluding that the null hypothesis is to be rejected when it should not be, is an error in statistical

conclusion, Type 1 error or false positive error, or the study's alpha (α). Failing to reject the null hypothesis when it should be rejected is an error in statistical conclusion, Type 2 error, false negative error, or the study's beta (β). Brereton (2020) suggested that the researcher must determine whether Type 1 or Type 2 error is better to minimize given the conditions of their study. A judge may be more concerned about not convicting an innocent person and would want to reduce the Type 1 error, but a doctor who would want to reduce concluding that an individual is healthy when the individual is sick would be more concerned with minimizing the Type 2 error (Brereton, 2020).

Type 1 and Type 2 errors can be reduced but not eliminated. To have no Type 1 or Type 2 error would suggest that the sample size is infinitely large to allow the consideration of all likely causes of making a false statistical conclusion (Hoffman, 2019). Increasing the sample size causes more information about the population to be revealed, increases the power of the study, and commensurately reduces β, the Type 2 error of the study. The power of the study is the reverse of the beta and is computed by subtracting beta from 1. As the sample size increases, the greater the likelihood of rejecting the null hypothesis if the significance of the study, the study's α, is not commensurately reduced (Maier & Lakens, 2022). A balance between reducing α and β or by extension reducing α and increasing the power of the study needs to be realized. In my research, I applied the research convention for the values of α, β, and the power of the study. Maier and Lakens (2022) elucidated the evolution of this convention and suggested that where researchers do not need to deviate from the convention, they should rely on it by setting α, β, and the power of the study to be respectively 0.05, 0.20, and

80%. For my study, I did not need to deviate from the established convention and the sample size for my study was determined after applying the research convention to G*Power the works of Tabachnick and Fidell (2018).

Internal Validity

Internal validity refers to the extent to which the result of the dependent variable was caused by the changes in independent variables (Urban & van Eeden-Moorefield, 2018). Saunders et al. (2019) supported the point that internal validity relates to establishing a cause-and-effect relationship between the independent and dependent variables. Flannelly et al. (2018) and Aguiar (2018) went on to suggest that these causal demonstrations are established by experimental and quasi-experimental research designs. My study did not establish causal relationships and was neither experimental nor quasi-experimental; I did not demonstrate internal validity to prove the validity of my study.

Transition and Summary

My study was a quantitative correlational study where I examined the relationship between general internal environment and objective setting; general control activities, information, and communication; HORM; specific risk identification and risk assessment activities; and business success of Jamaican MSMEs. I used Lundqvist's (2014) four pillars of ERM as my primary ERM theory because it outlined a framework that could be easily implemented, monitored, and understood within MSMEs in Jamaica. Also, Lundqvist suggested that the first two pillars, general internal and objective setting component and general control activities, information, and communication, could be implemented without a plan or concentration to implement ERM. The other two pillars,

HORM, and specific risk identification and risk assessment activities are purposefully implemented for the function of RM within an organization. Examining the Lundqvist model within the MSMEs would give information as to whether the leaders of the MSMEs consider ERM important and whether they are implementing an ERM strategy in phases. For business success, I used a noninvasive measure based on the works of Chandler and Hanks (1993). Leaders of MSMEs are usually reluctant to disclose or share their financial information or data; MSMEs might not have proper records to facilitate more invasive analyses.

Errors, biases, and misalignments can invalidate the conclusions of the study. To eliminate these threats, for my quantitative study, I adopted the ethics guidelines of *The Belmont Report* (NCPHSBBR, 1979) when interacting with participants. Guided by the works of Tabachnick and Fidell (2018), who established research conventions for the values of Types 1 and 2 error appetite and research power, and using G*Power software, I selected a sample size between 85 and 175 participants. Participants in my sample were owners or operators of MSMEs in the Kingston metropolitan region of Jamaica which were formally registered to carry on business in Jamaica. I allowed no more than one person per MSME to participate. The internal consistency of my data instruments was examined using Cronbach alpha which was in keeping with quantitative research guidelines. I used the ArcGIS Survey123 software to collect survey data as using it allowed checks and balances of the data inputs to reduce transmission errors of the data, it allowed both online and offline data collection, and it kept track of my target attainment. The data were collected via self-response, online interviews, or in-person

interviews depending on the preference of each participant and after each participant consented to participate. To protect each participant, I included a confidentiality statement on the consent form which bars me from sharing the participant's identity with anyone and by which I am bound to securely store participants' data for at least 5 years. All participants participated based on anonymity.

The SPSS software was the main statistical tool to allow both descriptive and inferential statistics reporting and analyses. Using SPSS facilitated the graphing of data and mechanisms to confirm compliance with the assumptions of statistical tests I used in inferential statistical analyses. Because I needed to examine the relationship of four independent variables to one dependent variable, I used the multilinear regression analysis as from it the sensitivity of each independent variable on the dependent variable could be established.

In Section 3, I report on the findings from my study. I present the descriptive statistics and show how I arrived at conclusions from the inferential statistics. Importantly, I demonstrate whether there is a relationship between MSME's internal control, internal environment, HRMS, risk assessment strategies, and business success within the context of Jamaican MSMEs. I also demonstrate the applicability of my study to professional practice and show how my study contributes to social change. I include in Section 3 recommendations for action and future research and will conclude with some reflections and conclusions.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this quantitative correlational study was to examine the relationship between Lundqvist's (2014) four pillars of ERM and the business success of Jamaica's MSMEs. The four pillars were internal environment, internal control, holistic risk management strategies, and risk assessment strategies. The targeted population was MSMEs from the Kingston metropolitan area of Jamaica. After performing inferential statistics on the data obtained from the sample, I rejected the null hypothesis that there was no statistically significant relationship between the independent variables and the dependent variable. I concluded that there is a significant relationship between implementing ERM and the success of MSMEs from the Kingston metropolitan area of Jamaica. In the succeeding sections of this chapter, I report on the descriptive and inferential statistics and the assumptions testing from this correlational quantitative study. I include applications to professional practice, recommendations for action, recommendations for further research, implications for social change, and the conclusions of this study.

Presentation of the Findings

Important to all studies is the presentation of study findings. In this subsection, I present descriptive statistics, assumption tastings, and inferential statistics from this study. Aided by IBM SPSS Statistics Version 25 software, I used multilinear regression analysis to examine the relationship between Lundqvist's (2014) four pillars of ERM, the independent variables, and the business success of MSMEs, the dependent variable. I

found that there was a statistically significant relationship between general internal environment and objective setting; general control activities, information, and communication; holistic organization of risk management; specific risk identification and risk assessment activities; and business success.

Descriptive Statistics

This study's participants were 85 executives or owners from 85 MSMEs in the Kingston metropolitan region of Jamaica. All participants completed the online survey by answering all the questions contained in the survey. The survey collected data on the four independent variables and one dependent variable. Table 5 shows the descriptive statistics of each independent and dependent variable.

Table 5

Descriptive Statistics (Indices) of Independent and Dependent Variables

Variable	Mean	Std. Deviation	Number
General internal environment and Objective setting	0.432	0.745	85
General control activities, Information, and Communication	0.532	0.740	85
Holistic organization of risk management	-0.293	0.909	85
Specific risk identification and Risk assessment activities	0.563	0.780	85
Business Success	0.185	0.815	85

Reliability Check

As part of my data validation, I assessed the reliability by focusing on internal reliability. According to Surucu and Maslakci (2020), because I was using established data collection instruments, I needed only to check the internal consistency of my data to demonstrate the validity and reliability of my research.

Reliability is the level of internal consistency within each subconstruct of a study. Cronbach alpha is a strong mathematical tool used to test the strength of the internal consistency of the subconstructs of the data instrument (Nguyen & Habók, 2021). Shrestha (2021) suggested that $\alpha > 0.7$ is acceptable to conclude that a subconstruct was internally consistent and, thus, reliable. My study had five constructs. Each of Lundqvist's four pillars of ERM formed one construct and the fifth construct was business success. Business success had three subconstructs. I used Cronbach's alpha to test the reliability of the four constructs and three subconstructs. Table 6 shows that for each construct or subconstruct, Cronbach's alpha exceeded 0.7 significantly and thus suggested that each construct and sub-construct was internally consistent or reliable.

Table 6

Cronbach's Alpha for each Construct and Subconstruct

Construct	Cronbach's Alpha	N
Pillar 1: General internal environment and Objective setting	0.908	11
Pillar 2: General control activities, Information, and Communication	0.804	5
Pillar 3: Holistic organization of risk management	0.965	16
Pillar 4: Specific risk identification and Risk assessment activities	0.883	6
Business success measure		
Business Statistics	0.885	3
Satisfaction with company's outcome	0.964	8
Performance relative to competitors	0.957	8

Tests of Assumptions

The researcher plays an important role in research designs. One of those roles is to ensure that the results from statistical analyses are valid. In performing such a role, the researcher must examine the adherence to the assumptions embedded as prequalification

to the use of statistical measures. Shatz (2023) suggested that in checking the assumptions, the researcher should employ mathematical examination, visual examination, and effect size examination. Failure to satisfy the embedded assumptions could result in invalidating the study results by imputing biases and invalid statistical measures and making the study more likely to be irreplicable (Abulela & Harwell, 2020; Shatz, 2023). Before concluding the results of this study, I examined the existence of outliers within the data set, multicollinearity among the independent variables, and independence of observations, and checked whether the homoscedasticity, linearity, and normality assumptions were met.

Outliers

Undetected outliers in any study could have significant and unrealized consequences on the study's conclusions, reliability, and validity. For this study, I was very careful to ensure my study's conclusion was not affected by outliers. I performed a series of tests to identify the presence of outliers and whether the impact of any of the data points was too influential on the dependent variable. First, I used the boxplot on each variable and this test showed no outliers existed. However, the boxplots do not test the interactions of the variables, so I used the Mahalanobis distance test. I used SPSS to compute the Mahalanobis distance, M_i, for each data point and considered whether it surpassed the chi-square exceedance point. I also used SPSS to compute Cook's distance for each data point.

My dataset contained no outliers. The boxplots for each variable showed that no data point fell outside the whiskers and thus failed to identify that the dataset contained

outliers. The highest Mahalanobis distance in the dataset was 14.880 which was less than the chi-square exceedance point of 18.467. Mahalanobis distance also failed to identify outliers. The highest Cook's distance was 0.143 which was less than 1; Cook's distance failed to identify outliers. The last test was the scatter plot of the residuals against the predicted values from the regression. The scatterplot, Figure 3, showed the concentration of the residuals about 0, thus suggesting there was no outlier in the dataset.

Multicollinearity

No multicollinearity among independent variables is traditionally demonstrated from the correlation factor among the independent variables having values that imply less than a strong correlation (Pallant, 2020). In this study, I not only examined the correlation coefficients among independent variables, I also examined their VIF values and the regression model's eigenvalue and collinearity diagnostic condition index. Three of the independent variables correlated with each other with correlation factors that were close to 0.8 and thus according to Pallant (2020) and Shrestha (2020), these variables had high correlations. The highest VIF, lowest eigenvalue, and highest collinearity diagnostic condition index were respectively 3.046, 0.115, and 5.059. These values were nowhere close to their respective exceeding points of 5, 0.05, and 15 suggesting that collinearity was not a problem in this regression model.

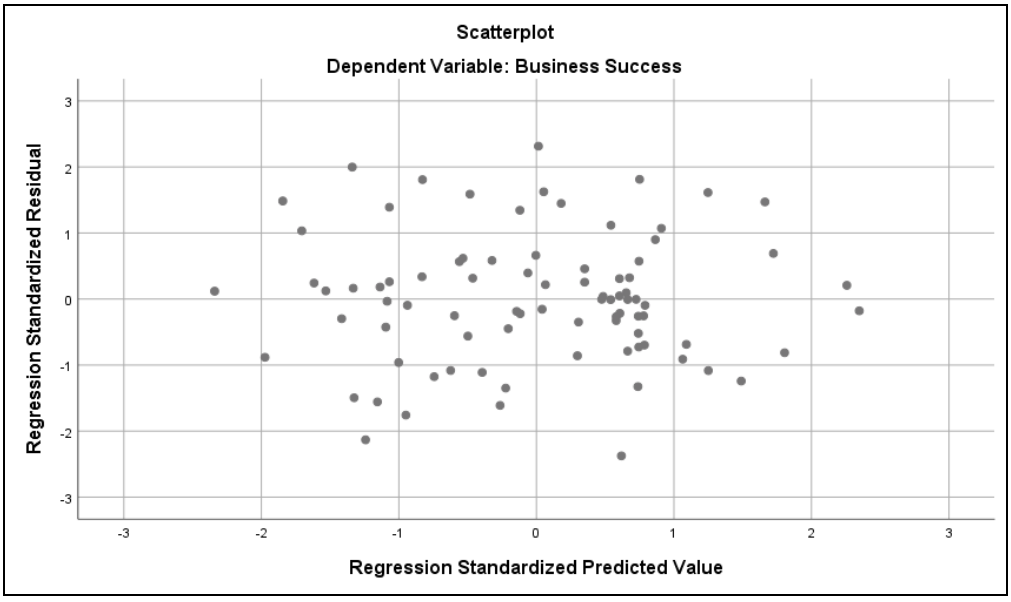
Independence of Observations, Homoscedasticity, & Linearity

Observations or responses in my study were independent and homoscedastic. Especially in correlation studies, non-independence will affect the correlation coefficients and the overall generalizability of the study (Obilor, 2023). Though I selected participants

for my survey from a stratified random approach, the Durbin-Watson test and the scatter plot of residuals confirmed that I had independent observations. Privitera (2023) suggested that an excellent test of similar variability, homoscedasticity, can be done by examining the scatter plot of residuals while moving along the independent axis away from the dependent axis. Similarly, James et al. (2022) suggested that a residual plot showing a horizontal distribution along the x-axis demonstrates linearity and the appropriateness of the linear regression model to the data. From the SPSS output, the Durbin-Watson value was 2.040 which is extremely close to the value of 2 for perfect independence of observations. The scatter plot of residuals against predicted values, Figure 3, showed no pattern except for randomness and almost equidistance about a mean value of zero thus, confirming the homoscedasticity assumption, the independence of observation, and the linearity assumptions were fully met.

Figure 3

Scatter Plot of Regression Residuals Against Predicted Values

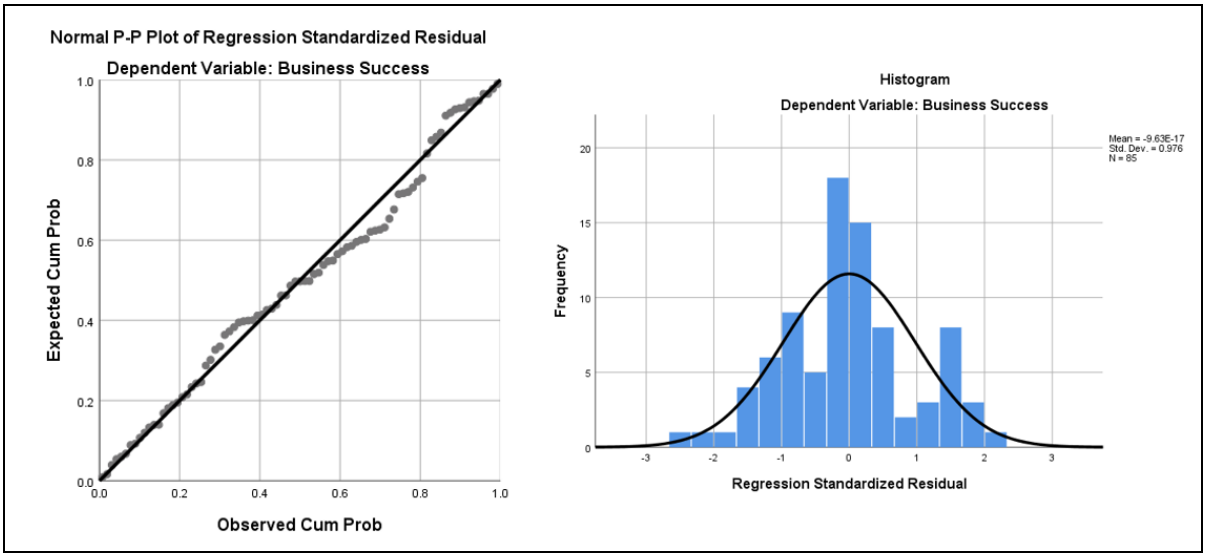


Normality

I evaluated the assumption of normality using both graphical and mathematical instruments. The scatterplot of residuals showed randomness and was almost equidistant from the mean value of zero, Figure 3, thus indicating normality. The q-q plot for each independent variable and the p-p plot, Figure 4, for the dependent variable showed plots of values that nicely wrapped the diagonal thus indicating the normality of each variable. The histogram, Figure 4, with the embedded bell curve showed that the frequency distribution of the regression residuals was normally distributed thus indicating that the normality assumption was met.

Figure 4

P-P plot & Histogram of Regression Residuals



Mathematical tests also implied that the dataset for this study was normally distributed. For normality, the significance of the Kolmogorov-Smirnova (KS) and the Shapiro-Wilk (SW) tests must exceed 0.05 (Pallant, 2020). The results showed that for

three of the four independent variables, the KS and SW tests failed to prove normality, as the levels of significance were below 0.05, Table 7. Examining normality with skewness and kurtosis is usually more reliable than KS and SW in educational studies (Hatem et al., 2022). Table 7 shows that for all variables absolute skewness was below 0.5 and absolute kurtosis was below 3. Further, the absolute z scores for skewness and kurtosis fell below 2.58. Both these results of skewness and kurtosis demonstrate normality.

Table 7

Mathematical Tests of Normality

Variables	SPSS Normality Checks				Skewness		Kurtosis	
	Kolmogorov-Smirnova		Shapiro-Wilk		σ = 0.261		σ = 0.517	
	Statistic	Sig.	Statistic	Sig.	Statistic	Z_{skew}	Statistic	Z_{kurt}
General internal environment and Objective setting	0.137	0.000	0.967	0.029	-0.38826	-1.487	-0.3156	-0.611
General control activities, Information, and Communication	0.171	0.000	0.953	0.004	-0.38782	-1.485	-0.5746	-1.112
Holistic organization of risk management	0.092	0.071	0.978	0.159	0.08795	0.337	-0.5556	-1.075
Specific risk identification and Risk assessment activities	0.123	0.003	0.962	0.013	0.08795	0.337	-0.5556	-1.075
Business Success	0.000	0.000	0.000	0.000	0.353	1.352	-0.7	-1.355

Note. The table shows the mathematical tests for normality. Shaded cells indicate tests that fail to demonstrate normality.

Inferential Results

I employed standard multiple linear regression, α = .05 (two-tailed), to examine the efficacy of general internal environment and objective setting; general control activities, information, and communication; holistic organization of risk management;

and specific risk identification and risk assessment activities in predicting business success. The independent variables were general internal environment and objective setting; general control activities, information, and communication; holistic organization of risk management; and specific risk identification and risk assessment activities. The dependent variable was business success. The null hypothesis was that no statistically significant relationship existed between general internal environment and objective setting; general control activities, information, and communication; holistic organization of risk management; and specific risk identification and risk assessment activities in predicting business success. The alternative hypothesis was that a statistically significant relationship existed between general internal environment and objective setting; general control activities, information, and communication; holistic organization of risk management; and specific risk identification and risk assessment activities in predicting business success. I conducted a preliminary assessment of whether the assumptions of autocorrelation (independence of observation), outliers, multicollinearity, homoscedasticity, linearity, and normality were satisfied, and the analyses revealed no violation of the assumptions.

Table 8

Regression Analysis Model Summary

Model Summary [b]

					Change Statistics					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.819[a]	0.670	0.654	0.479806	0.670	40.633	4	80	0.000	2.040

a. Predictors: (Constant), P4_Index, P1_Index, P2_Index, P3_Index

b. Dependent Variable: Business Success

On the whole, the model significantly predicted the business success of MSME, $F(4,80) = 40.633$, $p = <.001$, $R^2 = .670$, Table 8. The R^2 value indicated that approximately two-thirds (or 67%) of variations in the business success of MSMEs were accounted for by the linear combination of the predictor variables (general internal environment and objective setting; general control activities, information, and communication; holistic organization of risk management; and specific risk identification and risk assessment activities). In the final model, Table 9, only one independent variable, holistic organization of risk management ($\beta = -.036$, $p > 0.05$), did not provide a statistically significant contribution to the model. The other three variables of general internal environment and objective setting ($\beta = .293$, $p = 0.004$); general control activities, information, and communication ($\beta = .339$, $p = 0.002$); and specific risk identification and risk assessment activities ($\beta = .392$, $p < 0.001$) provided a statistically significant contribution to variances in the business success dependent variable. The final predictive equation was:

$$Y = -0.392 + 0.321X_1 + 0.373X_2 – 0.032X_3 + 0.410X_4$$

Where:

- Y represents the index value of the dependent variable, MSME's business success.
- X_1 represents the index value of independent variable 1, general internal environment and objective setting

- X_2 represents the index value of independent variable 2, general control activities, information, and communication
- X_3 represents the index value of independent variable 3, holistic organization of risk management
- X_4 represents the index value of independent variable 4, specific risk identification and risk assessment activities

Table 9

Regression Analysis Summary for Predictor Variables

Variable	B	Std. Error	β	t	*p*	sr^2
General internal environment and Objective setting	0.321	0.109	0.293	2.944	0.004	3.6%
General control activities, Information, and Communication	0.373	0.119	0.339	3.148	0.002	4.1%
Holistic organization of risk management	-0.032	0.097	-0.036	-0.335	0.738	0.0%
Specific risk identification and Risk assessment activities	0.410	0.086	0.392	4.796	0.000	9.5%

General Internal Environment and Objective Setting

As indicated in Table 9, the independent variable "general internal environment and objective setting" had a positive impact on the business success of MSMEs. For each unit increase in the index of this independent variable, the index of the dependent variable, "business success" of MSMEs, increased by 0.321. Likewise, for each unit decrease in the index of this independent variable, the index of the dependent variable,

"business success" of MSMEs, decreased by 0.321. The squared semipartial correlation coefficient (sr^2) of an independent variable suggests the amount of the variance of the dependent variable which can be attributable uniquely to the said independent variable (Warner, 2021 pp. 103–104). The "general internal environment and objective setting" independent variable had a sr^2 value of 3.6%, indicating that 3.6% of the variance in "business success" can be uniquely attributed to this independent variable.

General Control Activities, Information, and Communication

As indicated in Table 9, the independent variable "general control activities, information, and communication" had a positive impact on the business success of MSMEs. For each unit increase in the index of this independent variable, the index of the dependent variable, "business success" of MSMEs, increased by 0.373. Likewise, for each unit decrease in the index of this independent variable, the index of the dependent variable, "business success" of MSMEs, decreased by 0.373. The squared semipartial correlation coefficient (sr^2) of an independent variable suggests the amount of the variance of the dependent variable, which can be attributable uniquely to the said independent variable (Warner, 2021 pp. 103-104). The "general control activities, information, and communication" independent variable had a sr^2 value of 4.1%, indicating that 4.1% of the variance in "business success" can be uniquely attributed to this independent variable.

Specific Risk Identification and Risk Assessment Activities

As indicated in Table 9, the independent variable "specific risk identification and risk assessment activities" had a positive impact on the business success of MSMEs. For

each unit increase in the index of this independent variable, the index of the dependent variable, “business success” of MSMEs, increased by 0.410. Likewise, for each unit decrease in the index of this independent variable, the index of the dependent variable, “business success” of MSMEs, decreased by 0.410. The squared semipartial correlation coefficient (sr^2) of an independent variable suggests the amount of the variance of the dependent variable which can be attributable uniquely to the said independent variable (Warner, 2021 pp. 103-104). The “specific risk identification and risk assessment activities” independent variable had a sr^2 value of 9.5%, indicating that 9.5% of the variance in “business success” can be uniquely attributed to this independent variable.

Analysis Summary

My purpose for this study was to examine the relationship of Lundqvist’s (2014) four pillars of ERM on the business success of MSMEs in Jamaica. I used a correlational quantitative design as it best fits the purpose of the study. I used multiple regression analysis to examine how “general internal environment and objective setting”, “general control activities, information, and communication”, “holistic organization of risk management”, and “specific risk identification and risk assessment activities” as independent variables relate to “business success” as the dependent variable. I examined adherence to the six fundamental assumptions of multiple regression and found no violations. From the model, I found that Lundqvist’s four pillars of ERM had a positively strong correlation with the business success of MSMEs in Jamaica, $F(4,80) = 40.633$, $p < .001$, $R^2 = .670$. Thus, Lundqvist’s four pillars of ERM are predictive of the business success of MSMEs in Jamaica. In favor of the alternative hypothesis, H_1: there was a

relationship between the Lundqvist's four pillars of ERM and business success, I therefore, rejected the null hypothesis for this study, H_0: there was no relationship between the four pillars of ERM and business success.

The outcome of this study supported other research. In their study, Saranza et al. (2024) showed that in the Philippines, business owners of MSMEs who had a strong commitment to ERM and the implementation of ERM within their businesses saw growth in the financial, operational, and strategic performance of their businesses. Similarly, Henschel and Lantzsch (2022) showed that in Germany, SMEs with greater appreciation and implementation of ERM had better financial outcomes. For this effect, ERM needed to be implemented in full. In my study, there was a strong positive correlation between implementing ERM and business success. However, the unique contribution of ERM by each variable on business success was significantly less than the contribution of all variables combined. The squared semipartial correlation (sr^2) of each independent variable, Table 8, was less than 10% suggesting that each pillar of ERM could not uniquely explain the variance in business success significantly. But, 67% of the variance in business success could be explained by the four pillars of ERM when all pillars acted together. ERM when embedded in the strategy of the business, the business optimizes outcomes and outperforms the market (Ricardianto et al., 2023). Alam et al. (2024) advocated the full adoption of ERM by MSME leaders to meet the complexities, success, and sustainability of their businesses.

From this study, adopting all pillars of Lundqvist's ERM produced higher values for business success. Though already intuitive from the outcome of the study, I decided to

test to see whether the correlation would be statistically the same if the data were to be split into two groups: “AllPosIVs” and “NotAllPosIVs”. From the model, I separated those data points that had positive index values for each of the four ERM pillars, the AllPosIVs group. The NotAllPosIVs group were those data points that had a negative index for at least one ERM pillar. A positive index value for an ERM pillar (an independent variable) meant that the corresponding pillar was adopted either majorly or in full in the MSME’s operations. A negative or zero index meant that the corresponding ERM pillar was either minorly or not implemented into the business operations. By the rule of positive correlation, where two groups have the same independent variables, statistically the same positive correlation coefficient, and the same dependent variable, the group with combined higher values for the independent variables would also have a higher value for the dependent variable (Privitera, 2023). The index of business success was the dependent variable in this study. Thus, the higher the index of business success, the greater the success of the MSME. Table 10 shows the correlation coefficient of the study’s data when split into the two groups. To statistically test whether the correlation of the AllPosIVs group was statistically the same as the NotAllPosIVs group, Di Plinio (2022) recommended the use of Fisher’s transformation of r scores into z scores and the test statistic, t. The correlation coefficients would statistically be the same at the 5% level of significance where t < 1.96 (Di Plinio, 2022).

$$t = \left| \frac{z_A - z_N}{\sqrt{\frac{1}{n_A - 3} + \frac{1}{n_N - 3}}} \right|$$

Where:

- n_A & z_A were, respectively, the number of data points in, and Fisher's transformation of the correlation coefficient from the AllPosIVs group
- n_N & z_N were, respectively, the number of data points in and Fisher's transformation of the correlation coefficient from the NotAllPosIVs group

Implied from Table 10 was $t = 0.293 < 1.96$, suggesting that the correlation coefficients of the AllPosIVs and the NotAllPosIVs groups were statistically the same. Consequently, MSMEs with full implementation of Lundqvist's (2014) four pillars of ERM would be expected to have more business successes than those with no or partial implementation.

Table 10

Subgroup Statistics and Fisher's Transformation

Group	R	Fisher's Transformation Z-value	n
Not All IVs Positive	0.719	0.906	49
All IVs Positive	0.752	0.978	36

Applications to Professional Practice

MSMEs in Jamaica have a business success problem; too many of them are unsuccessful. While MSMEs account for more than 19 of every 20 businesses and over four of every five employees in Jamaica, nine MSMEs discontinue their operations for every 10 new startup MSMEs, and of those nine discontinued MSME, six cite their lack of business success as the reason to discontinue (JMICAF, 2019, pp. viii & 14; STATIN, 2019b, p. 13). This study demonstrated that the business success rate among MSMEs in Jamaica could be improved were ERM implemented in MSMEs. The study showed that

the highest business success occurred when ERM was implemented in full. However, the implementation cost and the complexity of ERM could be too onerous on MSMEs and thus hinder ERM implementation in MSMEs (Bensaada & Taghezout, 2019).

With the documented positive benefits of ERM on MSMEs, ERM needed to be packaged for MSMEs with simplicity but without compromising the fundamentals and effectiveness of ERM (Bensaada & Taghezout, 2019). Marc et al. (2023) suggested that implementing ERM within the context of an entity's peculiarities and determined effort to interact and share information among all members of the MSMEs, would make the implementation of ERM more effective. The Lundqvist model is comprehensive but simple. It can be implemented in stages, and it does not carry the cost element as other methods such as COSO and ISO 31000. The Lundqvist model promotes communication of information and data among the members of the MSME, thus aiding the effectiveness of the Lundqvist ERM for MSMEs (Marc et al., 2023)

In this study, I examined the relationship of Lundqvist's (2014) four pillars of ERM on business success. The result was a strong positive correlation implying that as Lundqvist's pillars were implemented, MSMEs saw commensurate business success. With the flexibility and ease of implementing Lundqvist's four-pillar ERM model, leaders of MSMEs could adopt and implement the Lundqvist four-pillar ERM model. Additionally, interest groups such as banks, government, and umbrella groups could likewise adopt Lundqvist's model and encourage MSME leaders to implement the model. Leaders of MSMEs lack knowledge of ERM, this study showed that three of every four participants had some or no knowledge of ERM or the benefits of ERM to the business.

Business leaders need to be educated so they can appreciate and implement ERM for their benefit.

Implications for Social Change

This study is significant for social change. Friedman and Ladinsky (2021) defined social change as the changes in how people relate among themselves. The outcome of this study has the potential to change how people relate to each other. More than half of entrepreneurs in Jamaica are necessity entrepreneurs (Bowen, 2021). The majority of Jamaican entrepreneurs had no other mechanism to survive except to enter businesses out of a need to provide for themselves and their families (Laman, 2014). A successful MSME in Jamaica would result in families being able to provide for their basic needs: food, shelter, clothing, water, healthcare, schooling, and entertainment. With greater business success, MSME leaders would be able to satisfy other social needs: philanthropy, volunteerism, and mentorship, to suggest a few. Thus, as more MSMEs become successful with the implementation of ERM in businesses, more people will ascend the hierarchy of needs and change how they relate to other people.

Prentice and Paluck (2020) saw social change as the interventions that influence changes in people's behavior. This study demonstrated that as more MSMEs implement ERM, more MSMEs will be successful. The increased success rate of MSMEs would increase taxable income to the government and increase donations and support to other entities. As taxes increase, the government would have more money to spend on healthcare issues, education, caring for the elderly and vulnerable in society, and other

social issues that face the country. These, in turn, will change people's behavior, attitude, and way of thinking.

Recommendations for Action

In this study, my fundamental aim was to find a solution to MSMEs' problem of business success. The specific problem was that MSME leaders were unaware of the benefits of ERM to their business success. This study demonstrated a strong correlation between ERM and business success and in particular between Lundqvist's four pillars of ERM and business success. The Lundqvist ERM model is simple but comprehensive, does not compromise on any of the elements of ERM, is implementable in stages, and the implementation cost is much less than other models. This model would work well among businesses with limited resources or size. I have three recommendations for action consequence of the strong correlation between ERM and business success, and the characteristics of Lundqvist's (2014) ERM model. First, the government or umbrella groups which are sympathetic to the growth of MSMEs should develop an extensive plan to make leaders of MSME know and appreciate the linkage between implementing ERM and business success. This plan should include educating MSMEs' leaders and staff about Lundqvist's ERM model, its benefits, its ease of implementation, and the role each person plays in the execution of the plan.

The government, through its agency for MSMEs, JBDC, could prepare pamphlets and videos about the Lundqvist ERM model, how to implement and monitor the ERM model. Second, through the JBDC, the government could establish a secretariat to assist leaders of MSMEs in the implementation process of the Lundqvist's ERM model. This

secretariat would need to be versed in Lundqvist's ERM model and should be available to respond to the needs of the MSMEs as the model is implemented. The implementation plan should include implementation by stages and a system to monitor the ERM after implementation. The plan should emphasize tightening internal controls, setting achievable growth objectives, communicating among employees and customers, and identifying and managing MSMEs' risk exposures. Third, leaders of MSMEs should monitor the post-implementation of the ERM model. This will allow them to measure the increase in their businesses' success. Following this study, I plan to work with my chair to publish the findings from this study and to make presentations at conferences. With this approach, I hope to bring to the awareness of MSMEs' leaders how ERM relate to business success and how they could use Lunqvist's model to solve their ERM needs.

Recommendations for Further Research

Though the result of this study showed a clear and strong relationship between Lundqvist's ERM model and business success among MSMEs, the study needs some modifications before generalizing the conclusions. In this study I did not try to establish a causal relationship between ERM and business success. A path for further research should include testing whether there exists a causal relationship between ERM and business success. This study was limited to participants who were from the Kingston Metropolitan Region of Jamaica, to generalize the conclusions, future research would need to include more participants throughout Jamaica. Participants must include persons from the informal MSMEs and persons in sufficient and representative numbers from each parish. In this study, the instrument to measure business success was subjective as

participants were asked to give their opinion of their business performance relative to their competitors and satisfaction. It was most likely that the respondent in this study did not know the business performance of their competitor, and consequently, the respondent's responses were speculative or perceptive. Future studies could employ real business success measurements, such as changes in certain financial and market matrices derived from the MSMEs' bank statements, balance sheets, or profit and loss statements.

Reflections

My academic and professional background is in mathematics, finance, and risk management; therefore, I wanted a DBA course of study that would complement my academic and professional background. My first consideration was to derive a process to compute a value for goodwill as a component of mergers and acquisitions. However, as I dug deeply into that consideration, I began to realize that my aim as a DBA student was not to unearth new constructs, procedures, or formulae but rather to apply existing constructs, procedures, or formulae to solve a business problem. I reconsidered what I wanted to study and decided to pull from my work experience as an advisor to MSMEs.

My experience in advising MSMEs was that MSMEs were failing rapidly in Jamaica. I needed to understand the drivers of the MSMEs' high failure rate and what could be done to counter the high failure rate. To this end, I decided to do an expository mixed method study that uses a qualitative design to identify the factors for the high failure rate followed by a quantitative design to test those factors identified. After sharing my plan with my chair, he advised that a mixed method may be too time-consuming. He advised further that I consider a full quantitative study instead. That advice, though sound

and honest, put me back to the land of the unknowns. I had no survey instrument and neither did I know where to find one that was appropriate, valid, and reliable.

In my research for factors that resulted in MSME failure, I found an article titled: "Enhancing success of SMEs through risk enterprise management: Evidence from a developing country" by Jenya and Sandada (2017). That article resonated fulsomely with my experience and thereon I decided to change my focus of study to the current topic. MSMEs have the potential to be successful in Jamaica and especially because most MSMEs in Jamaica are formed out of necessity, I am happy I found an ERM model which could help MSMEs on their success journey. I am particularly pleased I found an ERM model that was flexible, allowed stagewise implementation, and was not as costly as other models. I am particularly happy that I would have contributed to the studies about MSMEs' success in Jamaica.

Conclusion

ERM is critical to MSMEs' success in Jamaica. With rapidly failing MSMEs in Jamaica, my purpose was to examine the relationship between ERM and MSMEs' business success. I decided on Lundqvist's (2014) model of ERM and examined the combined relationship of the four pillars of ERM to MSMEs' business success. The finding was clear, there was a strong correlation between implementing Lundqvist's four pillars of ERM and MSMEs' business success. My study did not prove causal effects but the strong alignment of ERM and business success suggested that implementing ERM in MSMEs could result in MSMEs being successful and thereby significantly reduce the failure rate of MSMEs.

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Appendix A: Questionnaire

MSME QUESTIONAIRE

Relationship Between ERM and Business Success

My name is Gary Francis. I am a doctoral student at Walden University, Minnesota, USA. As a requirement for fulfilling the Doctor of Business Administration degree program, I am researching the **Relationship between Enterprise Risk Management and the success of MSMEs in Jamaica**. Before completing this questionnaire, you would have accepted my terms of confidentiality and privacy protection from the consent form.

SECTION A: Organizational Characteristics

In which industry does your company operate?	Agriculture Manufacturing Mining Retail Transport Hospitality

	Realty Professional Service (Consulting/Representation) Service Other
For how long your company has been incorporated?	0 to 5 Years 6 to 10 Years 10 to 15 Years 16 to 20 Years More than 20 Years
How many employees does your company have?	0 to 5 Employees 6 to 20 Employees 21 to 50 Employees More than 50 Employees
What is your company's annual total sales/turnover?	Less than J$15M More than J$15M but less than J$75M More than J$75M but less than J$425M More than J$425M

Does company have a department that deals with risk management?	Yes No
Has your company implemented risk management in its operations?	No, not at all Yes, to a less extent Yes, to some extent Yes, to a greater extent Yes, we fully implement risk management

SECTION B: Respondent's Characteristics

Gender at birth	Male Female
Position in the company?	Owner Director Senior Manager Middle Manager Other
Age?	Less than 20 Years 20-29 Years 30-39 Years

	40-49 Years 50-59 Years 60 Years and above
Highest level of education?	Secondary Education Certificate Diploma/HND Undergraduate Masters Degree Doctorate Degree Other
Years employed in/working with the company?	Less than 5 Years 5-9 Years 10-14 Years 10-19 Years 20-24 Years 25 Years and above
Are you aware of Enterprise Risk Management?	No, not at all Yes, to a less extent Yes, to some extent Yes, to a greater extent

	Yes, we fully aware

SECTION C: General Internal Environment and Objective Setting

13. Please indicate the extent to which you agree with each of the following general internal environment risk management practices is implemented/practiced within your company.

KEY: SD - Strongly Disagree, D - Disagree, N - Neutral/indifferent, A - Agree, SA - Strongly Agree

	D				**A**
Our company has a code of conduct/ethics and follows it.					
Our company regularly trains all employees on ethical values					
Our company has formally defined policies for hiring and firing executives.					
Responsibilities are formally defined for executive management.					
Responsibilities are formally defined for audit committee.					
Continuing education programs are available to employees of all levels.					
Performance targets are set for individuals of all levels.					
The role, structure and responsibility of the board is well					

documented.					
The organization has a formal strategy to pursue its mission.					
Performance measures are well defined in the strategic plan					
Systems to ensure that policies and procedures in place to manage the achievement of our firm's objectives/plan are functioning and effective.					
There is consideration of the likelihood of strategic risk events affecting our company's ability to achieve its objectives.					

SECTION D: General Control Activities and Information and Communication

14. Please indicate the extent to which you agree each of the following information and communication risk management practices is implemented by your company.

	D				**A**
Our organization has authorization procedures in place to ensure that appropriate individuals review of the use of policies and procedures.					
There are independent verification procedures to ensure the use policies and procedures.					

There is documentation and records to verify the use of policies and procedures.					
There are defined channels of communication with customers, vendors and other external parties.					
There are defined channels of communication to report suspected breaches of laws, regulations and other improprieties.					
Our company's internal environment, processes and control activities are monitored.					

SECTION E: Holistic Organization of Risk Management

15. Please indicate the extent to which you agree each of the following elements of the holistic organization of risk management are being implemented by your company.

KEY: SD - Strongly Disagree, D - Disagree, N - Neutral/indifferent, A - Agree, SA - Strongly Agree

	D				**A**
Our organization has a formal written risk management policy.					
The organization has a formal statement of risk appetite.					
There is senior manager with the responsibility to oversee risk and risk management.					
There is a centralized department or staff function dedicated to risk					

management.					
Our company has an internal risk assessment or internal risk audit function					
The impact risks may have on key performance indicators is determined.					
Formal risk assessment reports are produced at least annually					
Centralized technology is used to obtain risk related information.					
Risk response plan for all the significant events the firm has identified is available.					
There is an alternative risk response for each significant event.					
The importance of risk is communicated to all internal and external stakeholders.					
Assessment of the firm's risk management function is done by an external party.					
The firm verifies the completeness, accuracy and validity of risk-related information.					
Reliance is on key risk indicators or emerging risks (not historical performance).					
There are frequent and structured updates of risk-related information.					
There are allocated risk owners who have the responsibility for managing risk					

SECTION F: Risk Identification and Risk Assessment Activities

16. Please indicate the extent to which you agree each of the following risk identification and assessment activities that will affect the firm's ability to achieve its objectives are being implemented by your company.

	D				A
We consider financial events.					
We consider strategic risk events.					
We consider compliance events.					
We consider technology events					
We consider economic events.					
We consider reputation events.					

SECTION G: Business Performance In Broad Categories

17. Over the past five years, how would you classify your:

KEY: RD – Rapidly Deceasing, MD – Moderately Decreasing, C – Constant, MI – Moderately Increasing, RI – Rapidly Increasing

Category: Business Growth					

	D				**A**
Market share growth					
Cash flow growth					
Sales growth					

18. Over the past five years, what is your average in each of the following item:

KEY: Jamaican Dollars (A) less than 25 million, 25-50 million, (B) 50-100 million, (C) 100-250 million, (D) 250-500 million, (E) 500 million –1 billion, and (F) above 1 billion

Category: Business Volume						
Sales Amount						
Total earnings						
Business Net Worth						

SECTION H: Business Performance: Satisfaction With Performance

19. KEY: VD - Very Dissatisfied, D – Dissatisfied, NSD - Neither Satisfied nor Dissatisfied, S – Satisfied, VS - Very Satisfied.

	D		**SD**		**S**
Are you satisfied with the sales growth					
Are you satisfied with the Sales return					
Are you satisfied with the cash flow					
Are you satisfied with the return on investment					
Are you satisfied with the net profits					
Are you satisfied with the return on assets					
Are you satisfied with the market share growth					
Are you satisfied with the growth in the net worth					

SECTION I: Business Performance: Relative to Competitors

20. How do you compare with your closest competitor in:

KEY: VL - Very Lower, L – Lower, AS – About the Same, H – Higher, VH - Very Higher

	L		**S**		**H**
Sales growth					
Sales return					
Cash flow					
Return on investment					
Net profits					
Return on assets					
Market share growth					
Growth in the net worth					