

Developing an Analytical Model for Risk Mitigation and Growth in Manufacturing SMEs

¹Nothando Tshuma, ¹Jason Mwanza, ¹Emmanuel Sibanda & ²Tsepeso Setoboli

¹University of Zambia

²National University of Science and Technology

DOI: <https://doi.org/10.51244/IJRSI.2024.11110046>

Received: 25 October 2024; Received: 04 November 2024; Accepted: 08 November 2024; Published: 13 December 2024

ABSTRACT

The primary objective of this study was to develop an Analytical Model for Risk Mitigation and Growth in Manufacturing SMEs. Based on the study's conceptual framework, data were collected via a questionnaire. The analysis was conducted using the random utility theory. The study finds cash flows, market penetration, investment, and diversification collectively explain the durable mitigation strategies implemented by manufacturing SMEs to enhance business growth. However, the probit model revealed that diversification was statistically insignificant at the 5% level of significance, suggesting that diversification is less important for bolstering the growth of manufacturing SMEs for manufacturing sector in Bulawayo. The study concludes that SMEs implementing durable mitigation strategies, which combine both informal and formal risk management practices, are more likely to experience business growth compared to those that follow either a formal risk management guideline or strictly an informal risk management practice. SMEs should prioritize improving cash flow management and making strategic investments to enhance growth. Given the statistical insignificance of diversification, SMEs should carefully assess the potential benefits and risks before pursuing diversification. Efforts should be made to increase market penetration through targeted marketing and expanding customer bases. Combining both informal and formal risk management practices can foster growth. SMEs should continuously monitor their risk mitigation strategies and adapt them based on changing market conditions and business environments.

Key words: Risk mitigation, Manufacturing SMEs, Analytical model

INTRODUCTION

According to Mwanza and Tshuma (2023) the combination of formal and informal risk management would result in effective risk mitigation. In a dynamic competitive environment, the development of an analytical model for risk mitigation and growth in manufacturing small and medium-sized enterprises (SMEs) is crucial in today's volatile business environment as SMEs are vulnerable to risks (Sotamaa et al, 2024). The analytical model will result in enhanced risk awareness and enhanced decision making by SMEs as they start to recognise the benefits of combining informal and formal risk management.

Small to Medium Enterprise (SMEs) Definition

The definition of Small and Medium Enterprises (SMEs) varies significantly across different industrial sectors, countries, and economies at various stages of development (Zivanai et al., 2014). Typically, definitions focus on criteria such as the size of the entity, number of employees, capital base, annual turnover, and overall financial status (Sifumba et al., 2017).

In Zimbabwe, the Ministry of SMEs (2002) defines small enterprises as registered entities employing between 30 and 100 individuals. The Small-Medium Enterprise Association of Zimbabwe (2012) further classifies these

businesses into small and medium categories based on financial criteria. Small firms are those with an annual turnover below US\$240,000 or assets under US\$100,000, whereas medium enterprises have turnover and assets exceeding the small firm thresholds but less than US\$1 million.

According to the Zimbabwe Small and Medium Enterprises Act, an MSME (Micro, Small, and Medium Enterprise) is a business entity—whether corporate or unincorporated—that meets specific criteria. These criteria include being managed by one person or jointly by two or more individuals, primarily engaging in a specified sector or subsector of the economy, and qualifying based on criteria related to maximum employees, total annual turnover, or gross value of assets (excluding immovable property). The maximum number of employees typically does not exceed 250. The SME Association of Zimbabwe (2002) defines small enterprises as having a turnover less than \$240,000 or assets less than \$100,000. Medium enterprises fall within the turnover

In Zimbabwe, the definition of Small and Medium Enterprises (SMEs) exhibits slight variations based on different contexts and authorities. Specifically, the Zimbabwe Revenue Authority (ZIMRA) (2018) characterizes an SME as an entity employing 5-40 people, with annual turnover and assets ranging from as low as USD\$50,000 to USD\$2 million. Interestingly, the ZIMRA definition is considered more realistic, especially given the volatile economic environment that led to the closure of many SMEs, worker retrenchments, and operational downsizing. For the purpose of this research, we adopt the ZIMRA definition as a practical framework for understanding SMEs in Zimbabwe.

Theoretical framework

Integrated Perspective or the comprehensive risk management approach

The most significant advancement in risk management theory is the integrated perspective, also known as the comprehensive risk management approach (Bernstein, 1997; Vaughan, 1997; Spikin, 2013). This approach requires firms to proactively manage risk by continuously monitoring the risks associated with their strategic objectives (Arena, Bharathy, McShane, Chen, Choi, & Khan, 2019). According to Spikin (2013), this process involves the ongoing measurement of the severity and evolution of risks within the firm to maintain an overall risk profile that aligns with strategic goals. Consequently, risk management becomes an essential part of the organization, recognizing that uncertainty can lead to either losses or profits. Every strategic and operational decision is supported by risk management to minimize failure, with each alternative and its potential impact on future performance carefully evaluated. This perspective gained importance following the 2007 financial crisis, which highlighted the need for a more holistic approach to managing risk.

The comprehensive approach to risk management, which began in the 1990s, was formalized by the Committee of Sponsoring Organizations (COSO) in 2004. COSO provided guidelines for implementing a risk management program, directing managers at all levels in decision-making and planning. Risk analysis and control, along with the firm's risk appetite, are particularly crucial (Spikin, 2013). This integrated perspective considers all types of risks a firm might face, adopting a proactive rather than a defensive approach to enhance organizational performance. It aligns strategy, people, technology, and knowledge to assess and manage the threats and opportunities companies encounter (Gotzen-Mitka, 2017). A dedicated risk management function oversees the company's risk management policy, coordinating with all operational departments responsible for implementing the risk strategy and monitoring the entire process to ensure smooth operation (Choi & Doowon, 2012).

The integrated perspective encompasses potential risks from the planning stage through to operations across all sections of the organization (Arena et al., 2019). This approach is lauded for being proactive, focused, continuous, and characterized by a logical process. Essentially, from the inception of new business ventures to daily strategic and operational decisions, risks must be comprehensively managed to address all potential issues within the firm (Gorzen-Mitka, 2017; Kaplan & Mikes, 2013). Authors argue that the integrated perspective theory simplifies establishing the effectiveness of the relationship between risk management and strategy (Haviernikova et al., 2019). Furthermore, effective risk management is achieved through universal

horizontal and vertical communication throughout the organization.

The integrated perspective follows a coherent, structured process. Initially, a precise objective for the risk management program must be established, clearly defining what the firm aims to achieve (Vaughan, 1997; Kraus & Lerner, 2012; Kim & Vornotas, 2014; Hopkins, 2010). These objectives should be succinctly documented in the company's risk management policy. Subsequently, the firm should identify potential threats using internal archives, checklists, insurance policy lists, questionnaires, flow charts, interviews, and financial statement analysis (Cienfugos, 2012). The next step involves evaluating the identified risks by measuring their probability and impact, which allows for the classification of risks by significance (Gorzen-Mitka, 2017). Following this, the firm must consider approaches to manage each risk, which typically fall into four categories: avoidance or prevention, reduction or mitigation, retention, and transfer or allocation (Cienfugos, 2012).

Silo Perspective or the Traditional risk management approach

This approach assigns risk management to units directly threatened by the risk (Bromiley, 2015; Drennan & McConnell, 2007). Examples include departments responsible for asset management, data security, welfare, human resources, accounts, training, and community services. There is minimal involvement with other departments regarding information and procedures. This method addresses only pure risks, focusing solely on their analysis and management. Consequently, the silo approach is described in literature as disjointed, volatile, cost-focused, threat-centric, and sporadic (Spikin, 2013).

The Silo visive the Integrated Perspective to risk management fundamental facets of analysis

In the realm of risk management, literature has analyzed dimensions comparing the two perspectives of risk management theory, including how each approach handles the relationship between strategy and risk management (Cienfugos et al., 2012). This encompasses the focus of risk management, risk assessment, the approach to risk management, risk reporting, risk communication, organization, and liability. The silo approach has an inadequate impact on tactical planning compared to its counterpart, which significantly funds risk management in strategic planning (Bertinetti et al., 2013).

Gorzen-Mitka (2017) highlights that the silo approach to risk management focuses more on threats and pressures, making it defensive. In contrast, the integrated perspective considers both threats and opportunities, operating on the belief that every threat can also be an opportunity for profit. This suggests that the silo approach is narrower and more dedicated, while the integrated perspective is broader and emphasizes seamless reporting. Bertinetti et al. (2013) note that the silo approach concentrates on functions like communication and risk administration, typically confined to specific departments. The financial crisis exposed the weaknesses of the silo approach, as traditional tools like insurance and hedging failed to address risks managed in separate categories. The integrated perspective, however, involves both vertical and horizontal communication across functions, ensuring a more consolidated process. Regarding risk accountability, the silo approach often lacks designated responsibility for some risks, whereas the comprehensive approach clearly assigns responsibility, enabling an incentive system for effective risk management.

The integrated perspective has been predominantly applied in large private corporations and the public sector (Cienfugos, 2012; Drennan & McConnell, 2007). There is limited application and documentation of this approach in small businesses.

The New Perspectives Theory

Crovini and Chiara (2017) highlighted that SMEs typically do not adopt a formal risk management system. They demonstrated that risk management is still in its early stages of development. Despite this, various studies argue that SMEs handle risks immaturely, citing research by Herbane (2010), Power (2007), and Block et al. (2015). These studies suggest that SMEs avoid formal risk management due to a lack of knowledge, fear of change, and perceived additional costs. Furthermore, the absence of a well-established risk approach and activities in SMEs often gives the impression that they are not managing risks at all. Crovini and Chiara encouraged SMEs to fully adopt comprehensive risk management. They emphasize that risk management

actions are closely linked to deliberate decision-making.

Thus, the new perspective for SME managers and owners involves reevaluating and appreciating how these small entities make decisions. This is because early forms of unconscious threat analysis are embedded within these decisions. They believe that integrating risk management in SMEs can be enhanced by improving existing decision-making processes.

Conceptual framework

The importance and indispensability of conceptual frameworks in research are beyond dispute (Swaen & George, 2022). These frameworks are not mere luxuries; they play a crucial role in structuring and operationalizing research designs (Ngulube, 2018, cited in Masuku, 2019). Miles and Huberman (1994) describe conceptual frameworks as visual or narrative representations that elucidate the structure of a study, outlining the key factors, constructs, or variables to be investigated and the presumed relationships among them. Although conceptual frameworks lack empirical grounding, researchers can use them to explain how factors interact and influence each other during the investigative process.

The manufacturing sector, particularly Small and Medium Enterprises (SMEs), faces multifaceted risks that can significantly impact their operations, financial stability, and overall sustainability. These risks include supply chain disruptions, market volatility, technological obsolescence, regulatory changes, and financial uncertainties. Given the critical role of SMEs in economic growth and employment generation, addressing these risks becomes imperative. Despite the importance of risk management, there is a noticeable gap in research concerning the integration of formal risk management with the informal practices used by SMEs to develop effective, context-specific strategies. Existing literature often focuses on large corporations, overlooking the unique challenges faced by SMEs. Consequently, SMEs lack comprehensive guidance on risk management practices that align with their limited resources, organizational structures, and operational intricacies.

Ngulube (2018) highlights the importance of justifying the use of a conceptual framework in a study. In this study, the conceptual framework provided a theoretical structure that offered a systematic way of organizing and understanding complex ideas.

Components of the Conceptual Framework in this study

- 1) **Informal Risk Management Practices:** The framework explored the informal risk management practices commonly employed by SMEs. These may include tacit knowledge sharing, experience, adaptive decision-making, and reliance on personal networks.
- 2) **Formal Risk Management Practices:** The framework explored formal risk management practices, such as compliance with regulations, insurance policies, and structured risk assessment methodologies.
- 3) **Integration and Synergy:** We conceptualise that integration of both approaches enhance overall risk resilience.
- 4) **Other Factors Affecting Growth or Survival of SMEs:** Our framework explored how other factors such as cash flows, diversification, investment, market and product growth affect survival or growth of SMEs.

This study's conceptual framework bridges the gap between theoretical knowledge and practical application. By developing an integrated risk management approach for manufacturing SMEs, we contribute to their long-term sustainability and economic well-being. According to Ngulube (2018) a conceptual framework allows one to chart notions that exist in literature, various theories and sources as well as experience. Thus, it aids one to deliver a pictorial display of how concepts in a study communicate to one another within the theoretical context (Grant and Osanloo, 2016). Drawing from these explanations the diagram below represents the conceptual framework of this study.

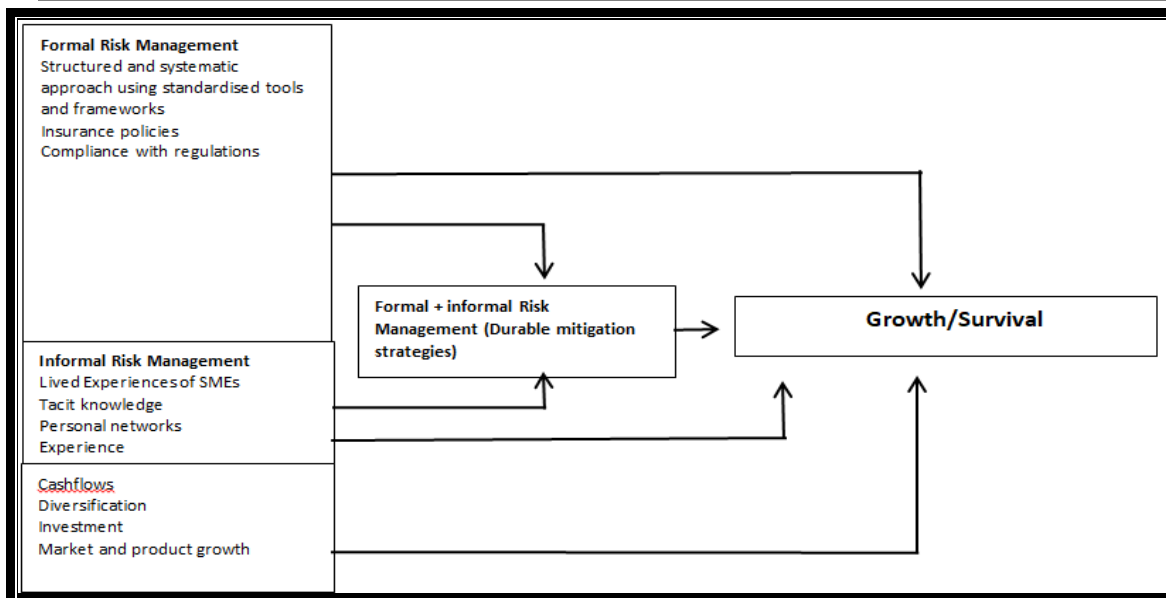


Figure 3.1 Conceptual framework developed by author

Explanation and justification of conceptual framework

Miles and Hubberman (1994) posit that a conceptual framework can be derived from common sense, presented either graphically or narratively. In this study, we present both graphical and narrative representations of the factors deemed crucial for understanding risk management in Small and Medium-sized Enterprises (SMEs). Drawing from existing literature, various theories, and practical experience, we construct the conceptual framework as previously mentioned.

Within formal risk management practices, there are structured and systematic approaches aimed at mitigating risks (Lima, Crema &Verbano, 2020). Simultaneously, SMEs (Small and Medium Enterprises) grapple with risk factors that pose daily challenges. Neglecting these risks can jeopardize an SME’s survival, due to mismanaged cash flows, lack of diversification, missed investment opportunities, and hindered product and market growth.

Conversely, effective risk management becomes the lifeline for SMEs. However, a significant portion of risk management relies on informal practices within the SME. These informal strategies draw from the owner’s lived experiences, personal knowledge, adaptive decision-making, and networks. The researchers propose that a symbiotic relationship between informal and formal risk management could yield durable mitigation approaches. These combined strategies contribute to SMES’ growth and survival by bolstering the ability to manage cash flows, diversify operations, invest wisely, and foster both market and product expansion.

In this context, SME owners are better positioned to manage risks by adopting an integrated approach that combines both formal and informal risk management. Such a holistic strategy is more likely to enhance survival prospects compared to relying solely on either formal or informal methods. Ultimately, survival within this framework refers to an SME’s capacity to sustain its operations well into the foreseeable future.

It’s essential to acknowledge that the conceptual framework developed in this study is not exhaustive; rather, it remains adaptable. The framework transcends pure causality, embracing a commonsensical and pragmatic approach that align with the inherent thought process underlying the problem under investigation. It was informed by literature and understanding of the risk management phenomenon in manufacturing SMEs.

Hypothesis

The study posited that when SMEs chose to combine their informal risk management practices with formal risk management, it enhanced their risk management, resulting in growth or survival. Basically, the combination of the formal and informal resulted in durable mitigation strategies that led to survival/growth.

In this regard, the null and the alternative hypothesis are that:

H_0 : There is no relationship between a durable risk mitigation strategy and business growth or survival

H_1 : There is a positive relationship between a durable risk mitigation strategy and business growth or survival.

Analytical Framework/Model

The general objective of this study was to develop an Analytical Model for Risk Mitigation and Growth in Manufacturing SMEs. Thus, a model was developed based on the conceptual framework. To do so, it is first assumed that owners or managers or decision makers choose on alternatives, by considering the expected comparative advantages from participating in the activity which will be compared with respect to the other alternatives. This can be analysed using the random utility theory described as follows.

The Random Utility Theory

Daniel McFadden's Random Utility Theory (1974) proposes that individuals generally make choices based on their preferences. When faced with uncertainty or indecision, random factors come into play. Specifically, an individual selects an alternative that maximizes their overall utility. Now, consider an SME (Small and Medium Enterprise) owner or manager who must decide on a growth strategy. They have two options:

1. Combined Strategy: Implement a new approach that integrates both formal and informal risk management practices.
2. Single-Approach Strategy: Choose either a formal risk management practice or an informal risk management approach exclusively.

The dependent variable in this scenario is defined as follows:

$$Y_i = \begin{cases} 1 & \text{if combination} \\ 0 & \text{if either one or the other} \end{cases} \dots\dots\dots (i)$$

for person i . We can also define X_i as the factor influencing growth of the business. We will need to also define e_i as a random, independent error. The linear model could be used to fit this model. In that case we would have:

$$Y_i = \beta_0 + \beta_1 X_i + e_i \dots\dots\dots (ii)$$

$$Y_i \equiv E(y_i) = \beta_0 + \beta_1 X_i \dots\dots\dots (iii)$$

Now we are going to define the probability that individual i chooses to be satisfied (combination) and the complement of this probability (either one or the other). For the former, we will use the notation p_{i1} and for the later p_{i2} . Given this notation, we can say that the predicted choice probabilities are:

$$p_{i1} = \Pr[y_i = 1] = \Pr [\textit{combination}] \text{ and } \dots\dots\dots (iv)$$

$$p_{i2} = \Pr[y_i = 0] = \Pr [\textit{either one or the other}] \dots\dots\dots (v)$$

It should be clear that $p_{i2} = 1 - p_{i1}$. It must also be the case, given the definition of what is meant by expectation that:

$$E(y_i) = (1)p_{i1} + (0)p_{i2} = p_{i1} \dots\dots\dots (vi)$$

Combining this result with Equation (vi), it was concluded that

$$P_{i1} = \beta_0 + \beta_1 X_i \dots\dots\dots (vii)$$

A Probit model can be interpreted as this regression, where errors satisfy classical assumptions.

The linear Probit model will be presented as follows:

$$P(Y_i = 1/0) = \beta_0 + \beta_i X_i + \mu \quad (\text{viii})$$

Where P = the probability of an individual implementing a new strategy (combination), β_i = the vector of parameters to be estimated, X_i = the vector of independent explanatory variables estimated to influence business growth and μ = the error term. Probit model states the functional correlation between the probability of a business growth enhancement and the list of numerous explanatory variables assumed to affect business growth. The deduced efficient association among the binary dependent variable and a list of regressors for the empirical analysis of the current study can be indicated as follows, using the basic Probit model description:

$$\text{Pr}(\text{BG} = 1/0) = \beta_0 + \beta_1 \text{CF} + \beta_2 \text{MP} + \beta_3 \text{INV} + \beta_4 \text{DV} + \mu_i \quad (1)$$

where: Pr - is the probability that an individual has been affected or not.

β_i = are the coefficients to be estimated

BG = Business Growth

CF = Cash flow

MP = Market Penetration

INV = Investment

DV = Diversification

μ_i = The error term.

Maximum likelihood estimation (MLE) methods are used to estimate Probit model. The Probit regression can compute estimates of the coefficients (β) and their corresponding standard errors that are asymptotically efficient. The estimated coefficients from Probit regression give the signs of the partial effects of each independent variable on the dependent variable that is response probability (Wooldridge, 2002). The Probit model also follows a normal distribution function. The MLE procedure yields unbiased, asymptotically efficient, and normally distributed regression coefficients.

Justification of Variables

Investment

Investment decisions in manufacturing SMEs are crucial for growth and sustainability. (Chika & Chike, 2021) emphasize that strategic investments in technology, infrastructure, and human capital can significantly mitigate operational risks. For example, investing in advanced manufacturing technologies can enhance production efficiency and reduce downtime risks (Small, 2006). Additionally, investments in employee training and development can address skill shortages and boost overall productivity (Chika & Chike, 2021).

Cash Flow Management

Effective cash flow management is crucial for the financial stability of manufacturing SMEs. According to Nasimuyu (2024) maintaining a healthy cash flow enables SMEs to navigate economic uncertainties and invest in growth opportunities. Studies have demonstrated that SMEs with robust cash flow management practices are better equipped to withstand market fluctuations and avoid liquidity crises (Le, 2019). Techniques such as cash flow forecasting and maintaining adequate cash reserves are commonly recommended to mitigate financial risks (Hung & Hager, 2019). Additionally, Daisy, Langat, and Cheruiyot (2023) found that tea

factories with cash flow strategies were more viable.

Diversification

Diversification is a crucial strategy for risk reduction in the manufacturing sector. By expanding their product lines or entering new markets, SMEs can spread their risk and reduce reliance on a single revenue stream (Le, 2019). Literature indicates that diversification can lead to more stable earnings and protect against market volatility (Hung & Hager, 2019). However, it is also noted that diversification should be approached cautiously, as over-diversification can dilute focus and resources

Market Penetration and Competitive Advantage

Market penetration strategies, such as enhancing product quality, competitive pricing, and aggressive marketing, are crucial for SMEs aiming to increase their market share. These strategies not only drive growth but also help mitigate risks associated with market competition (Jorge et al.). SMEs that effectively penetrate their markets can achieve economies of scale, which in turn reduces per-unit costs and enhances profitability

METHODOLOGY

A descriptive survey design was used. Data was collected through a survey questionnaire distributed to 236 Manufacturing SMEs in Bulawayo. Stratified random sampling was used to pick manufacturing SMEs from food processing, leather manufacturing, clothes, metalworking and woodworking industry as shown in the table 1 below.

Table 1: Sample size for different strata

Type of SME (Strata)	Total Population	% representation in Total population	Sample Population
Woodwork	78	24%	57
Clothing	65	20%	47
Leather	110	34%	80
Metal	50	15.33%	36
Food processing	22	6.67%	16
TOTAL	325	100%	236

FINDINGS AND DISCUSSION

Table 2: Profile of SME Growth

Variables	SA		A		SWA		DA		SDA	
	<i>n</i>	<i>f</i>	<i>n</i>	<i>F</i>	<i>n</i>	<i>f</i>	<i>n</i>	<i>f</i>	<i>n</i>	<i>f</i>
Cash flows affect the growth of our business and forces us to adopt durable mitigation strategy*	58	32.6	50	20.1	34	19.1	26	14.6	10	5.6
Market penetration challenges have discouraged growth of our business										

and requires that we constantly adopt durable mitigation strategy	92	51.7	46	25.8	22	12.4	16	9.0	2	1.1
For the business to grow there has been consistent investments on our part	68	38.2	42	23.6	22	12.4	32	18.0	14	7.9
Diversification has increased the chances of business growth and requires implementation of durable mitigation strategy	32	18.0	48	27.0	50	28.1	28	15.7	20	11.2

The study finds that diversification does not result in business growth for SMEs in Bulawayo as shown in Table 1 above. If we consider “somewhat agree” as the median, representing respondents who were uncertain, we observe that the total agreements are higher for three elements, except for one. Specifically, SMEs in Bulawayo do not show growth in diversification. This indicates that diversification has not enhanced the chances of business growth at all.

To deepen the analysis above a probit model was run as shown in table 2 below.

Estimated Probit Results

Table 3 presents the estimated regression Probit model

Table 3: Estimated Probit Model Results

Variable	Coefficient	Robust Std Error	Prob Value
Cashflow	0.0400	0.0200	0.0120**
Market Penetration	1.3254	0.6479	0.0410**
Investment	2.7376	0.5857	0.0000***
Diversification	0.9961	0.5605	0.0760*
Constant	-4.4773	1.3308	0.0010***
Wald Chi ² (4)	43.03		
Prob	< 0.01		
Pseudo R ²	0.6853		

*** ** (*) presents statistical significance at 1%, 5% and 10% respectively. Source: Author (2021)

Results in Table 2 highlight that cash flows, market penetration and investment were statistically significant at 5% whilst diversification was statistically significant at 10%. The Pseudo R² was 0.685 which implies that 68.5% of the variation in the durable mitigation strategy by manufacturing SMEs is explained by cash flows, market penetration, investment, and diversification and the model is correctly specified as signified by statistical significance of the model. With respect to the Wald statistic, it confirms that cash flows, investment, market penetration and diversification jointly explain durable mitigation strategies implemented by manufacturing SMEs to enhance growth of the business. Lastly, the coefficients from the Probit model cannot be used for interpretation of the results since they are parameters of the latent model hence the need for

estimation of marginal effects coefficients to facilitate interpretation of the results. Therefore, marginal effects results are tabulated in Table 3

Table 4: Marginal Effects Results

Variable	Coefficient	Standard Error	Probability Value
Cashflow	0.0200	0.0100	0.0130**
Market Penetration	0.4839	0.1950	0.0130**
Investment	0.8221	0.0961	0.0000***
Diversification	0.3943	0.2247	0.0790*

*** ** (*) presents statistical significance at 1%, 5% and 10% respectively. Source: Author

Cash Flow

The coefficient for cash flow is positive (0.02) and statistically significant at the 5% level, suggesting that an increase in cash flow positively impacts the likelihood of SME growth. Specifically, a unit increase in cash flow results in a 0.02 increase in the probability of enhancing SME growth. This finding aligns with the literature that emphasizes the importance of liquidity and financial stability in supporting business operations and growth (Beck, 2007). Adequate cash flow enables SMEs to invest in new opportunities, manage operational costs, and implement effective risk mitigation strategies, thereby fostering growth.

Market Penetration

Market penetration shows a positive coefficient of 0.4839, which is statistically significant at the 5% level. This indicates that a 1% increase in market penetration leads to a 48.39% increase in business growth. This substantial effect underscores the critical role of expanding market reach and customer base in driving SME growth. The ability to penetrate new markets allows SMEs to diversify their revenue streams and reduce dependency on a single market, enhancing their resilience and growth potential (Kotler & Keller, 2016).

Investment

Investment has a positive coefficient of 0.8221, indicating that a unit increase in investment results in an 82.21% increase in the probability of business growth. This relationship is statistically significant at the 1% level, highlighting the strong impact of investment on SME growth. Investments in technology, infrastructure, and human capital are essential for improving productivity, innovation, and competitive advantage (Barney, 1991). This finding supports the notion that strategic investments are crucial for sustaining long-term growth and competitiveness in the manufacturing sector.

Diversification

Diversification, however, was found to be statistically insignificant at the 5% level, suggesting that it does not significantly influence the growth of manufacturing SMEs in Zimbabwe. This result may indicate that diversification strategies are not as effective in the current economic context or that SMEs may lack the resources and capabilities to successfully diversify their operations (Rumelt, 1982). It also suggests that focusing on core competencies and strengthening existing market positions might be more beneficial for SME growth in this sector. Findings are similar to those of Le (2019) who found that diversification strategy was not beneficial to corporate growth.

CONCLUSIONS AND RECOMMENDATIONS

This study concludes that SMEs that implement durable mitigation strategies, that is, combined strategy of

both informal and formal risk management are likely to experience growth in their businesses relative to those that follow either a formal risk management guideline or implement strictly an informal risk management practice. This is in line with the study by Mwanza and Tshuma (2023) where they indicated that a nexus between formal and informal risk management would result in better growth of SMEs. This emphasizes the prominence of adopting comprehensive and integrated risk management approaches to enhance the growth prospects of manufacturing SMEs. SMEs should prioritize improving cash flow management and making strategic investments to enhance growth. Given the statistical insignificance of diversification, SMEs should carefully assess the potential benefits and risks before pursuing diversification. Efforts should be made to increase market penetration through targeted marketing and expanding customer bases. Combining both informal and formal risk management practices can foster growth. SMEs should continuously monitor their risk mitigation strategies and adapt them based on changing market conditions and business environments.

REFERENCES

1. Arena, M., Bharathy, G., McShane, M., Chen, J., Choi, Y., & Khan, S. (2019). *Integrated Risk Management, a Conduit to Building Resilient and Sustainable Organizations*. Springer.
2. Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120.
3. Beck, T. (2007). Financing constraints of SMEs in developing countries: Evidence, determinants and solutions. In KDI 36th Anniversary International Conference (pp. 26-27).
4. Bernstein, P. L. (1997). *Against the gods: The remarkable story of risk [Przeciw bogom. Niezwykłe dzieje ryzyka]*. Warszawa: WIG Press.
5. Bertinetti, G. S., Cavezzali, E., & Gardenal, G. (2013). The effect of the enterprise risk management implementation on the firm value of European companies. Working Papers 10, Venice School of Management - Department of Management, Università Ca' Foscari Venezia.
6. Block, J., Sandner, P., & Spiegel, F. (2015). How do risk attitudes differ within the group of entrepreneurs? The role of motivation and procedural utility. *Journal of Small Business Management*, 53(1), 183–206.
7. Bromiley, P., McShane, M., Nair, A., & Rustambekov, E. (2015). Enterprise risk management: Review, critique, and research directions. *Long Range Planning*, 48(4), 265-276.
8. Chika, A. C. and Chike, N. K. (2021). Impact of Human Capital Development on Small and Medium Scale Enterprise in Some Selected Firms in Anambra State. *Asian Journal of Economics, Business and Accounting*, 21(18), pp. 57–64. doi: 10.9734/ajeba/2021/v21i1830499.
9. Choi, B. B., Lee, D., & Park, Y. (2013). Corporate Social Responsibility, Corporate Governance and Earnings Quality: Evidence from Korea. *Corporate Governance an International Review*, 21(5), 447–467.
10. Cienfuegos I. (2012). Decision Theory and Risk Management in Public Organizations: A Literature Review. *Revista de Gestión Pública*, 1(1), pp.101-126.
11. Committee of Sponsoring Organizations of the Treadway Commission (COSO). (2004). *Enterprise risk management—Integrated framework* (2nd ed.). Retrieved from <http://www.coso.org/erm-integratedframework.htm>
12. Crovini, J., & Chiara, A. (2017). New perspectives in managing risks in SMEs. In *Proceedings of the 10th Annual Conference of the EuroMed Academy of Business* (pp. 496-500). Rome, Italy.
13. Daisy, C., Langat, P. and Cheruiyot, P. (2023). The Relationship between Cash Management and the Financial Performance of Unilever Tea Limited, Kericho County, Kenya. *East African Journal of Business and Economics*, 6(2), pp26
14. Drennan, L.T., Stark, A., and McConnell, A. (2014). *Risk and Crisis Management in the Public Sector*, (2nd ed.), Routledge. <https://doi.org/10.4324/9781315816456>
15. Gorzeń-Mitka, I. (2017). Risk management in the banking sector. *Economics and Management*, 16, 114-121.
16. Grant C., and Osanloo A. (2016). Understanding, Selecting and Integrating a Theoretical Framework in Dissertation research. *Administrative issues Journal: Connecting education, practice and research* 4(2), 12-26.
17. Havierníková, K., and Kordoš, M. (2019). Selected risks perceived by SMEs related to sustainable

- entrepreneurship in case of engagement into cluster cooperation. *Entrepreneurship and Sustainability Issues*, 6(4), 1680-1693.
18. Herbane, B. (2010). Small business research: time for a crisis-based view. *International Small Business Journal*, 28(1), 43–64.
 19. Hopkin, P. (2010). *Fundamentals of risk management: Understanding, evaluating and implementing effective risk management*. London, England; Philadelphia, Pennsylvania; New Delhi, India: Kogan Page.
 20. Hung, C., & Hager, M. A. (2019). The impact of revenue diversification on non-profit financial health: A meta-analysis. *Non-profit and Voluntary Sector Quarterly*, 48(1), 5-27. <https://doi.org/10.1177/0899764018807080>
 21. Kaplan, R.S., and Mikes A. (2012). *Managing Risks: A New Framework*. *Harvard Business Review*, 90(6), 1-16.
 22. Kim, P.H., & Vornotas, J. (2014). Market Risk and Young Firms: The Role of Market Conditions in the Early Stages of Business. *Journal of Business Venturing*, 29(4), 479-491. <https://doi.org/10.1016/j.jbusvent.2013.07.001>
 23. Kotler, P., & Keller, K. L. (2016). *Marketing Management (15th ed.)*. Pearson.
 24. Kraus, S., Rigtering, C., Hughes, M., Hosman, V. (2012) ‘Entrepreneurial orientation and the business performance of SMEs: a quantitative study from the Netherlands’, *Review of Managerial Science*, 6 (2), 161.
 25. Le, H. (2019). Literature Review on Diversification Strategy, Enterprise Core Competence and Enterprise Performance. *American Journal of Industrial and Business Management*, 9, 91-108. doi: 10.4236/ajibm.2019.91008.
 26. Lima, P. F. D., Crema, M., and Verbano, C. (2020). Risk management in SMEs: A systematic literature review and future directions. *European Management Journal*, 38(1), 78–94.
 27. Masuku, M. (2019). *Framework for electronic Health Records and electronic Medical Records standard implementation in the health sector of Zimbabwe (Doctoral Thesis)*. University of South Africa, Information Science.
 28. McFadden, D. (1974). Conditional Logit Analysis of Qualitative Choice Behavior. *Frontiers in Econometrics*, 105-142.
 29. Miles, M. B., & Huberman, A. M. (1994). *Qualitative Data Analysis: An Expanded Sourcebook*. Sage Publications.
 30. Ministry of SMEs (2002). *Small and Medium Enterprises (Zimbabwe)*. Government Printers, Harare.
 31. Moreno-Gómez, J., Londoño, J. C., & Zapata-Upegui, L. F. (2023). Marketing strategy and competitiveness: Evidence from Colombian SMEs. *TEC Empresarial*, 17(2), 48-64.
 32. Mwanza, J., & Tshuma, N. (2023). Mitigating Business Risk in Manufacturing SMEs: A nexus between informal and formal business risk management: A case of Bulawayo, Zimbabwe. *International Journal of Research and Innovation in Social Science*, 7(1), 1107-1138.
 33. Nasimiyu, A.E. (2024). Cashflow Management Practices and Financial Performance of Small and Medium Business Enterprises in Kenya. *African Journal of Commercial Studies*, 4(3), pp. 252–263. doi:10.59413/ajocs/v4.i3.7
 34. Ngulube, P. (2018). Overcoming the difficulties associated with using conceptual and theoretical frameworks in heritage studies. In P. Ngulube (Ed.), *Handbook of research on heritage management and preservation* (pp. 1-23). Hershey, PA: IGI Global.
 35. Power, M. (2007) ‘Organized uncertainty: designing a world of risk management’, Oxford; Oxford University Press, New York
 36. Rumelt, R. P. (1982). Diversification Strategy and Profitability. *Strategic Management Journal*, 3(4), 359-369.
 37. Sifumba, C. M., Mothibi, K. B., Ezeonwuka, A., Qeke, S., Matsoso, M. L. (2017). The risk management practices in the manufacturing SMEs in Cape Town. *Problems and Perspectives in Management*, 15: 386–403.
 38. Small, M. (2006). Justifying investment in advanced manufacturing technology: A portfolio analysis. *Industrial Management and Data Systems*, 106, 485-508. <https://doi.org/10.1108/02635570610661589>
 39. Sotamaa, T., Reiman, A., & Kauppila, O. (2024). Manufacturing SME risk management in the era of

- digitalisation and artificial intelligence: A systematic literature review. *Continuity & Resilience Review*. <https://doi.org/10.1108/CRR-12-2023-0022>
40. Spikin, C. I. (2013). Risk management theory: The integrated perspective and its application in the public sector. *Estado, Gobierno, Gestión Pública: Revista Chilena de Administración Pública*, 21, 89-126.
 41. Swaen, B., & George, T. (2022). What is a conceptual framework? | Tips & examples. Scribbr. Retrieved from <https://www.scribbr.com/methodology/conceptual-framework/>
 42. Vaughan, E. J. (1997). Risk management decisions. In *Risk management* (pp. 53-72). New York: John Wiley & Sons Inc.
 43. Zivanai O, Manyani O., ChriseV., Chari F., Nyakurimwa C. (2014). An assessment of Record-Keeping as an Aid to Risk Management of SMEs in Bindura (2009-2013). *The International Journal of Business and Management*, 2, 191-205.