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Risk Management Assessment: the Interplay between Business Profile and Practices in Surigao City, Philippines

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Abstract: *This study assessed the risk management practices within businesses in Surigao City, Philippines, focusing on understanding the significant relationships and differences among five key indicators: risk identification, risk measurement and assessment, risk mitigation, risk reporting and monitoring, and risk governance.The research employed a descriptive survey method, purposive-convenience sampling, and engaged thirty-five businesses as respondents, utilizing a researcher-developed instrument validated by experts.The findings unveil the temporal distribution of enterprises, with a majority operating between 14 to 19 years.Risk identification, mitigation, and governance emerged as well-practiced aspects of the risk management process, while risk measurement and assessment, as well as risk reporting and monitoring, were moderately implemented.The study identifies significant variances, shedding light on intricate relationships within the risk management process. These insights contribute to understanding risk management in business enterprises, offering implications for research and practical applications.*

Keywords: Risk management, risk identification, risk governance, risk measurement and assessment, risk mitigation, risk reporting and monitoring.

I. Introduction

In the evolving global landscape, businesses face challenges that necessitate effective risk management strategies for resilience and growth. The onset of the COVID-19 pandemic has particularly underscored the critical importance of adaptable risk mitigation approaches.

The global business environment has witnessed unprecedented disruptions due to the COVID-19 pandemic. The pandemic has led to considerable disruptions in the global business environment, affecting businesses across various sectors. These disruptions have highlighted the critical importance of robust risk management strategies to navigate uncertainties effectively (Hadjielias et al., 2022). Business enterprises have been particularly vulnerable during this period, facing challenges such as supply chain disruptions, shifts in consumer behavior, and financial uncertainties (Fitriasari, 2020; Rashid et al., 2022; Mariana et al., 2023). The pandemic has emphasized the significance of resilience in business operations, with studies focusing on how businesses can adapt and survive in times of crises (Ndiege et al., 2023; Ramanathan et al., 2021; Suwandana et al., 2022).

Within the context of the Philippines, with its diverse economic activities and resilient entrepreneurial spirit, it has faced unique challenges amid the pandemic. It has not only accentuated pre-existing vulnerabilities but also introduced new dimensions to risk management considerations for business operations in the Philippines (Reyes, 2021). The economic recovery post-pandemic is intertwined with various factors such as environmental risks, governance principles, and the role of cultural and creative industries (Haskuee & Asgary, 2022; Prause, 2021; Banerjee et al., 2022). Strategies for sustainable development, democratic governance, and digital technologies have emerged as critical components in the country's post-pandemic economic recovery efforts (Zhang et al., 2022; Mobo, 2022).

In Surigao City, the study gains granularity by delving into the distinct characteristics of the local business landscape. Surigao City, known for its economic activities spanning mining, fisheries, and trade, represents a small-scale version of the challenges and opportunities confronted by businesses in the Philippines. The recent research conducted in Claver, Surigao del Norte, underscores a notably high level of observance among respondents to Enterprise Risk Management (ERM) practices. The study highlights that these practices positively contribute to the enhancement of overall business performance, reflecting the adeptness of business owners in aligning their operations with strategic risk management.

However, the issues and concerns faced by businesses in Surigao City are multi-faceted, encompassing economic, social, and environmental dimensions. The pandemic has exacerbated supply chain disruptions, workforce management, and financial uncertainties. The local intricacies, including the dependence on specific industries, add layers to the risk landscape. Understanding how businesses navigate these challenges and implement risk management processes is crucial for informed decision-making and sustainable growth.

This research fills the gap in understanding the intricacies of risk management practices within the specific context of Surigao City. By systematically examining the issues and concerns businesses face, the study is academically relevant and a practical guide for businesses seeking effective risk management solutions in a post-pandemic era. The findings contribute to the understanding of the challenges and opportunities within the local business environment, fostering the development of tailored risk management strategies for sustained resilience and growth.

1.1 Theoretical framework

This study employs the Enterprise Risk Management (ERM) Framework (Al-Najjar & Bhatti, 2019; Chen et al., 2020) as the theoretical foundation to investigate the influence of business profiles on risk management practices within Surigao City, Philippines. The ERM Framework is a comprehensive structure, but we integrate relevant theories from various areas to better understand how businesses utilize its components.

The quantitative research will explore how business profiles influence risk identification practices. Risk perception theory (Slovic, 2000) posits that personal experience, perceived severity of consequences (dread), and controllability influence how individuals and organizations perceive risks. Businesses with diverse profiles (industries, sizes) might have varying risk perceptions based on their experiences. The survey captures data on the types and comprehensiveness of risks identified by businesses, potentially revealing how these factors influence proactive risk identification practices.

The research analyzes the sophistication of risk measurement and assessment tools businesses use based on their profiles. Decision-making under uncertainty theory (Knight, 1921) explores how individuals and organizations make selections when faced with incomplete information. It highlights using tools like probability and impact assessments to evaluate risks. The ERM Framework aligns with this theory by emphasizing the use of such tools. The survey will gather information on the specific risk measurement and assessment tools businesses employ, allowing for comparisons between different profiles and their level of sophistication in risk evaluation.

The quantitative analysis will investigate communication protocols and monitoring practices adopted by businesses with different profiles. Organizational culture theory (Schein, 2010) emphasizes an organization's shared values, beliefs, and behaviors. A strong risk culture fosters proactive management, open communication, and continuous monitoring. The survey can gather data on aspects of organizational culture relevant to risk management, such as the perceived importance of risk management within the organization. By analyzing these responses across business profiles, the research can explore potential connections between culture and the efficacy of risk management practices within the ERM framework.

This study delves into the relationship between business profiles and risk management practices in Surigao City. We utilize the Enterprise Risk Management (ERM) framework, analyzing its five key components: risk identification, measurement and assessment, mitigation, reporting and monitoring, and risk governance (Nygren et al., 2020; Power, 2021; Chen et al., 2020). By integrating relevant theories, we explore how business profiles influence these ERM components, including factors like years in operation, nature of business, ownership type, and employee count. Examining these aspects, we aim to identify how business profiles shape risk management practices in Surigao City.
Based on these findings, the research proposes specific recommendations for improving risk management practices in Surigao City businesses. These recommendations are tailored to the needs and challenges faced by businesses with different profiles, ensuring practical applicability within the city's business landscape.

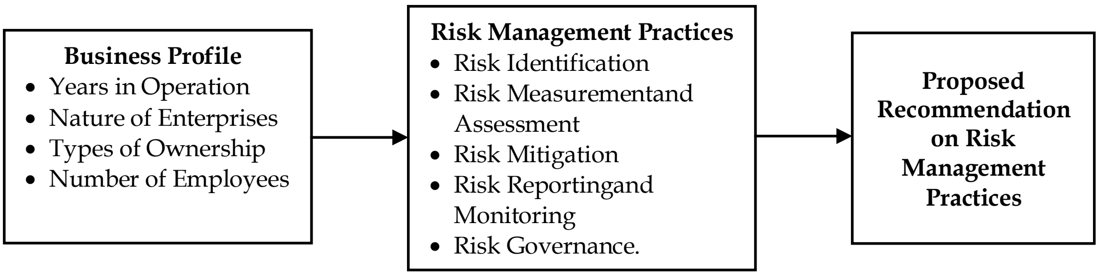

Figure 1. Schematic Diagram of the Study titled Risk Management Assessment: The Interplay Between Business Profile and Practices in Surigao City, Philippines

1.2Statement of the problem

Limited research exists on how business profiles in the Philippines, particularly in Surigao City, influence the adoption and effectiveness of risk management practices. This study addresses this gap by investigating the relationship between business profiles and ERM framework implementation within Surigao City businesses. Specifically, the research:

1. Describes the profile of businesses in Surigao City in terms of:
   1.1 years in operation;
   1.2 nature of business (industry);
   1.3 ownership type; and
   1.4 number of employees.

2. Assesses the extent to which businesses in Surigao City utilize the ERM framework, focusing on the following components:
   2.1 risk identification;
   2.2 risk measurement and assessment;
   2.3 risk mitigation;
   2.4 risk reporting and monitoring; and
   2.5 risk governance.
3. Investigatesthe significant relationship between business profiles and their risk management practices.
4. Determinesthe significant differences in risk management practices among businesses categorized by their profiles.
5. Based on the study's findings, propose recommendations to enhance risk management practices for businesses in Surigao City, with specific considerations tailored to different business profiles.

II. Literature Review

2.1. Overview and Significance of Risk Management

The ever-changing business landscape necessitates a proactive approach to managing uncertainties and threats (Nygren et al., 2020). Globalization, technological advancements, and dynamic market forces necessitate a proactive approach to handling potential threats and disruptions. Risk management has occurred as a critical discipline, ensuring business continuity, fostering sound decision-making, and safeguarding organizational objectives (Al-Najjar & Bhatti, 2019; Power, 2021). This literature review explores into the significance of risk management in business enterprises, dissects the key components of the risk management process, and explores successful approaches, challenges, and methods for aligning risk management with overall organizational strategies.

Effective risk management offers a multitude of benefits for businesses. Studies by Chen et al. (2020) highlight its positive impact on financial performance by minimizing potential losses and maximizing opportunities through proactive identification and mitigating threats. Robust risk management frameworks enhance operational efficiency by streamlining processes and identifying potential disruptions before they occur (Nygren et al., 2020). Furthermore, a strong risk management culture fosters a focus on safety, compliance, and ethical conduct, strengthening investor confidence and brand reputation (Power, 2021).

2.2. Key Components of the Risk Management Process

The concept of risk management has undertaken a significant transformation in recent years. Traditionally viewed as a reactive process focused on mitigating operational hazards, contemporary risk management adopts a more integrated approach. It encompasses identifying, assessing, and treating a broader spectrum of threats, including financial risks, strategic missteps, technological disruptions, and reputational damage (Al-Najjar & Bhatti, 2019). This shift reflects the growing complexity of the business environment and the interconnectedness of various risk factors.

A successful risk management framework relies on a structured, cyclical process with five interconnected stages. The first stage, **risk identification**, proactively hunts for potential threats that could disrupt the organization. Common methods include scenario planning workshops where teams brainstorm and map out potential future situations and industry trend analysis to identify emerging risks before they strike [Nygren et al., 2020]. Additionally, historical data analysis can unearth patterns of past disruptions, and surveys or competitor analysis can provide valuable external perspectives on potential threats that may be overlooked internally (Nygren et al., 2020).

Once risks are identified, the **risk measurement and assessment** stage swings into action. Here, each risk is evaluated based on its likelihood of occurring and the potential severity of its impact (Al-Najjar & Bhatti, 2019). Risk matrices, on the other hand, categorize risks based on their likelihood and impact, allowing for prioritization based on severity (Power, 2021). When dealing with less quantifiable threats, like reputational damage or disruptions to key personnel, qualitative techniques come into play. These may involve expert judgment or scenario planning exercises to estimate the potential impact.

Following the risk assessment, the framework moves to **risk mitigation**. Here, the focus shifts towards developing strategies to address the identified threats. There are four main mitigation approaches: risk avoidance (eliminating the threat), transference (shifting the risk to a third party through insurance), reduction (lowering the likelihood or impact of the risk), or acceptance (deciding to bear the consequences) (Nygren et al., 2020). The optimal strategy depends on the specific risk profile, the organization's risk tolerance, and available resources. Scenario planning exercises can also be valuable tools, allowing teams to rehearse responses to a range of potential outcomes and identify weaknesses in existing mitigation strategies (Power, 2021).

The next stage, **risk reporting and monitoring,** ensure transparency and accountability by regularly communicating risks and mitigation efforts to stakeholders, including senior management, employees, and investors (Nygren et al., 2020). Effective communication fosters a culture of risk awareness throughout the organization, where everyone is vigilant and prepared to respond to potential threats. This stage also involves continuous monitoring of the risk landscape. As the organization or its environment evolves, new threats may emerge, or the likelihood and impact of existing risks may change (Power, 2021).

Finally, the framework emphasizes the importance of **risk governance**. A strong governance structure is crucial for effective risk management. This includes assigning clear ownership of risk management processes, defining roles and responsibilities for different teams, and ensuring adequate resources are allocated for successful implementation

(Chen et al., 2020). Clear ownership ensures accountability, while defined roles and responsibilities prevent confusion and ensure everyone knows their part in managing risk (Chen et al., 2020). With adequate resources, the organization can invest in the necessary training, tools, and technologies to effectively implement the risk management framework.

2.3. Successful Approaches in Business Enterprises

The literature identifies several successful approaches to risk management in business enterprises. Integrating risk management with strategic planning allows for an integrated approach to business decision-making, enabling organizations to develop more robust and adaptable strategies by considering potential risks upfront (Power, 2021). Fostering a culture of risk awareness encourages employees to actively identify and report potential threats, promoting a proactive approach throughout the organization (Nygren et al., 2020). Additionally, leveraging risk management software and data analytics tools facilitates efficient risk identification, assessment, and reporting (Chen et al., 2020).

2.4. Challenges and Barriers

Despite the acknowledged benefits, implementing a successful risk management framework presents several challenges. Lack of strong leadership buy-in and commitment to risk management can hinder allocating necessary resources and momentum (Al-Najjar & Bhatti, 2019). Fragmented organizational structures with limited information sharing can impede comprehensive risk identification and management (Chen et al., 2020). Finally, shifting established organizational practices to embrace risk management can encounter resistance from employees accustomed to traditional methods (Nygren et al., 2020).

2.5. Aligning Risk Management with Organizational Strategies

Aligning risk management with organizational strategies fosters a proactive and strategic approach to managing uncertainties. This integration ensures that risks are viewed as threats and potential opportunities for innovation and competitive advantage (Power, 2021). In conclusion, risk management has become an essential function for businesses navigating the complexities of the contemporary landscape. Organizations can enhance their resilience, optimize performance, and achieve long-term success by adopting a comprehensive risk management framework and addressing the associated challenges.

Synthesis

Risk management has become essential for businesses to navigate the uncertainties of today's dynamic world. Globalization, technological advancements, and ever-shifting markets demand a proactive approach to managing threats and disruptions. Effective risk management offers significant benefits, such as improving financial performance and operational efficiency and fostering a strong organizational risk culture.

A successful risk management framework follows a structured process with key components. The first step involves proactively identifying potential threats through scenario planning, brainstorming, and industry trend analysis. Once identified, risks are evaluated based on their likelihood and potential impact. Businesses then develop mitigation strategies, such as avoiding the risk entirely, transferring it to a third party, reducing its impact, or accepting the consequences. Regularly communicating risks and mitigation efforts to stakeholders while continuously monitoring the risk landscape is crucial. Establishing a strong governance structure with clear ownership, defined roles, and adequate resources ensures effective implementation of the entire risk management process.

III. Method

3.1 Research Design and Sampling Technique

This study used a descriptive survey design with a sample size of 35 participants representing management personnel from businesses in Surigao City, Philippines. While acknowledging the merits of a larger sample size for enhanced generalizability (Sekaran & Bougie, 2016), the chosen sample size is justified for the following reasons specific to the research design and target population.

Focus on Description and Population Homogeneity: The primary objective of this study is to describe the current state of risk management practices within Surigao City's business sector. Descriptive research, unlike hypothesis testing, does not rely heavily on statistical power derived from a large sample (Creswell & Creswell, 2018). Here, the focus is on understanding existing practices, and 35 responses can provide valuable insights into this aspect. Additionally, Surigao City, as the provincial business district, likely has a concentration of small and medium-sized enterprises (SMEs). If the businesses within the city share similar characteristics in terms of size and industry, a sample of 35 management personnel can effectively capture the main trends in risk management practices within this specific segment of the population.

Purposive Convenience Sampling and Pre-Pandemic Experience: The study utilized purposive convenience sampling to target readily accessible management personnel within Surigao City (Neuman, 2020). While this method may limit generalizability to the entire population of businesses, it ensures the inclusion of relevant participants with the necessary knowledge and experience on risk management practices within their organizations. Furthermore, a key criterion for participation was experience working in a management position before the COVID-19 pandemic. This criterion allowed the study to explore potential changes in risk management practices due to the impact of the pandemic. With a smaller sample size, researchers could delve deeper into individual pre-pandemic experiences through open-ended survey questions or consider conducting follow-up interviews with a subset of participants for a more nuanced understanding. This combined approach can yield richer qualitative data alongside the quantitative survey results.

3.2Data Gathering and Analysis

The data collection process for this study was rigorous and ensured participant consent at multiple levels. After obtaining permission from the university and business owners, a questionnaire was developed and validated by experts to capture data on risk management practices. Participants could conveniently choose between electronic or face-to-face administration. Frequency counts, and percentages described business profiles, while means and standard deviations assessed how consistently businesses practiced each risk management dimension. A predetermined scale translated numerical scores into qualitative interpretations (Always Practiced, Sometimes Practiced, Rarely Practiced, Not Practiced) for easier comprehension. Spearman's rho correlation explored relationships between business profiles and risk management practices, while ANOVA investigated potential variations across these practices.

IV. Results and Discussions

4.1 Business Profile

The participating businesses in Surigao City displayed a variety in terms of their operational history, industry focus, ownership structure, and employee size. As shown in Table 1, the majority (40%) have been operating for 14 to 19 years, highlighting a strong presence of established businesses. A significant portion (22.86%) falls within the 8-13-year range, indicating a healthy mix of experienced and newer ventures. The remaining businesses are more evenly distributed across categories, with 14.29% operating for 1-7 years and 20-25 years, respectively. Only a small number operate within the 26-31 year range (5.71%), and just one business has been established for 32-38 years.

Table 1. Frequency count and percentage of business profile in Surigao City

Profile		Frequency	Percentage
Years in operation	1 - 7 years	5	14.29
	8 - 13 years	8	22.86
	14 -19 years	14	40.00
	20 - 25 years	5	14.29
	26 - 31 years	2	5.71
	32 - 38 years	1	2.86
Nature of enterprise	General Merchandise	5	14.29
	Drugstore / Pharmacy	1	2.86
	Hardware	6	17.14
	Tourism Services Provider	5	14.29
	Accommodation	2	5.71
	Distribution	1	2.86
	Renting	13	37.14
	Others	2	5.71
Types of ownership	Single Proprietorship	29	82.86
	Partnership	4	11.43
	Corporation	2	5.71
Number of employees	106 – 115	1	2.86
	96 – 105	1	2.86
	86 – 95	1	2.86
	46 – 55	1	2.86
	36 – 45	3	8.57
	26 – 35	3	8.57
	16 – 25	9	25.71
	6 – 15	16	45.71

Industry focus reveals a dominance of rental businesses (37.14%), followed by hardware stores (17.14%). Tourism and general merchandise businesses account for 14.29%, while accommodation and other businesses comprise 5.71%. Finally, drugstores/pharmacies and distribution businesses represent a smaller segment (2.86%).

Ownership structures also reveal a prevalence of single proprietorships (82.86%), suggesting a landscape dominated by owner-operated businesses. Partnerships and corporations comprise a smaller portion, with 11.43% and 5.71% respectively.

Employee size varies across the participating businesses. The most common range is 6-15 employees (45.71%), followed by businesses with 16-25 employees (25.71%). Smaller segments fall within the 26-35 and 36-45 employee range (totaling 8.57%). The remaining participants have varying employee sizes, with one business each in the 106-115, 96-105, 86-95, and 46-55 employee categories.

4.2 The Extent of Risk Management Practices

The risk management practices of the businesses in Surigao City, including risk identification, risk measurement and assessment, risk mitigation, risk reporting and monitoring, and risk governance, were analyzed using the mean and standard deviation. In effect, the following mean interval was devised for the interpretation:

Table 2 summarizes the survey results on risk management practices among businesses in Surigao City regarding risk identification. The average mean score across all practices was 3.40 (SD = 0.65). This falls under the "Always Practiced," indicating a positive trend in risk identification practices among Surigao City businesses. The standard deviation suggests a moderate variability in the scores. While the average suggests a strong emphasis on risk identification, some businesses might be more proactive than others (Project Management Institute, 2021). This variability could be due to industry differences, company size, or each business's specific risk management maturity.

Table 2. Risk management practices of businesses in Surigao City in terms of risk identification

Rating Statement	Mean	SD	Verbal Description	Qualitative Interpretation
1. Management reviews project-related documents such as schedules, procurement plans, cost estimates, and other information for accuracy, completeness, and consistency.	3.51	0.66	Strongly Agree	Always Practiced
2. The management brainstorms the potential challenges with other company employees, executives, or managers that can help identify risks.	3.43	0.61	Strongly Agree	Always Practiced
3. The management conducts a SWOT analysis to determine a project's strengths, weaknesses, opportunities, and threats.	3.03	0.82	Agree	Sometimes Practiced
4. The management conducts internal research to identify potential risks across the organization.	3.34	0.68	Strongly Agree	Always Practiced
5. The management analyzes customer reports or complaints that may help in risk identification	3.71	0.46	Strongly Agree	Always Practiced
Average	**3.40**	**0.65**	**Strongly Agree**	**Always Practiced**

Analyzing customer reports or complaints for risk identification, among the statements, received the highest mean score of 3.71 (SD = 0.46). This score translates to "Always Practiced," signifying that most businesses surveyed frequently utilize customer feedback for risk identification. The relatively low standard deviation further indicates a strong consensus among businesses regarding the importance of customer feedback in this context.

This aligns with research highlighting the value of a customer-centric approach to risk management, where proactively analyzing customer insights can help businesses identify and mitigate potential risks before they escalate (Gronroos, 2011). The emphasis on analyzing customer feedback as a risk identification strategy is a positive finding. By actively incorporating customer insights, Surigao City businesses can gain valuable intelligence about potential issues and take proactive steps to address them. This customer-centric approach can improve risk mitigation and customer satisfaction (Buttle, 2018).

Conversely, conducting a SWOT analysis had the lowest mean score of 3.03 (SD = 0.82). This falls under the "Agree" category, suggesting that businesses in Surigao City may only "Sometimes Practice" SWOT analysis. The higher standard deviation compared to other practices indicates a wider range of responses, with some businesses relying more heavily on SWOT analysis than others. This finding suggests a potential gap in strategic risk identification practices, as SWOT analysis offers a structured approach to identifying internal strengths, weaknesses, external opportunities, and threats that can impact projects (Hill & Westbrook, 2019). However, the lower emphasis on conducting SWOT analysis warrants further investigation. While Surigao City businesses might be utilizing informal methods for risk identification, a structured approach like SWOT analysis can ensure a more comprehensive assessment of potential risks (Huang et al., 2023).

Table 3. Risk management practices of businesses in Surigao City in terms of risk measurement and assessment

Rating Statement	Mean	SD	Verbal Description	Qualitative Interpretation
1. The management examines how project outcomes and objectives might change due to the impact of the risk.	3.31	0.63	Strongly Agree	Always Practiced
2. The management uses statistical measures, such as historical investment risk and volatility predictors.	2.74	0.78	Agree	Sometimes Practiced
3. Management identifies specific hazards, determines which assets are at risk in each scenario, and assesses the impact scale.	3.06	0.54	Agree	Sometimes Practiced
4. The management has a good risk measure that is relevant and actionable.	3.00	0.59	Agree	Sometimes Practiced
5. Management uses risk measures that are often linked to time or time horizon.	2.83	0.82	Agree	Sometimes Practiced
Average	**2.99**	**0.67**	**Agree**	**Sometimes Practiced**

Table 3 displays the results of risk management practices of businesses in Surigao City, focusing on risk measurement and assessment. The average mean score across all practices was 2.99 (SD = 0.67), falling under the "Sometimes Practiced" (SP) category. This suggests that while businesses are taking some steps to measure and assess risks, there is room for improvement. The standard deviation indicates moderate variability in the scores. This suggests that some businesses have more robust risk measurement practices than others.

The statements examining how project outcomes and objectives might change due to risk impact received the highest mean score (M = 3.31, SD = 0.63). This translates to "Always Practiced, " signifying that scenario analysis is common among Surigao City businesses. The relatively low standard deviation suggests consistency across businesses when applying this approach. The finding that businesses generally consider how project outcomes and objectives might change due to risks is a positive indicator. Scenario analysis is a fundamental step in risk assessment, allowing businesses to anticipate potential impacts and develop mitigation strategies (Camilleri et al., 2021). The consistency in applying this practice across businesses (indicated by the low standard deviation) suggests a general understanding of its importance.

The lowest mean scores were observed in practices that utilize more formal risk assessment techniques. For instance, using statistical measures for risk assessment had a mean score of 2.74 (SD = 0.78), falling under "Sometimes Practiced". The higher standard deviations suggest a wider range of applications across businesses. Some businesses might incorporate these techniques, while others might neglect them altogether. However, the lower mean scores for practices involving more formal risk assessment techniques suggest that businesses might be underutilizing valuable tools. Statistical measures, for example, can objectively evaluate risk likelihood and impact, enhancing risk prioritization (Cavanagh et al., 2016).

Similarly, having a well-defined risk measure allows for consistent risk evaluation across projects, ensuring all risks are assessed using the same criteria (Project Management Institute, 2021). While scenario analysis is a valuable practice, it may not be sufficient for complex projects. Formal risk assessment techniques can provide a more comprehensive picture of potential risks and their associated impacts.

Table 4. Risk management practices of businesses in Surigao City in terms of risk mitigation

Rating Statement	Mean	SD	Verbal Description	Qualitative Interpretation
1. Management establishes policies and procedures that assist the organization in foreseeing and avoiding the impact of high-risk situations.	3.51	0.56	Strongly Agree	Always Practiced
2. The management checks products that may have a defect, which may lead to unwanted and unacceptably high field failures	3.40	0.74	Strongly Agree	Always Practiced
3. The management identifies issues that could come up that would affect the project timeline, like important deadlines, due dates, and final delivery dates.	3.14	0.81	Agree	Sometimes Practiced
4. Management manages a schedule that illustrates specific time allowances for planning, designing, testing, retesting, and making changes as necessary.	3.03	0.57	Agree	Sometimes Practiced
5. Management outlines all anticipated costs and accounts for any costs that could arise to avoid the consequences of going over budget.	3.23	0.65	Agree	Sometimes Practiced
Average	**3.26**	**0.67**	**Strongly Agree**	**Always Practiced**

Table 4 shows the results of risk management practices related to risk mitigation. The average mean score across all practices was 3.26 (SD = 0.67), interpreted as "Always Practiced." This suggests that Surigao City businesses generally prioritize risk mitigation strategies. The standard deviation of 0.67 indicates moderate variability in the scores. While risk mitigation is a priority, there are variations in how comprehensively businesses apply these practices.

Looking at individual practices, *establishing policies and procedures to foresee and avoid high-risk situations* received the highest mean score (M = 3.51, SD = 0.56). This falls under "Always Practiced," strongly emphasizing proactive risk mitigation. The relatively low standard deviation suggests consistency across businesses when applying this approach. The emphasis on establishing clear policies and procedures to avoid high-risk situations is a positive indicator. Proactive risk mitigation is essential for effective risk management (Hijazi et al., 2019). Consistent application (indicated by the low standard deviation) suggests a general understanding of this approach.

Conversely, *managing a detailed project schedule that allocates specific time allowances for various stages* had the lowest mean score (M = 3.03, SD = 0.57) among the five statements. This score falls under "Sometimes Practiced." The standard deviation is similar to other practices, suggesting some variation but not a significant outlier. This finding highlights a potential gap in how Surigao City businesses manage project timelines. However, the lower mean score for managing detailed project schedules suggests an area for improvement. While the standard deviation is not the highest, some businesses might neglect this aspect of risk mitigation altogether. A well-defined project schedule with specific time allowances for planning, designing, testing, and revisions is crucial for mitigating risks that could impact project timelines (Olanrewaju et al., 2021).

Table 5 sum up the survey results on the risk management practices of businesses in Surigao City, focusing on risk reporting and monitoring. The average mean score across all practices was 3.19 (SD = 0.59), interpreted as "Sometimes Practiced." This suggests that while Surigao City businesses engage in some risk reporting and monitoring activities, there is room for improvement in establishing a more consistent and comprehensive system. The standard deviation indicates moderate variability in the scores, with some businesses potentially having more robust risk reporting and monitoring practices than others.

Looking at individual practices, *consistently monitoring the company's risk position and associated mitigation strategies* received the highest mean score (M = 3.37, SD = 0.60). This falls under "Always Practiced," indicating that most businesses recognize the importance of ongoing risk monitoring. However, the standard deviation suggests some variation in how consistently this practice is applied. The finding that most businesses consistently monitor their risk position and mitigation strategies is a positive indicator. Continuous monitoring allows businesses to identify risk likelihood or impact changes, prompting adjustments to mitigation plans as needed (Zhang, J. and Li, G., 2020). The variation observed in the standard deviation suggests that some businesses might benefit from establishing more formal risk monitoring processes to ensure consistent application.

Table 5. Risk management practices of businesses in Surigao City in terms of risk reporting and monitoring.

Rating Statement	Mean	SD	Verbal Description	Qualitative Interpretation
1. The management keeps up-to-date with changes, the status of risks, and mitigation strategies to provide continual visibility to the state of risk and probable impact.	3.09	0.66	Agree	Sometimes Practiced
2. The management identifies what it can do to eliminate or decrease the impact of the risk.	3.23	0.60	Agree	Sometimes Practiced
3. The management tracks identified risks and evaluates the performance of risk mitigation actions set by the company	3.17	0.57	Agree	Sometimes Practiced
4. The management consistently monitors the company's risk position along with a mitigation strategy that will allow for continuous improvement.	3.37	0.60	Strongly Agree	Always Practiced
5. The management validates its risk assessments based on the company's risk likelihood and impact.	3.11	0.53	Agree	Sometimes Practiced
Average	**3.19**	**0.59**	**Agree**	**Sometimes Practiced**

Looking at individual practices, *consistently monitoring the company's risk position and associated mitigation strategies* received the highest mean score (M = 3.37, SD = 0.60). This falls under "Always Practiced," indicating that most businesses recognize the importance of ongoing risk monitoring. However, the standard deviation suggests some variation in how consistently this practice is applied. The finding that most businesses consistently monitor their risk position and mitigation strategies is a positive indicator. Continuous monitoring allows businesses to identify risk likelihood or impact changes, prompting adjustments to mitigation plans as needed (Zhang, J. and Li, G., 2020). The variation observed in the standard deviation suggests that some businesses might benefit from establishing more formal risk monitoring processes to ensure consistent application.

The lowest mean score was observed for *keeping up-to-date with changes, risk status, and mitigation strategies*. This practice scored 3.09 (SD = 0.66) and falls under "Sometimes Practiced" (SP). The standard deviation here is the highest, suggesting a wider range of business applications. Some businesses might diligently maintain current risk information, while others might neglect this. However, the lower mean score and higher standard deviation for keeping up-to-date with risk information suggest a more concerning practice gap. Maintaining current information on risks is essential for effective risk management (Cavanagh et al., 2016).

Table 6. Risk management practices of businesses in Surigao City in terms of risk governance.

Rating Statement	Mean	SD	Verbal Description	Qualitative Interpretation
1. The management guides sound and informed decision-making and effective allocation of resources	3.29	0.62	Strongly Agree	Always Practiced
2. The management includes reviewing the system of operation periodically for adequacy and effectiveness.	3.31	0.53	Strongly Agree	Always Practiced
3. Management provides employees with the necessary information regarding monitoring and reporting risks.	3.43	0.65	Strongly Agree	Always Practiced
4. The management regularly evaluates the nature and extent of risks to which the company is exposed.	3.20	0.68	Agree	Sometimes Practiced
5. The management uses systems and tools (e.g., forecasting, monitoring, and evaluation.) to facilitate the risk management process	3.03	0.62	Agree	Sometimes Practiced
Average	**3.25**	**0.62**	**Strongly Agree**	**Always Practiced**

Table 6 indicates the survey results on risk management practices of businesses focusing on risk governance in Surigao City. The average mean score across all practices was 3.25 (SD = 0.62), with the "Always Practiced" qualitative interpretation scale. This suggests that Surigao City businesses prioritize establishing a strong foundation for risk governance. The standard deviation of 0.62 indicates moderate variability in the scores, with some businesses potentially having more developed risk governance structures than others.

Looking at individual practices, *providing employees with the necessary information regarding monitoring and reporting risks* received the highest mean score (M = 3.43, SD = 0.65). This falls under "Always Practiced," which strongly emphasizes employee awareness and involvement in risk management. However, the standard deviation suggests variations in how effectively this information is communicated across businesses. The emphasis on empowering employees with risk management knowledge is a positive indicator. An informed workforce is crucial for identifying and reporting risks effectively (Project Management Institute, 2021). The variation observed in the standard deviation suggests that some businesses might benefit from exploring more comprehensive employee training programs on risk identification and reporting procedures.

The lowest mean score, 3.03 (SD = 0.62), was observed for *using systems and tools to facilitate the risk management process*, interpreted as "Sometimes Practiced." The standard deviation is similar to the overall average, suggesting moderate variability in applying these tools. This finding highlights a potential gap in how Surigao City businesses leverage technology and data for risk management. However, the lower mean score for using risk management tools and systems suggests an area for improvement. Tools like forecasting, monitoring, and evaluation software can enhance risk analysis and decision-making (Cavanagh et al., 2016). The standard deviation suggests that some businesses might be unaware of these tools or lack the resources to implement them.

Table 7: Summary Table on the Risk Management Practices in Surigao City

Indicators	Weighted Mean	Standard Deviation	Verbal Description	Qualitative Interpretation	Rank
Risk Identification	3.40	0.65	Strongly Agree	Always Practiced	1
Risk Measurement and Assessment	2.99	0.67	Agree	Sometimes Practiced	5
Risk Mitigation	3.26	0.67	Strongly Agree	Always Practiced	2
Risk Monitoring and Reporting	3.19	0.59	Agree	Sometimes Practiced	4
Risk Governance	3.25	0.62	Strongly Agree	Always Practiced	3
Composite Mean	**3.22**	**0.64**	**Agree**	**Sometimes Practiced**	

The provided data (Table 7) summarizes the survey findings on risk management practices in Surigao City businesses. The overall results indicate that Surigao City businesses are taking steps towards comprehensive risk management, with a composite mean score of 3.22 (SD = 0.64) falling under the "Sometimes Practiced" category. This suggests room for improvement in establishing more consistent and robust practices. The standard deviation indicates some variation in how businesses approach risk management, with some potentially having stronger practices in certain areas than others.

Looking at individual areas, *Risk Identification* received the highest mean score (3.40, SD = 0.65), suggesting a strong emphasis on recognizing potential risks. However, the standard deviation highlights some variation in how effectively this is done across businesses. Conversely, *Risk Measurement and Assessment* had the lowest score (2.99, SD = 0.67), indicating a need for improvement in formally measuring and assessing the likelihood and impact of identified risks. The standard deviation suggests that some businesses might be neglecting these practices altogether.

While businesses prioritize establishing *Risk Mitigation* strategies (3.26, SD = 0.67), the standard deviation suggests there might be room for improvement in how consistently these strategies are applied. Similarly, *Risk Monitoring and Reporting* practices (3.19, SD = 0.59) are implemented to some extent, but a more comprehensive system for keeping information current and integrated with monitoring could be beneficial. Finally, *Risk Governance practices* (3.25, SD = 0.62) highlight core elements like employee awareness and leadership commitment. However, the use of technology and data for risk management could be improved.

The survey findings offer insights into the risk management landscape in Surigao City. While businesses are taking some steps, there is a clear opportunity to develop more robust and data-driven practices across all five key areas. This could involve improving risk measurement and assessment, implementing more consistent mitigation strategies, and leveraging technology for better monitoring and reporting. Surigao City businesses can enhance their overall risk management effectiveness and achieve better project outcomes by addressing these areas.

4.3 Relationship between the business profile and risk management practices

The *number of employees* emerged as the most impactful business profile variable influencing all five examined risk management practices. Statistically significant positive correlations were found between the *number of employees and risk measurement and assessment* (r = 0.558, p = 0.000), *risk mitigation* (r = 0.466, p = 0.005), and *risk reporting and monitoring* (r = 0.363, p = 0.032). A weak positive correlation was also observed between *risk identification* (r = 0.327, p = 0.055) and *risk governance* (r = 0.225, p = 0.193).

These findings suggest that businesses with larger workforces tend to have more comprehensive practices for evaluating potential risks, mitigating them, reporting and monitoring them, and even identifying them first(Margherita, A. and Heikkilä, J., 2021). This could be attributed to the increased complexity of managing a larger employee base and the associated risks.

Years in operation and ownership structure did not show statistically significant correlations with any of the examined risk management practices. While weak positive or negative correlations were observed for ownership structure and some practices (r values ranging from -0.232 to 0.308), none reached statistical significance. The current data suggests that ownership structure (sole proprietorship, partnership, corporation) likely has minimal influence on how businesses in Surigao City approach risk management practices.

The findings of this study underline the crucial role of the *number of employees* in influencing risk management practices. Businesses with larger workforces tended to have more established practices across all five risk management areas. This aligns with risk maturity, where organizations develop more comprehensive risk management capabilities as their size and complexity increase (PwC, 2021). Scaling risk management practices alongside workforce expansion is crucial to ensure adequate mitigation strategies for the increasingly intricate risks associated with larger operations (Atiqah et al., 2020).

Table8. Spearman Rho correlation results between the Business Profile and Risk Management Practices

Profile Variables	Risk Management Practices	r-value	p-value	Interpretation
Years in Operation	Risk Identification	.166	.341	Not Significant
	Risk Measurement and Assessment	.157	.368	Not Significant
	Risk Mitigation	.236	.172	Not Significant
	Risk Reporting and Monitoring	.026	.880	Not Significant
	Risk Governance	.025	.886	Not Significant
Nature of Business	Risk Identification	-.281	.101	Not Significant
	Risk Measurement and Assessment	-.489**	.003	**Significant**
	Risk Mitigation	-.200	.250	Not Significant
	Risk Reporting and Monitoring	-.232	.180	Not Significant
	Risk Governance	-.068	.699	Not Significant
Types of Ownership	Risk Identification	.219	.207	Not Significant
	Risk Measurement and Assessment	.308	.072	Not Significant
	Risk Mitigation	-.032	.856	Not Significant
	Risk Reporting and Monitoring	-.014	.937	Not Significant
	Risk Governance	-.174	.317	Not Significant
Number of Employees	Risk Identification	.327	.055	Significant
	Risk Measurement and Assessment	.558**	.000	**Significant**
	Risk Mitigation	.466**	.005	**Significant**
	Risk Reporting and Monitoring	.363*	.032	**Significant**
	Risk Governance	.225	.193	Not Significant

**Correlation is significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

The analysis also hinted at a potential link between the *nature of the business* and risk management practices. As previously mentioned, different industries likely have unique risk profiles necessitating specific assessment approaches rather than a negative correlation. Future research could delve deeper into this aspect, exploring how industries tailor their risk measurement methodologies to effectively capture and address their particular risk landscapes (Power, 2019). For instance, the financial services industry might prioritize operational risk assessment tools, while manufacturing companies might focus on production safety risks.

While the current study provides initial insights, some limitations require further investigation. The observed weak correlations for *types of ownership* warrant exploration with a larger and more diverse sample size. Additionally, employing qualitative research methods, such as interviews with risk management professionals across different industries, could provide richer data and a deeper understanding of how business characteristics influence risk management practices (Hussein et al., 2021).

4.4 Significant Difference between Business Profile and Risk Management Practices

Table 10 shows the relationship between business profile characteristics and risk management practices. The analysis of variance results revealed no statistically significant differences in these practices based on years of operation, nature of business, type of ownership, or number of employees. While all p-values exceeded the standard threshold for significance (0.690, 0.909, 0.474, and 0.609, respectively), the F-statistics were relatively high (0.793, 0.524, 1.048, and 0.884).

Table 10: ANOVA Results for Risk Management Practices by Business Profile

		Sum of Squares	df	Mean Square	F	p-value	Interpretation
Years of Operation	Between Groups	1033.57	20	51.68	0.793	0.690	Not Significant
	Within Groups	912.83	14	65.20			Not Significant
	Total	1946.40	34				Not Significant
Nature of Business	Between Groups	149.71	20	7.49	0.524	0.909	Not Significant
	Within Groups	199.83	14	14.27			Not Significant
	Total	349.54	34				Not Significant
Type of Ownership	Between Groups	11.48	20	0.57	1.048	0.474	Not Significant
	Within Groups	7.67	14	0.55			Not Significant
	Total	19.14	34				Not Significant
Number of Employees	Between Groups	12948.05	20	647.40	0.884	0.609	Not Significant
	Within Groups	10255.83	14	732.56			Not Significant
	Total	23203.89	34				Not Significant

This lack of significant differences presents an interesting finding. It could suggest a maturing risk management landscape where standardized practices are becoming the norm across businesses of all ages, industries, and ownership structures. Heightened regulations, increased risk awareness, and readily available risk management frameworks might be driving this trend (Al-Najjar &Quaife, 202; Power, 2019). Alternatively, the chosen measure for risk management practices might not have captured the nuances of how these practices differ across different business profiles. A more comprehensive assessment tool that considers various risk identification, mitigation, and monitoring aspects could provide deeper insights into future studies (Atiqah et al., 2020). Additionally, the sample might not have been diverse enough to reveal potential influences of certain business characteristics. Analyzing data from various industries, company sizes, and ownership structures could reveal more nuanced relationships.

Despite the lack of statistical significance, the high F-statistics, particularly for type of ownership and number of employees, suggest potential trends warrant further exploration. Although F-statistics alone cannot establish relationships, they point toward possibilities that deserve further investigation. Future research with diverse samples and qualitative methods like interviews could provide deeper insights. Additionally, exploring the specific risk management practices employed by different business profiles could significantly improve our understanding of how companies approach risk.

V. Conclusion

Based on the findings of this study, we can conclude that Surigao City businesses have taken positive steps toward establishing a proactive risk management culture. Businesses prioritize identifying potential risks, demonstrating a strong focus on building awareness. They also emphasize mitigating those risks and establishing a framework for managing them. However, there is room for improvement in formally measuring and assessing risks and consistently monitoring and reporting them. These practices are currently not fully implemented, suggesting a need for further development to achieve a more comprehensive understanding and ongoing vigilance regarding potential threats.

Interestingly, the number of employees emerged as a key factor influencing risk management practices. Businesses with larger workforces tend to have more established practices across several areas. The nature of the business also plays a role, with a negative correlation between industry type and risk measurement and assessment. This might indicate that different industries require distinct methodologies for formally assessing potential risks.

While the study found no statistically significant differences in practices based on years of operation or ownership structure, the observed trends warrant further investigation with a larger sample size. Additionally, qualitative research could provide richer insights into how business characteristics influence these practices.

Overall, Surigao City businesses show a positive trend towards proactive risk management. However, specific areas like measurement, reporting, and industry-specific tailoring require further development to ensure a more robust risk management framework.

Recommendations

Based on the study's findings, Surigao City businesses have a commendable foundation for risk management, but there is room for improvement, particularly in risk measurement, assessment, monitoring, and reporting. Here are some concrete recommendations to address these areas:

1. **Implement Formal Risk Assessment Tools**. Businesses, especially those with larger workforces (6-15+ employees), should consider implementing formal risk assessment tools. These tools can be industry-

specific or generic, depending on the needs of the business. Examples include FMEA (Failure Mode and Effect Analysis) or scenario planning exercises.

2. **Develop a Risk Management Plan**. Create a documented risk management plan outlining the process for identifying, assessing, mitigating, monitoring, and reporting risks. This plan should be communicated and accessible to all employees.
3. **Establish Risk Monitoring and Reporting Procedures**. Develop clear procedures for consistently monitoring identified risks and reporting on their status, mitigation efforts, and any emerging risks. This could involve regular risk review meetings or designated personnel responsible for monitoring.
4. **Industry-Specific Risk Assessment Training**. Considering the negative correlation between industry type and risk measurement, collaboration with industry associations or workshops could be explored. These sessions would focus on industry-specific risk assessment methodologies, allowing businesses to tailor their approach for better accuracy.
5. **Leverage Technology**. Explore using risk management software to streamline the risk assessment, monitoring, and reporting processes. This can improve efficiency and provide centralized data for better decision-making.
6. **Seek Professional Guidance**. Businesses, particularly smaller ones, can benefit from consulting with risk management professionals. These professionals can offer guidance on selecting appropriate risk assessment tools, developing a risk management plan, and implementing best practices.

By implementing these recommendations, Surigao City businesses can strengthen their risk management framework, gain a more comprehensive understanding of potential threats, and achieve a more proactive approach to mitigating risks. This will contribute to a more resilient and sustainable business environment in the city.

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