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Research Article

OPERATIONAL RISK MANAGEMENT IN COFFEE SHOP BUSINESS: AN ISO 31000 APPROACH FROM INDONESIA

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ABSTRACT

Background: The rapid growth of the coffee shop industry in Indonesia has intensified competition and increased operational complexity for small and medium-sized enterprises in the food and beverage sector. Coffee shops rely heavily on daily operational processes involving human resources, equipment, supply chains, and service interactions. These operational dependencies create various risks that may disrupt business continuity if not managed systematically. Despite the growing number of coffee shop businesses, many small enterprises still lack structured operational risk management practices.
Purpose: This study aims to analyze operational risk management in a coffee shop business by identifying operational risks, assessing their severity, and formulating appropriate risk mitigation strategies using the ISO 31000:2018 risk management framework.
Design/methodology/approach: This research employs a qualitative descriptive approach using a case study of Kanca Coffee, a coffee shop located in Bogor, Indonesia. Data were collected through in-depth interviews, direct observation, and questionnaire surveys involving six internal respondents selected through purposive sampling. The analysis follows the ISO 31000 risk management process consisting of risk identification, risk assessment, and risk treatment. Risk assessment was conducted using the probability–impact method proposed by Godfrey, while risk treatment strategies were formulated based on the framework developed by Flanagan and Norman.
Findings/Result: The results identified fifteen operational risks categorized into four main areas: internal process risks, human resource risks, system and technology risks, and external event risks. Risk assessment indicates that three risks fall into the low-risk category, six risks are categorized as medium risk, four risks as high risk, and two risks as extreme risk. The most critical risks include espresso machine malfunction, employee turnover, and raw material supply disruption. Risk treatment strategies proposed in this study include preventive equipment maintenance, employee training and retention programs, improved inventory management procedures, and the development of alternative supplier partnerships.
Conclusion: The study demonstrates that the implementation of structured operational risk management can significantly improve operational resilience and service quality in coffee shop businesses. The application of the ISO 31000 framework provides a systematic approach for identifying operational vulnerabilities and developing effective mitigation strategies in small service enterprises.
Originality/value (State of the art): This research contributes to the limited literature on operational risk management in the coffee shop industry by integrating ISO 31000 risk management principles with practical operational analysis in a small food and beverage enterprise. The findings provide managerial insights that may assist coffee shop managers in improving operational efficiency and long-term business sustainability.

ARTICLE INFO

Keywords:
operational risk management, coffee shop, ISO 31000, risk assessment, food and beverage SMEs

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INTRODUCTION

The global coffee industry has experienced rapid transformation over the past decade, driven by increasing consumer demand, evolving consumption patterns, and the emergence of coffee culture as part of modern lifestyles. Coffee consumption has expanded significantly worldwide, not only as a daily beverage but also as a social and cultural experience embedded in urban communities. This phenomenon has encouraged the rapid development of coffee shop businesses in many countries, including Indonesia. As one of the largest coffee-producing countries in the world, Indonesia holds a strategic position in the global coffee market. National coffee production reaches approximately 725.68 thousand tons annually, contributing about 7.21% of global coffee production and placing Indonesia among the top four coffee-producing countries worldwide. The increasing production trend is also accompanied by rising domestic consumption, which has stimulated the growth of coffee-based businesses across various regions in Indonesia (Figure 1).

The development of the coffee shop industry reflects broader changes in consumer behavior and lifestyle preferences. Coffee shops are no longer perceived merely as places to purchase beverages but have evolved into multifunctional spaces where customers can socialize, work, hold meetings, and participate in creative activities. According to Saefudin et al., coffee shops offer a combination of coffee-based beverages and complementary products such as snacks and meals, providing a holistic customer experience. Moreover, Olifia et al. highlight that coffee shops have become important public spaces that facilitate social interaction and community engagement. This transformation is further influenced by the evolution of the global coffee movement, particularly the third-wave and fourth-wave coffee culture, which emphasize product quality, brewing techniques, and customer experience. As the industry continues to grow, competition among coffee shop businesses becomes increasingly intense, requiring business owners to improve operational efficiency and service quality in order to maintain competitiveness.

Despite the promising market potential, coffee shop businesses face numerous operational challenges that may threaten business sustainability. These challenges include supply chain disruptions, equipment malfunction, inventory management issues, human resource problems, and fluctuating raw material prices. In small and medium enterprises, such operational risks are often exacerbated by limited managerial capacity and the absence of systematic risk management practices. According to Hubbard (2020), risk represents uncertainty that may influence organizational objectives, and effective risk management enables organizations to anticipate and mitigate potential disruptions. Without structured risk management practices, operational disturbances may result in financial losses, declining service quality, and reduced customer satisfaction. Consequently, operational risk management has become a crucial managerial function for businesses operating in highly competitive service industries.

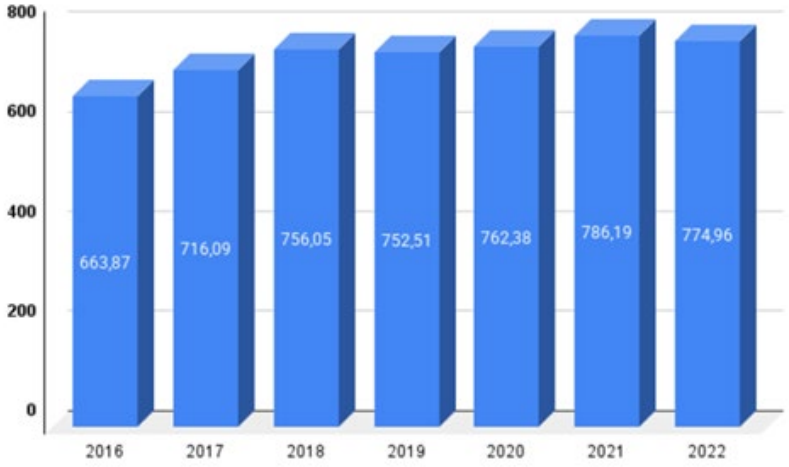

Figure 1. Coffee production data in Indonesia 2016–2022

Operational risk refers to the potential for losses resulting from inadequate or failed internal processes, human errors, system failures, or external events that disrupt organizational activities. In service-oriented businesses such as coffee shops, operational risk is particularly significant because daily operations involve complex interactions among employees, customers, equipment, and supply chains. For instance, machine breakdowns can interrupt production processes, expired ingredients may affect product quality, and high employee turnover may reduce service consistency. These risks not only affect operational efficiency but also influence customer experience and business reputation. Therefore, businesses need to adopt systematic approaches to identify, assess, and manage operational risks effectively. One widely recognized framework for managing organizational risk is the ISO 31000:2018 standard, which provides comprehensive guidelines for risk management implementation across various sectors.

ISO 31000:2018 offers a structured framework that integrates risk management into organizational governance and decision-making processes. The framework consists of several key stages, including risk identification, risk analysis, risk evaluation, and risk treatment. According to Hutchins (2018), ISO 31000 emphasizes a proactive approach in managing uncertainties by encouraging organizations to systematically evaluate potential risks and develop appropriate mitigation strategies. The framework is designed to be flexible and applicable to organizations of different sizes and sectors, including small and medium enterprises. By implementing ISO 31000, organizations can improve risk awareness, strengthen internal control systems, and enhance their ability to respond to unexpected events. As a result, the application of ISO-based risk management frameworks has gained increasing attention in both academic research and managerial practice.

A growing body of literature has examined the role of risk management in improving organizational performance and operational resilience. Previous studies indicate that systematic risk identification and evaluation enable businesses to anticipate operational disruptions and prioritize mitigation strategies. For example, Haryani et al. analyzed operational risk management in small-scale food processing enterprises and found that structured risk assessment significantly reduces operational inefficiencies. Similarly, Siswanto investigated operational risk management in restaurant businesses and demonstrated that the use of structured risk matrices allows organizations to categorize risks based on their likelihood and impact. These findings highlight that effective operational risk management contributes to improved decision-making, operational efficiency, and business sustainability.

In addition to identifying risks, risk evaluation and treatment are critical components of the risk management process. Godfrey proposed a risk assessment method that evaluates risks based on two primary dimensions: the probability of occurrence and the magnitude of impact. This approach allows organizations to classify risks into different categories, such as low, moderate, high, and extreme risks, enabling managers to prioritize risk mitigation efforts. Meanwhile, Flanagan and Norman introduced several risk treatment strategies that organizations may adopt, including risk avoidance, risk reduction, risk transfer, and risk acceptance. These strategies provide practical guidance for organizations to determine appropriate responses to different levels of risk. When integrated into organizational processes, these methods help businesses develop proactive strategies to minimize operational disruptions and improve overall business performance.

Although numerous studies have explored operational risk management in various industries, research focusing specifically on the coffee shop sector remains relatively limited. Most existing studies on coffee shop businesses primarily focus on consumer behavior, marketing strategies, or service quality. While these aspects are important, the operational dimension of coffee shop businesses particularly the management of operational risks has received less scholarly attention. This gap is particularly relevant for newly established coffee shop businesses, which often prioritize market expansion and product innovation rather than systematic risk management practices. As a result, operational problems are frequently addressed reactively rather than proactively, increasing the likelihood of recurring disruptions. Therefore, further research is needed to examine how structured risk management frameworks can be effectively applied in the context of coffee shop operations.

Kanca Coffee, a coffee shop established in 2023 in Bogor City with the concept of an interactive coffee space, provides an interesting case for examining

operational risk management practices. Like many emerging coffee shop businesses, Kanca Coffee faces several operational challenges, including machine breakdowns, expired products being served, and employee turnover. However, the business has not yet implemented a formal risk management system based on recognized standards. Consequently, operational risks may not be properly identified, evaluated, or mitigated, potentially affecting business performance and customer satisfaction. These conditions highlight the importance of implementing a systematic risk management approach to support operational stability and business sustainability.

Based on these considerations, this study aims to analyze operational risk management in Kanca Coffee by applying the ISO 31000:2018 framework. Specifically, the study seeks to identify potential operational risks, assess the level of risk based on probability and impact, and formulate appropriate risk treatment strategies to minimize potential operational disruptions. The novelty of this study lies in the integration of operational risk identification, risk evaluation using the Godfrey method, and risk treatment strategies based on the Flanagan and Norman approach within the context of a coffee shop business. By providing a structured analysis of operational risks in a coffee shop environment, this research contributes to the development of practical risk management practices in the food and beverage sector, particularly for small and medium enterprises. Furthermore, the findings are expected to provide managerial insights that can assist coffee shop managers in improving operational efficiency, strengthening risk mitigation strategies, and enhancing long-term business sustainability.

METHODS

This study employs a qualitative descriptive research design to analyze operational risk management in a coffee shop business. The qualitative approach was selected because the research seeks to explore and understand operational risks occurring in business activities and to formulate appropriate mitigation strategies based on an indepth examination of organizational processes. Qualitative research allows the researcher to capture contextual information, managerial practices, and operational conditions that cannot be fully explained through quantitative measurement alone. According to Sugiyono (2013), qualitative descriptive research is suitable for examining social or organizational phenomena through observation, interviews, and documentation in order to obtain comprehensive and credible findings. Through this approach, the research aims to identify operational risks, assess the level of risk, and propose appropriate risk treatment strategies using the ISO 31000:2018 risk management framework.

The research was conducted at Kanca Coffee, a coffee shop located in Bogor City, Indonesia. The business operates with the concept of an interactive coffee space where customers can socialize, work, and participate in community activities. The research was carried out between January and April 2025, covering the process of preliminary observation, data collection, and data analysis. The selection of Kanca Coffee as the research site was based on the presence of several operational issues experienced by the business, such as equipment malfunction, inventory management problems, and employee turnover. These operational conditions provide an appropriate context for examining how operational risks emerge within daily business processes and how structured risk management practices can be applied to improve operational effectiveness.

The study utilizes both primary and secondary data sources to ensure the completeness and credibility of the analysis. Primary data were obtained directly from internal stakeholders involved in the operational activities of Kanca Coffee. These stakeholders include the chief executive officer, store manager, baristas, and operational staff who possess knowledge about the business processes and operational challenges faced by the company. Secondary data were collected from company documents, operational records, previous research studies, academic journals, books related to risk management, and official reports concerning the coffee industry. The integration of primary and secondary data provides a more comprehensive understanding of operational risks and supports the triangulation of research findings.

Data collection was conducted using triangulation techniques consisting of indepth interviews, direct observation, and questionnaire surveys. Triangulation is widely recommended in qualitative research to enhance the credibility and reliability of research findings. Sugiyono (2013) explains that triangulation involves combining multiple data collection methods and sources in order to crossvalidate information and

strengthen research validity. In this study, indepth interviews were conducted with key informants to obtain detailed insights regarding the operational processes, potential risks, and previous incidents experienced by the company. The interviews were semistructured in nature, allowing the researcher to explore specific topics while also enabling respondents to provide broader explanations about operational conditions and risk management practices.

Direct observation was also conducted to examine the operational workflow of the coffee shop. The observation process included monitoring daily activities such as raw material procurement, beverage preparation, inventory storage, equipment usage, and customer service interactions. Through observation, the researcher was able to identify operational vulnerabilities and risk sources that may not be explicitly mentioned during interviews. In addition to interviews and observations, questionnaires were distributed to selected respondents to assess the likelihood and impact of identified operational risks. The questionnaire results were used as a basis for evaluating risk levels and constructing a risk map that reflects the relative priority of each risk.

The selection of respondents was carried out using purposive sampling. Purposive sampling is a nonprobability sampling technique in which respondents are selected based on specific criteria relevant to the research objectives. According to Sugiyono (2013), purposive sampling allows researchers to obtain information from individuals who have the most relevant knowledge and experience related to the research topic. In this study, six internal respondents were selected because they are directly involved in operational activities and decisionmaking processes within the company. Their positions and responsibilities provide valuable insights into operational risk sources, operational control mechanisms, and the potential impact of operational disruptions on business performance.

The analytical framework used in this study is based on the ISO 31000:2018 risk management standard. ISO 31000 provides internationally recognized guidelines for managing organizational risks through a systematic process consisting of risk identification, risk analysis, risk evaluation, and risk treatment. According to Hutchins (2018), the ISO 31000 framework enables organizations to integrate risk management into their decisionmaking processes and operational activities, thereby improving organizational resilience and strategic planning. In this research, the ISO 31000 framework serves as the main reference for identifying operational risks and developing appropriate mitigation strategies within the coffee shop business context (Figure 2).

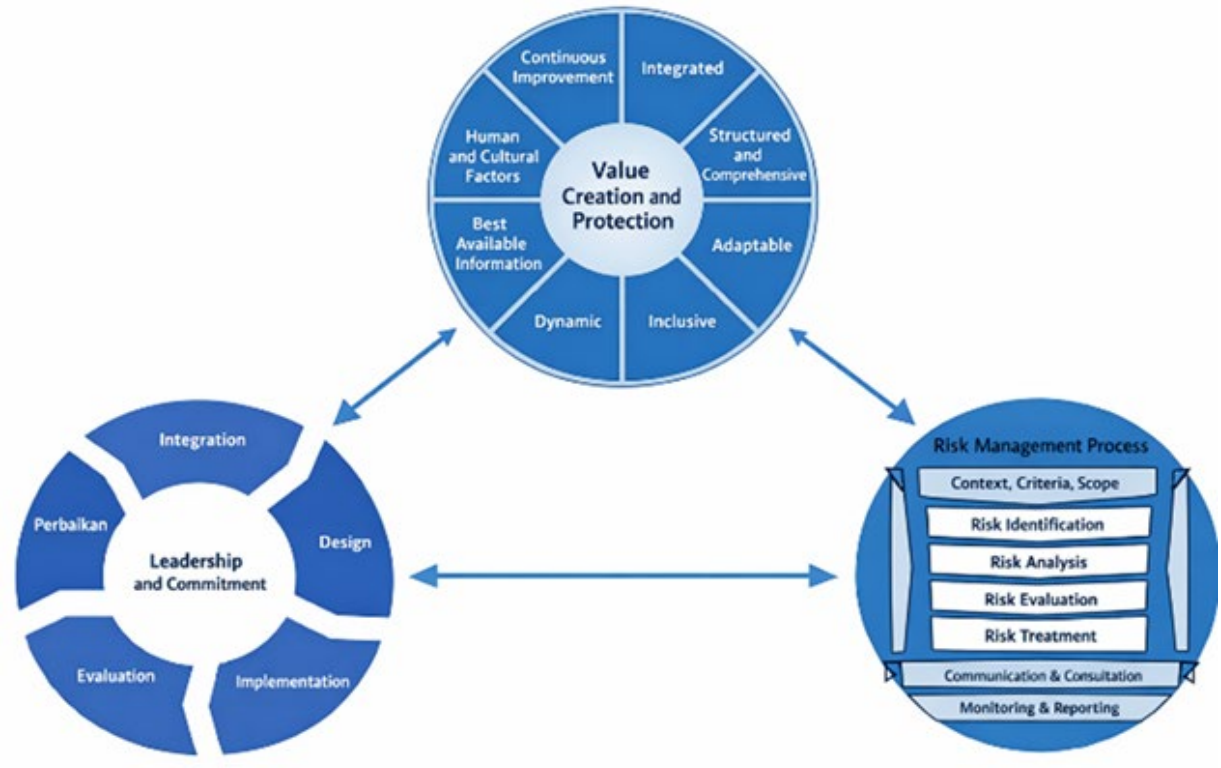

Figure 2. Risk management principles, frameworks and processes

The first stage of the analysis involves identifying operational risks associated with the daily activities of Kanca Coffee. Risk identification focuses on recognizing potential events that may disrupt operational processes or negatively affect business performance. Based on observations and interviews, operational risks were categorized into four major areas: internal process risks, human resource risks, system and technology risks, and external event risks. This classification reflects common operational risk sources identified in service businesses where operational activities rely heavily on human interaction, technological equipment, and supply chain coordination.

The second stage involves assessing the level of risk for each identified risk factor. Risk assessment in this study follows the approach proposed by Godfrey (1996), which evaluates risk based on two dimensions: the probability of occurrence and the magnitude of impact. The probability dimension measures how frequently a risk event is likely to occur, while the impact dimension measures the severity of consequences that may arise if the risk occurs. Each risk was evaluated using a scoring scale derived from questionnaire responses provided by the respondents. The combination of probability and impact scores produces a risk level that indicates the relative priority of each operational risk.

The results of the risk assessment were then visualized using a risk map, which plots risk events based on their probability and impact levels. The risk map allows researchers and managers to identify which risks fall into low, moderate, high, or extreme categories. Risks categorized as high or extreme require immediate attention because they have the potential to significantly disrupt business operations. The risk map also serves as an analytical tool for prioritizing risk mitigation strategies and allocating managerial resources more effectively.

The final stage of the analysis involves formulating risk treatment strategies. Risk treatment refers to the process of selecting and implementing appropriate actions to manage identified risks. In this study, the formulation of risk treatment strategies refers to the framework proposed by Flanagan and Norman (1993), which identifies several possible risk response strategies including risk avoidance, risk reduction, risk transfer, and risk acceptance. Risk avoidance involves eliminating activities that generate risk, while risk reduction focuses on minimizing the likelihood or impact of risk events through preventive measures. Risk transfer involves shifting risk responsibility to other parties, such as through insurance or contractual arrangements, whereas risk acceptance refers to acknowledging the existence of risk while preparing contingency plans.

The application of these strategies in the context of Kanca Coffee aims to provide practical managerial recommendations for reducing operational vulnerabilities and improving business resilience. By systematically identifying risks, evaluating their severity, and developing appropriate mitigation strategies, the study provides a structured framework for implementing operational risk management within a small business environment. The research framework used in this study integrates the stages of risk identification, risk assessment, and risk treatment into a coherent analytical process that supports the development of effective risk management practices in the coffee shop industry (Figure 3).

RESULTS

Respondent Characteristics

The majority of respondents in this study identified as male, constituting 51.00% of the total 600 participants. This aligns with the gender distribution at Bank XYZ, where there are 3,695 male employees compared to 2,941 female employees. By job title, the majority of respondents were staff employees (59,33%), reflecting the proportion of the bank's employee population where staff outnumber managerial positions.

In terms of work experience, the largest group is employees with 11-20 years of service, accounting for 40,83% of the total respondents, suggesting career stability at Bank XYZ. The majority of respondents are based in DKI Jakarta (40,50%), which is also the location of Bank XYZ's head office, with the number of employees in the region reaching 3,203. Despite the random selection of the sample, this distribution mirrors the proportion of the overall employee population.

This section presents the empirical findings of the study and discusses them in relation to previous literature on operational risk management in service-based businesses. The analysis focuses on three main stages derived from the ISO 31000:2018 risk

management framework, namely risk identification, risk assessment, and risk treatment. The findings were obtained through in-depth interviews, observation of operational activities, and questionnaire responses from six internal respondents involved in the daily operations of Kanca Coffee. The results are interpreted to understand the nature of operational risks within the coffee shop environment and to formulate managerial strategies that can improve operational resilience.

Overview of Kanca Coffee Operations

Kanca Coffee is a coffee shop located in Bogor City that was established in 2023 with the concept of an interactive coffee space. The business aims to provide not only coffee beverages but also a comfortable environment where customers can interact, work, and participate in community activities. The operational structure of Kanca Coffee consists of several roles, including the chief executive officer, store manager, baristas, and supporting staff responsible for procurement, service delivery, and equipment maintenance.

The operational activities of the business involve several interconnected processes such as procurement of coffee beans and ingredients, beverage preparation, inventory storage, equipment usage, financial recording, and customer service. Each stage of the operational process requires coordination among employees and relies on both human skills and technological equipment such as espresso machines, grinders, and refrigeration systems. These operational dependencies create potential sources of risk that may disrupt business continuity if not managed properly.

From an operational perspective, small businesses in the food and beverage sector often face higher vulnerability to operational risks due to limited resources, less formalized procedures, and dependence on a small number of employees. Hubbard (2020) explains that operational risk frequently arises from inadequate internal processes, human error, or technological failure. Therefore, identifying risk sources within operational workflows is essential to ensure the sustainability of service-based businesses such as coffee shops.

Identification of Operational Risks

The first stage of the analysis involved identifying operational risks associated with the daily activities of Kanca Coffee. Risk identification was conducted through interviews with internal stakeholders and direct observation of operational workflows. Based on the analysis, fifteen operational risks were identified and categorized into four main areas: internal process risks, human resource risks, system and technology risks, and external event risks. Table 1 presents the identification of operational risks found in the operational activities of Kanca Coffee.

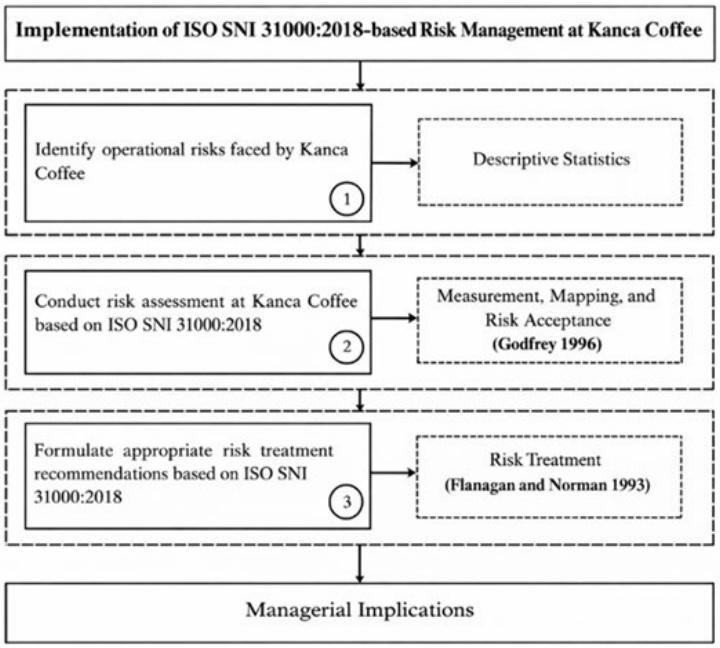

Figure 3. Research framework

The identification process shows that operational risks originate from multiple sources within the organization. Internal process risks mainly relate to inventory management and operational workflow inefficiencies. Human resource risks arise from employee turnover and limited training opportunities that may affect service consistency. System and technology risks are associated with the failure of equipment that supports beverage preparation. External risks are related to factors beyond organizational control, such as supplier delays or fluctuations in coffee bean prices.

Previous studies also emphasize that operational risks in small food and beverage enterprises often originate from similar sources. Haryani et al. (2022) found that operational disruptions in small-scale businesses are frequently related to human error, equipment malfunction, and supply chain uncertainties. Similarly, Rustam (2024) highlights that service-oriented businesses are particularly vulnerable to operational risks because their performance depends heavily on both employee competence and operational equipment reliability.

Operational Risk Assessment

After identifying potential operational risks, the next stage of analysis involved assessing the level of each risk. Risk assessment in this study follows the approach proposed by Godfrey (1996), which evaluates risk based on two dimensions: probability and impact. Probability refers to the likelihood that a risk event will occur, while impact refers to the magnitude of consequences resulting from the occurrence of the risk. Each respondent evaluated the likelihood and impact of the identified risks using a scoring scale. The scores obtained from respondents were then averaged to determine the overall risk level for each risk factor. The combination of probability and impact scores was subsequently plotted in a risk matrix to determine the risk category. Table 2 presents the operational risk matrix based on the probability and impact assessment results.

Table 1. Identification of Operational Risks in Kanca Coffee

Risk Category	Operational Risk Description
Internal Process	Inaccurate inventory recording
Internal Process	Delay in raw material procurement
Internal Process	Incorrect order processing
Human Resources	Employee turnover
Human Resources	Lack of employee training
Human Resources	Human error in beverage preparation
Systems & Technology	Espresso machine malfunction
Systems & Technology	Grinder malfunction
Systems & Technology	POS system disruption
External Events	Fluctuation in raw material prices
External Events	Supplier delays
External Events	Electricity interruption

Table 2. Operational Risk Matrix

Risk Level	Description
Low	Risks with minimal operational impact and low occurrence probability
Medium	Risks with moderate operational impact that require monitoring
High	Risks that significantly affect operational activities
Extreme	Risks that may severely disrupt business continuity

The results of the assessment show that three risks fall into the low category, six risks fall into the medium category, four risks are classified as high risks, and two risks are categorized as extreme risks. High and extreme risks include espresso machine malfunction, employee turnover, and raw material supply disruption. These risks require immediate managerial attention because they directly influence service delivery and operational continuity.

The use of risk matrices in operational risk assessment has been widely adopted in risk management studies. According to Vorst et al. (2018), risk matrices enable managers to visualize risk priorities and allocate resources more effectively in addressing potential threats. Similarly, Hubbard (2020) argues that probability-impact analysis provides a practical framework for evaluating operational risks in service organizations.

Risk Mapping

Risk mapping was conducted to visualize the distribution of risks across different risk levels. The risk map categorizes risks based on their probability and impact scores, enabling managers to identify priority risks that require immediate mitigation. Figure 4 illustrates the risk map generated from the analysis.

The risk map indicates that the majority of identified risks fall within the medium-risk category, suggesting that while these risks may not immediately threaten business continuity, they require continuous monitoring and preventive actions. Meanwhile, risks categorized as high and extreme are concentrated in areas related to human resources and operational equipment reliability.

The visualization of risk distribution helps managers focus on the most critical vulnerabilities within the operational system. According to Hutchins (2018), risk mapping supports strategic decision-making by providing a clear representation of risk priorities and enabling organizations to design targeted mitigation strategies.

Operational Risk Treatment Strategies

The final stage of the analysis involves formulating risk treatment strategies for high and extreme risks. Risk treatment refers to the process of selecting and implementing appropriate actions to mitigate potential operational disruptions. The development of risk treatment strategies in this study follows the framework proposed by Flanagan and Norman (1993), which identifies four primary risk response strategies: risk avoidance, risk reduction, risk transfer, and risk acceptance. Table 3 presents the recommended risk treatment strategies for the most critical operational risks identified in Kanca Coffee.

The implementation of these strategies is expected to improve operational stability and reduce the likelihood of operational disruptions. Preventive maintenance of equipment, for instance, can significantly reduce downtime in beverage production processes. Employee training and retention programs can also enhance service consistency and reduce the risk of operational errors.

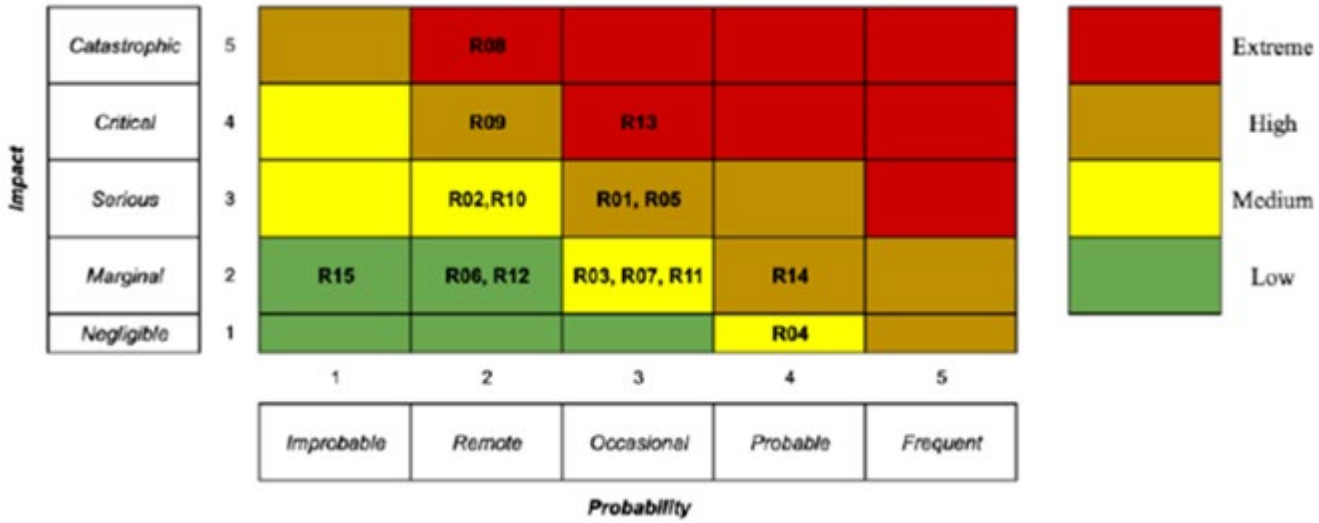

Figure 4. Operational Risk Map of Kanca Coffee

Table 3. Operational Risk Treatment Strategies

Identified Risk	Risk Treatment Strategy
Espresso machine malfunction	Regular preventive maintenance and equipment inspection
Employee turnover	Implementation of employee retention programs and training
Raw material supply disruption	Establishment of alternative supplier partnerships
Inventory recording errors	Adoption of standardized inventory management procedures

Previous studies emphasize the importance of proactive risk mitigation strategies in improving operational performance. Rustam (2024) explains that organizations that implement structured risk management practices are better able to anticipate operational disruptions and maintain service quality. Similarly, Hubbard (2020) highlights that effective risk treatment strategies enable organizations to transform potential threats into manageable operational challenges.

Managerial Implications

The findings of this study provide several managerial implications for coffee shop businesses, particularly those operating in highly competitive urban markets. First, systematic identification of operational risks enables managers to understand vulnerabilities within business processes. Second, risk assessment tools such as probability-impact matrices allow managers to prioritize critical risks and allocate resources efficiently. Third, the development of structured risk mitigation strategies helps businesses minimize operational disruptions and maintain service quality. Mitigation focuses on high and extreme risks, with strategies that consider priority scale, human resources, and timelines. Managerial implications can be applied to management decisions, policies, and practices. These managerial implications are shown in Table 4.

The implementation of ISO 31000-based risk management practices also supports long-term business sustainability. By integrating risk management into daily operational processes, coffee shop businesses can improve organizational resilience and adapt more effectively to environmental uncertainties (Lizarzaburu et al. 2025). These managerial insights highlight the importance of adopting structured operational risk management frameworks within small and medium enterprises in the food and beverage industry (Florio and Brotto 2024).

Overall, the results of this study demonstrate that operational risk management plays a crucial role in improving business resilience and operational efficiency. The application of the ISO 31000 framework in the context of a coffee shop business provides valuable insights into how structured risk management practices can support the sustainability and competitiveness of service-based enterprises.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

This study aimed to analyze operational risk management in Kanca Coffee by applying the ISO 31000:2018 risk management framework. The analysis focused on identifying operational risks, evaluating the level of risk based on probability and impact, and formulating appropriate risk treatment strategies to improve operational stability. The results demonstrate that operational risk management plays a significant role in supporting the sustainability and efficiency of service-based businesses, particularly in the coffee shop industry where operational activities rely heavily on human interaction, equipment performance, and supply chain coordination.

The findings show that operational risks in Kanca Coffee originate from several sources related to internal processes, human resources, technological systems, and external events. Through interviews, observation, and questionnaire-based evaluation, fifteen operational risks were identified across these four categories. Internal process risks include inaccurate inventory recording, delays in raw material procurement, and operational workflow inefficiencies. Human resource risks involve employee turnover, limited training opportunities, and the potential for human error during beverage preparation. System and technology risks relate primarily to equipment malfunction, including disruptions in espresso machines, grinders, and point-of-sale systems. External risks arise from factors beyond the company's direct control, such as fluctuations in raw material prices, supplier delays, and electricity interruptions.

Table 4. Managerials Implications

Operational Risk	Risk Treatment	PIC	Timeline
Expired product serving (extreme)	Implement a QC system using the First In First Out (FIFO) method	Store Manager, Head Chef, Senior Barista	1–2 months
	Implement cold storage and dry storage systems	Store Manager, Head Chef, Senior Barista	
Motorcycle theft (extreme)	Recruit certified professional security personnel	CEO, Store Manager, Finance & Purchasing	1–2 months
	Expand CCTV surveillance coverage	Store Manager, Finance & Purchasing	
	Install a parking barrier system for vehicle entry and exit	Store Manager, Finance & Purchasing	
Products cannot be sold due to stockouts of raw materials (high)	Implement a technology-based inventory management system (real-time stock monitoring)	Finance & Purchasing, Store Manager, Senior Barista, Head Chef	1–2 months
	Implement safety stock and reorder point (ROP) systems	Finance & Purchasing, Store Manager	
High employee turnover (high)	Implement formal employment contracts	CEO, Store Manager, Finance & Purchasing	1–2 months
Damage to coffee equipment and machines supporting operations (high)	Conduct routine maintenance as preventive maintenance	Store Manager, Senior Barista, Head Chef, Finance & Purchasing	3–6 months
	Develop SOPs for the use of coffee equipment and machines	Store Manager, Senior Barista, Head Chef	
Bad weather (high)	Improve physical facilities	CEO, Store Manager, Finance & Purchasing	6–12 months
	Develop online delivery services	Marketing, Store Manager, CEO	
	Provide adequate car parking facilities	CEO, Store Manager, Finance & Purchasing	

The risk assessment results indicate that operational risks in Kanca Coffee vary in severity. Based on the probability–impact evaluation method proposed by Godfrey (1996), three risks were categorized as low risk, six risks as medium risk, four risks as high risk, and two risks as extreme risk. The most critical risks identified in this study include espresso machine malfunction, employee turnover, and disruptions in the supply of raw materials. These risks have the potential to significantly affect operational continuity and service quality, which are essential elements in maintaining customer satisfaction in the coffee shop industry.

The use of risk mapping in this study provides a visual representation of the distribution of operational risks within the organization. The risk map indicates that most risks fall into the medium-risk category, suggesting that although these risks may not immediately threaten business continuity, they require continuous monitoring and preventive measures. Meanwhile, high and extreme risks require immediate managerial attention and strategic mitigation efforts. The application of probability–impact analysis allows managers to prioritize critical operational vulnerabilities and allocate organizational resources more effectively in managing potential disruptions.

To address the identified operational risks, this study proposes several risk treatment strategies based on the framework introduced by Flanagan and Norman (1993), which includes risk avoidance, risk reduction, risk transfer, and risk acceptance. The recommended strategies focus primarily on risk reduction because most operational risks in Kanca Coffee can be mitigated through improvements in operational procedures and organizational practices. Preventive maintenance programs for coffee machines and other operational equipment are recommended to reduce the likelihood of equipment malfunction. Employee training programs and retention strategies are also proposed to minimize the negative impact of employee turnover and human error in service delivery. In addition, establishing partnerships with alternative suppliers can help reduce the risk of raw material supply disruptions.

The findings of this study highlight the importance of implementing structured operational risk management practices in small and medium enterprises within the food and beverage sector. By systematically identifying risks, evaluating their severity, and developing mitigation strategies, businesses can improve operational resilience and maintain consistent service quality. The application of the ISO 31000 framework in this study demonstrates that risk management can be integrated effectively into daily business operations, even within relatively small organizations such as coffee shops.

Recommendation

From a managerial perspective, the results of this study provide several practical implications for coffee shop managers and small business owners. First, businesses should conduct regular risk identification to monitor potential vulnerabilities within their operational processes. Second, the use of structured risk assessment tools, such as probability–impact matrices, can help managers prioritize critical risks and develop targeted mitigation strategies. Third, the implementation of preventive operational practices, including equipment maintenance and employee training, can significantly reduce operational disruptions and improve service reliability.

Despite its contributions, this study has several limitations that should be considered when interpreting the findings. The research focuses on a single case study involving one coffee shop business, which may limit the generalizability of the results to other organizations within the food and beverage sector. In addition, the study relies primarily on qualitative data obtained from internal respondents, which may be influenced by subjective perceptions of operational risks. Future research may expand the scope of analysis by including multiple coffee shop businesses or by incorporating quantitative risk assessment methods to provide broader insights into operational risk management practices within the industry.

Future studies may also explore the integration of digital technologies in operational risk management, such as the use of inventory management systems, predictive maintenance tools, and data analytics to monitor operational performance. Such approaches may enhance the effectiveness of risk management practices and support the development of more resilient business operations in the rapidly evolving coffee shop industry.

In conclusion, this study demonstrates that operational risk management is a critical component in ensuring the sustainability and competitiveness of coffee shop businesses. By applying the ISO 31000:2018 framework, Kanca Coffee can better identify potential operational threats, prioritize risk mitigation strategies, and improve overall operational efficiency. The implementation of structured risk management practices not only supports operational stability but also contributes to long-term business resilience in an increasingly competitive food and beverage market.

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