

Chapter 2: Literature Review

2.1 Introduction

The industrial sector, particularly the flat glass industry, operates in a highly demanding environment characterized by continuous production processes, strict quality requirements, and significant operational risks. In such industries, even minor disruptions can lead to substantial financial losses and safety concerns. Operational Risk Management (ORM) has therefore emerged as a critical discipline that enables organizations to identify, assess, and mitigate risks proactively. This chapter reviews relevant literature on ORM and its relationship with Business Continuity (BC), emphasizing how structured frameworks, employee competence, and organizational preparedness contribute to operational stability. Moreover, recent studies have shifted the perspective of risk management from a purely defensive mechanism to a value-adding function that supports strategic decision-making and long-term sustainability.

2.2 Operational Risk Management (ORM) and Downtime Reduction

Operational risk refers to potential losses arising from failures in internal processes, systems, or human actions. According to Hopkin (2018), effective ORM requires a systematic approach that integrates risk identification, analysis, evaluation, and treatment into daily operations. One of the most critical outcomes of effective ORM is the reduction of downtime, which directly impacts productivity and operational efficiency. Downtime in manufacturing environments can result from equipment failure, human error, or external disruptions. Research indicates that organizations implementing international standards such as ISO 31000 are better positioned to anticipate risks and implement preventive measures. This proactive approach not only minimizes unexpected shutdowns but also improves maintenance planning and resource allocation. In the flat glass industry, where production lines operate continuously and require high precision, downtime reduction is essential. Even short interruptions can affect product quality and lead to significant material waste. Therefore, integrating ORM into operational processes enhances reliability and strengthens the organization's competitive position.

2.3 The Role of Technology in Risk Management

Technology plays a significant role in modern risk management practices. Advanced monitoring systems, predictive maintenance tools, and data analytics enable organizations to detect potential failures before they occur. These technologies support decision-making by providing real-time insights into system performance and risk exposure. For example, predictive maintenance systems use historical and real-time data to forecast equipment failures, allowing maintenance teams to act before breakdowns occur. This reduces downtime and extends equipment lifespan. Additionally, digital risk management platforms facilitate better communication and coordination across departments, ensuring that risk-related information is shared effectively. The integration of technology into ORM not only enhances efficiency but also supports continuous improvement and innovation within industrial operations.

2.4 The Impact of Employee Training on Risk Effectiveness

Human factors remain one of the most critical elements in operational risk management. While frameworks and technologies provide structure, their effectiveness largely depends on the competence and awareness of employees. Research consistently shows that training programs significantly improve risk identification and response capabilities. Employees who receive regular training are more likely to follow procedures correctly, identify potential hazards early, and respond effectively during emergencies. Training also promotes a culture of safety and accountability, which is essential for minimizing operational risks. Furthermore, continuous professional development ensures that employees stay updated with new technologies, regulations, and best practices. Organizations that invest in employee training often experience fewer incidents, improved performance, and higher levels of operational resilience.

2.5 Business Continuity and Organizational Preparedness

Business Continuity (BC) refers to the ability of an organization to maintain essential operations during and after a disruption. Effective BC planning requires a comprehensive understanding of potential risks and the implementation of strategies to mitigate their impact. Preparedness involves developing contingency plans, establishing backup systems, and ensuring clear communication channels. According to Fraser and Simkins (2016), integrating Enterprise Risk Management (ERM) into organizational practices provides a holistic approach to risk management, aligning all departments toward common objectives. In high-risk industries, organizational preparedness is a key factor in maintaining stability. Companies that regularly test their continuity plans and conduct simulation exercises are better equipped to handle unexpected events. This proactive approach not only reduces recovery time but also enhances stakeholder confidence.

2.6 Integration of ORM and Business Continuity

The relationship between ORM and Business Continuity is closely interconnected. ORM focuses on identifying and mitigating risks before they occur, while BC ensures that operations continue during and after disruptions. When integrated effectively, these two functions create a robust framework for organizational resilience. Studies suggest that organizations adopting an integrated approach experience improved coordination, faster response times, and reduced operational losses. This integration also supports strategic planning by aligning risk management with business objectives. In the context of the flat glass industry, integrating ORM and BC ensures continuous production, maintains product quality, and enhances overall performance.

2.7 Summary

This chapter has reviewed the key concepts and findings related to Operational Risk Management and Business Continuity. The literature highlights the importance of structured frameworks, employee training, technological support, and organizational preparedness in managing risks effectively. It is evident that ORM is not only a protective mechanism but also a strategic tool that contributes to operational excellence and long-term sustainability. The integration of ORM with Business Continuity

planning further strengthens organizational resilience and ensures the ability to operate under challenging conditions.

References

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