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Subcontracting Risk Management in the Portuguese Moulds and Plastics Industry

Carolina M. Marques[a], Florinda Matos[a]*

[a] *Iscte-IUL, Av. Das Forças Armadas, Lisbon 1649-026, Portugal*

**Iscte - University Institute of Lisbon - DINÂMIA'CET-IUL - Centre for Socioeconomic Change and Territorial Studies, 1649-026 Lisbon, Portugal*

Abstract

This study explores the implications of subcontracting risk management within the Portuguese moulds and plastics industry. The industry, one with great importance in the national panorama, faces challenges in implementing Enterprise Risk Management (ERM) because of the competitiveness between Small and Medium-sized Enterprises (SMEs) and larger corporations, insufficient risk management reporting, and pressures from globalisation. It addresses the substantial influence exerted by large enterprises and the resulting challenges encountered by SMEs in the context of globalisation. The research emphasizes the critical role of ERM in mitigating risks and enhancing organisational performance. The main findings point out that ERM suffers from inadequate implementation at national-level risk management reporting, thus portrayed by the lack of literature and underscores the necessity for a comprehensive and integrated risk management strategy in the industry, as well as identifies issues such as political instability and tax liabilities, resource allocation, strategic credibility and reputation, technological disruptions and regulatory and compliance changes.

Keywords: Enterprise Risk Management, Subcontracting, Moulds and Plastics Industry, Risk Mitigation

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Keywords: Risk Management, Subcontracting, Business ethics, risk assessment/mitigation SMEs, firms, companies, organisations.

Introduction

In today's globalised world, large enterprises have a profound impact on billions of people's lives, influencing politics, the economy, the environment, society, and culture in subtle and intricate ways. Their decisions about manufacturing and production significantly affect the environment, both domestically and globally [1]. Larger businesses are increasingly dominant compared to their smaller counterparts, influencing public policy, securing subsidies, and minimizing tax obligations through their political power. These policies directly impact the quality of life for millions, leading to strategic alliances with the expectation that both parties will benefit from further expansion. However, subcontracted smaller and medium-sized businesses (SMEs) may often find themselves overshadowed by larger entities, indicating inherent risks that need to be managed using risk management techniques [1].

ERM is a global strategy that can enhance organisational performance by strategising to reduce earnings

* Corresponding author. *E-mail address:* Carolina_Mendonca@iscte-iul.pt; Florinda.Matos@iscte-iul.pt

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volatility, financial distress, and cyclical failures in capital markets [2,3]. Businesses now require a comprehensive strategy and an all-encompassing approach, particularly regarding risk identification, assessment, and mitigation. With globalization, risks have become more complex and interlinked, necessitating integrated strategies. In a typical subcontracting market, a significant number of subcontractors face varying degrees of entry barriers, leading to diverse risk management challenges for businesses operating in such sectors, particularly in the mould and plastics industry [4]. ERM is concerned that potential risks associated with subcontracting could complicate the assessment of noncompliance, lead to operational disruptions among subcontractors, and result in unclear contractual terms and inadequate monitoring, posing unforeseen risks that could be detrimental for businesses, especially small and medium-sized ones [5].

According to CEFAMOL - Portuguese Association for the Mould Industry, in their 2023 report, the industry's prominence is underlined in the national and European panorama, ranked as the third largest European producer and eighth largest worldwide, significantly impacting the automotive industry, accounting for 5.9% of Portugal's GDP in 2016, exporting most of its production [6]. Subcontracting is commonly employed by businesses in this sector, particularly in design, manufacturing, and assembly activities [4]. However, Portugal is still in the early stages of ERM, with the Institute of Internal Auditors taking the lead [3]. The report suggests that regulations like the Stock Exchange Code, Companies Code, and Corporate Governance Code can help integrate ERM, and in case of failure, treaties, organizations, and policy coordination may be used [1].

The present research aims to explore the implications of subcontracting risk management in the Portuguese mould and plastics industry, based on a literature review search conducted through various databases such as Web of Science, Scopus, and Google Scholar. Thus, section 2 presents the literature review, focusing on the literature review methodology explaining the path taken in the selection of documents, databases, keywords, and languages used to research. Subsequently, Subcontracting Risk Management is presented with preceding publications that are analysed. In section 3, the discussion of results is assessed and section 4 makes known the principal conclusions of the study.

Literature Review

Literature Review Methodology

The research is grounded in a thorough literature review of 25 available documents from reputable repositories such as Scopus, Web of Science, and Google Scholar, all texts fully available electronically. This approach ensures that the chosen theme is comprehensively analysed, particularly further on when primary data is gathered through interviews for the implemented case study analysis. The research has utilized the following keywords in both Portuguese and English between September 2023 and July 2024: enterprise risk management, subcontracting, Moulds and Plastics Industry, subcontracting risk management, risk assessment/ risk mitigation, business ethics, strategic risk management, subcontracting, and SMEs.

Table 1. Articles by research dimension

Dimension	Number of studies	Reference
Enterprise Risk Management	10	[2], [3], [10], [11], [12], [14], [18], [21], [23], [25]
Strategic Risk Management	3	[13], [14], [20]
Subcontracting	4	[1], [4], [5], [16]
Moulds and Plastics Industry	2	[6], [7]
Risk assessment/mitigation	4	[1], [16], [17], [22]
Business Ethics	4	[8], [9], [15], [22]
SMEs	2	[19], [24]

Source: Elaborated by the authors.

Subcontracting Risk Management

The Portuguese mould industry, established in the 1940s, grew from a small American buyer who partnered with a small company in Marinha Grande. The industry is divided into Marinha Grande and Oliveira de Azeméis, with 90% of production exported to end-user industries in the US, Canada, and the EU. Portugal has been a top 10 exporter of plastic injection moulds for years. [7].

Previous studies have explored subcontracting due to efficiency concerns, wage cost differences, and labour market flexibility [5]. The coexistence of contract and regular labour increases profits when subcontractor bargaining power is endogenous and increases with output, as well as when input suppliers and subcontractors compete less. Multi-party employment can lower fair wages, leading to profit-maximizing employers subcontracting for rent-sharing arrangements, while low employee morale can hinder productivity [8].

Management often views risk management through silo-based lenses, overlooking system alignment with organisational goals and strategy [9]. Globalisation has led to a paradigm shift, exposing businesses to risks like supply chain, currency, and geopolitical issues. ERM has evolved as a vital tool for businesses to effectively address these challenges, requiring a more flexible approach, due to the interconnectedness of the world's markets and an integrated risk organisation centralising reporting to the CEO and the Board of Directors [3, 10]. A paradigm change in risk management ideas is necessary for effective risk transfer mechanisms, as a silo approach can hinder long-term goals and communication [11]. However, because it excludes pluralism within and between portfolio risk categories, this approach frequently results in over-hedging and unnecessary insurance coverage. Thirdly, to comply with ERM regulations, RM needs to be integrated into an organisation's business procedures. Compared to defensive or control-oriented strategies used to manage profit volatility and downside risk, it enhances the performance of businesses by supporting and influencing decisions about pricing, resource allocation, and other business-related concerns [12].

ERM disclosures are essential for compliance with laws and regulations, and effective integration of ERM among Portuguese non-financial enterprises is crucial. Portuguese plastic injection companies offer a chance to explore their importance in the development of company boundaries in terms of competencies [7]. Moreover, Strategic risk management (SRM) is the process of identifying, evaluating, and managing risks and uncertainties affecting an organisation's strategy and objectives, focusing on risks with the greatest impact on shareholder value [13]. Nonetheless, business strategy is also defined as a strategic approach to managing enterprise risks to achieve company goals and maximize company value [14].

An organisation that incorporates ERM into its strategy may be able to capitalize on its strengths and opportunities, reduce risks, and recognize threats compared to competitors [14]. Strategic partnership agreements often benefit all parties, but SMEs are often outperformed and face disadvantages from larger corporations. Risk management processes are crucial for SMEs to gain a competitive edge, but inadequate risk management can negatively impact performance [1, 14].

The economic crisis and globalisation have increased pressure on managers, leading to an increase in power abuse. Size is a common factor in power misuse, particularly between larger companies and smaller suppliers [15]. Abuse occurs more frequently when power disparities are central. Studies on negotiation highlight factors related to unethical behaviour, such as the need to restore fair play, competition's nature, and greed in the pursuit of profit. This highlights the importance of understanding and addressing power imbalances in buyer-supplier interactions [15, 16].

Research shows that risk reporting disclosures are often backwards-looking, general, and qualitative, influenced by a company's public visibility and agency costs [3]. This is especially true in economically distressed countries with less developed legal systems. Companies prioritize transparency in risk reporting to maintain strategic credibility and reputation. Enhancing risk reporting is facilitated by corporate governance mechanisms [3].

The Global Risks Report of 2023 underscores the importance of ERM in climate risk management and decision-making. It identifies top global risks, including economic, environmental, geopolitical, societal, and technological categories, and suggests strategies like social initiatives, public-private partnerships, ESG reporting, and resilient supply chains. Thus, it is suggested by the report action on risk reduction and preparedness in the next decade to spring action to the following risks: economic downturn, lack of opportunity, asset bubble bursts, cyber insecurity, the concentration of strategic resources, pollution, and concentration of technological power [17].

The regulatory environment significantly impacts ERM practices, requiring companies to adapt risk management methods and stay updated with new laws to ensure compliance and avoid legal issues, even if different sectors and regions have different regulatory requirements [12].Thus, risks are dynamic, changeable, and connected, making them difficult to manage like separate entities. Businesses must now manage their risk portfolio more integrately due to business climate volatility, moving away from a silo model where distinct threats are handled by different departments or teams [12].

The disjointed approach to risk management is ineffective due to the close link between risks, leading to poor, inefficient, and inadequate risk management. This can result in unstandardized reporting, inconsistent

techniques, and a lack of standardization in risk assessment [12]. While risk awareness, people, skills, incentives, culture, and values reflect laxer aspects of ERM, other aspects contrast, such as measures, reporting, risk oversight committees, policies, assessments, and audit processes [12]. Effective communication of expected benefits and value addition is crucial for successful implementation. In particular, the mould-making sector depends on a comprehensive range of capital, substantial expertise, and added value to provide high-quality services and a competitive, unique offering [6].

Behavioural biases in risk management decisions, such as agency and information problems, are recognized as potential risks and address conflicts between companies and external parties, requiring effective management systems to facilitate and validate information flow. To effectively estimate the impact of various risks inside the businesses, correlations between different categories of risks must be considered [10]. Businesses often overlook connections between risk categories, and make the mistake of completely disregarding connections, leading to mismanagement of risks. Strategic risk hazards are difficult to quantify, but simplifying complex issues can increase the likelihood of negative cash flow shortages [18].

Risk identification is a continuous process as each risk must be described, and there must be causes and repercussions to be properly identified. This is an interactive activity because new risks may arise as a project progresses, and current risks may become more apparent [19]. As more companies engage in projects that have inherent risks at different stages, risk becomes an increasingly important component of project management. Managers must manage risk within a framework of values and priorities. To lower risks, managers must continuously integrate procedures and operations, for example, key risk indicators should be linked to KPIs and tracked against risk tolerance levels [11; 12], in which ERM integration optimizes the organisation's risk/return profile. It is crucial to protect businesses and create long-term value [20].

SMEs face increased risk vulnerability due to resource constraints and structural features, managers often lack access to risk assessment tools or resources, or they may need more resources since hazards may involve an element of ownership or accountability. Despite exposing SMEs to greater risk, innovation creates new opportunities and helps them lead in the market [20]. Nonetheless, companies must manage dependencies and risks comprehensively to avoid major disasters. Companies will invest in ERM only when they see more feasible returns.

However, businesses claim that ERM can enhance debt ratings, and stock prices, decrease losses, reduce risk exposure, and lower regulatory capital needs. Simultaneously, they found that organisations with superior corporate governance tend to be more highly valued, profitable, and less risky. Investors will also be prepared to pay more for businesses with sound governance [11; 12]. ERM is a highly effective strategy for improving business performance and argues that a comprehensive risk management strategy can boost shareholder value in a market with market frictions [2; 21].

A company's ability to identify and manage risks was found to be largely determined by its ability to adapt to external changes, accept them, and seize opportunities, leading to proactive governance. So, business risk assessment is a popular strategy for senior managers, but it's advisable to consider the challenges of ERM adoption [20].. Risk quantification and assessment involve identifying who oversees risks, using analytical input for decision-making (ex-ante), maximizing the company's risk/return profile, and monitoring decision performance post-implementation (ex-post) [12, p. 387].

Formal ERM approaches benefit large enterprises, as they require more formal risk management, although not necessarily for SMEs. However, complex ERM indices are still unsuitable for nonfinancial sectors. ERM has a mediation function for SMEs, highlighting the importance of organisational culture and strategic performance evaluations [22]. Adopting ERM reduces business risk and improves performance, thus enhancing strategic and operational choices while reducing costs [2].

Foreign money can pose challenges for businesses, but implementing ERM in nonfinancial SMEs can improve organisational culture and reduce the negative effects of foreign ownership on financial performance. Nevertheless, formal ERM methods may become rigid as companies expand. Modern portfolio theory suggests ERM may erode value by assuming capital markets function flawlessly and shareholders can eliminate risks through diversification [2; 23; 24]. Modern portfolio theory suggests ERM may erode value by assuming capital markets function flawlessly and shareholders can eliminate risks through diversification [2; 23; 24]. Yet, if they fail to implement ERM, growing organisations can miss out on opportunities to improve their performance and commercial value. From a management perspective, it would be useful to understand why certain mid-sized organisations have

not implemented ERM or are unwilling to do so [24].

Subcontracting is a global trend used by companies to gain a competitive edge, improve operational performance, and lower costs. It offers value, differentiation, and flexibility while reducing risk and operational expenses. Subcontracting involves partnering with companies to produce goods and services, benefiting from the partnership. However, it also poses risks like control loss, market and quality issues, and regulatory issues [4]. Nevertheless, research finds that business strategies indirectly impact organizational performance, while Enterprise Resource Planning (ERP) significantly enhances performance through formal integrated processes [4, 5; 7; 14].

Global market uncertainties include competitive shifts, technological advancements, supply and demand variations, labour concerns, and environmental laws. It is a concern that entrepreneurs may exploit mobility to bypass national laws [1; 4; 5]. Working conditions at subsidiaries or subcontractors in newly industrialized countries have improved, albeit in significantly smaller numbers. Employers benefit from fierce rivalry amongst subcontractors, and delays in subcontracting occur when both parties overlook the influence on labour effort [5]. Yet, businesses subcontract tasks to observe cost advantages due to subcontractor's negotiating power, competition, and wage cohort. Fissured labour markets pay differences, and the growth of subcontracting intermediaries can increase internal production competitiveness [4].

Subcontracting can lead to inefficiencies and risks in businesses, especially with increasing complexity and stakeholder involvement. Employers may suggest subcontracting to maximize profits, especially when fair pay is lower, but this generally doesn't result in efficiency losses. For instance, when subcontracting comes with no upfront costs for hiring [4]., it can lead to dissatisfied employees and enterprise performance management cancelling the contract, resulting in lost incentives and bonuses for several subcontractors [4; 22].

In all fairness, employers may commit offences against the law and decency that a subordinate cannot remain silent about, and neglecting to report can increase the offence and make the subordinate legally liable [8]. Promoting whistleblowing maintains trust between superiors and subordinates, although supporting and tolerating whistleblowers makes the subordinate defenceless against dishonest superiors, as the latter no longer honours or acknowledges his duty to the former [8], i.e. non-mediated power sources like reference and expertise are influenced by a weaker agent's perception of power. The purchasing company controls the degree of influence on non-mediated power, while mediated power sources shape the target's conduct. The buyer's power over the provider increases the likelihood of unethical supplier exploitation [16].

Time constraints, limited resources, and competition are putting pressure on modern enterprises, influencing stakeholders' attitudes and actions [15]. Employees desire higher pay, and better working conditions, consumers seek quality at lower costs, suppliers expect price increases, banks demand interest rates and guarantees, and governments may impose business restrictions [15]. Unethical business practices include fraud, unfair competition, contract breaches, unjust treatment of stakeholders, and misuse of authority, often occurring during negotiations, especially in mergers and acquisitions. Still, being important to address, ethics in business and entrepreneurship cannot be addressed by corporate governance and corporate social responsibility (CSR) alone [15].

Management often prioritizes financial gains, leading some firms to establish a favourable corporate reputation for strategic advantage. However, others prioritize making money, "even at the expense of distancing themselves from ethical behaviour" [9, p. 646]. Unethical actions may increase transaction costs by cooperating with those kinds of suppliers [9]. Moral conduct can align with effectiveness, profit, or self-interest, depending on market and client expectations. Some companies operate ethically, focusing on environmental respect, while others regulate behaviours to provide reassurance [9]. The ultimate goal is to manage SMEs' risk exposures and frame their willingness and ability to accept them. Nevertheless, recognising the consequences of frictions, such as subcontracting issues between the company and other parties [25].

Discussion

After conducting a literature review, it is apparent that ERM in the subcontracting field is still in the early stages of development in terms of identifying, assessing, and mitigating risks, particularly the implementation and standardization of ERM in Portugal. Some risks can be easily managed and overcome through reporting and proper analysis, while others require a comprehensive approach to be successful and sustainable continuously since RM processes require unceasing updates to be effective. The subcontracting risks mentioned may become more complex when dealing with SMEs, as they may be more specific to the context. SMEs are a significant part of the Portuguese context, particularly in the Portuguese Plastics and Moulds and automotive industries.

To assess some of the risks identified in the theoretical documents, an analysis using the political, economic, social, technological, environmental and legal factors provided by the theoretical research on a Likert Scale from 1 to 5 was formulated using the literature review as a foundation to evaluate the seriousness of each risk and its significance in the context being studied in the current document.

For instance, changes in consumer behaviour could significantly impact demand for products and services, requiring businesses to adapt their strategies rapidly. Since the plastics and moulds industry needs logistical preparation in advance, it can constitute and present itself as a high risk if not anticipated quickly and effectively.

Businesses—SMEs specifically—are likely to encounter major hurdles in the context of growing globalisation. The widening power disparity between large corporations and their smaller subcontractors may lead to heightened risks of exploitation and ethical dilemmas, as SMEs struggle to assert themselves in increasingly unbalanced relationships. Furthermore, because SMEs naturally have fewer resources and knowledge gaps, integrating ERM continues to be a critical barrier. As technology advances rapidly, businesses must continuously adapt to market changes while maintaining high standards and competitive advantages. The ever-changing regulatory framework will make compliance efforts more challenging, particularly for SMEs in global markets. Given that organisations are trying to secure long-term viability and success in a highly dynamic and interconnected world economy, this complex challenge necessitates a fundamental redefining of risk management tactics.

Table 2. Subcontracting Risk Management using the analysis on a Likert Scale

Factors	Risk Description	Scale	Risk Level
Political	Political instability/ tax liabilities [19]	4	
Economic	Economic recession [4]	5	
	Resource allocation [8; 12; 13]	3	
Social	Changes in consumer behaviour [6; 10; 21]	5	
	Strategic credibility and reputation [17]	4	
Technological	Technological disruptions [14; 19; 25]	4	
Environmental	Climate change impacts [3; 19; 25]	3	
Legal	Regulatory and compliance changes [12; 19]	4	

Table Key:

Risk Level	**Colour Code**
Very low	
Low	
Medium	
High	
Very High	

Source: Elaborated by the authors.

Conclusion

As previously mentioned, the Portuguese mould industry plays a significant role in the national economy, producing a wide range of industrial products and requiring capital and expertise. This industry is strategically significant to the national economy, positioning Portugal as a well-known and respected nation in the manufacturing of plastic injection moulds.

Effective risk assessment management is crucial for companies, especially those in subcontracting arrangements, to navigate contractual challenges. This process involves identifying and analysing changes in social, cultural, demographic, financial, and consumer behaviour that influence market dynamics and consumer preferences. Implementing ERM processes is fundamental for organisational resilience and success.

At the present moment, as an exploratory paper, potential biases are still being thoroughly identified and explored, including sources, conflicts of interest, and author connections. The intended empirical research based on data collection with the industry's companies is going to be further analysed, which includes bolstered graphics such as tables and graphs to highlight important connections and patterns.

Further research on subcontracting ERM is expected to focus on understanding how SMEs can include tailored risk management systems to mitigate risks and improve operational resilience in the face of changes in the global market. As part of managing the complexity of multi-party employment contracts and subcontracting arrangements,

this entails researching the changing dynamics between large enterprises and their subcontractors, addressing power disparities, as well as building more autonomous SMEs that are less dependable on bigger corporations and creating sophisticated risk assessment tools.

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