

RISK MITIGATION OF STAKEHOLDERS MANAGEMENT IN CONSTRUCTION INDUSTRY VIA ERM METHODOLOGY DURING COVID-19

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Stakeholders management is attracting more attention in the construction industry, and this has been particularly the case during the COVID-19 as the stakeholders' role has been either absent or neglected. In this situation, limitations are seen to exist in the Enterprise Risk Management (ERM) methodology, and consequently, more effort is required to improve risk mitigation. The aim of this study is to review the best practice as seen in the literature relating to the impact of stakeholder management. In this respect, twenty articles are reviewed, showing the promising possibility of developing a framework for ERM. Specifically, the findings from the analysis highlighted eight stakeholder-related parameters with high impact, these being: maturity, sustainability, decision-making strategy, leadership and guidelines, knowledge-sharing and culture, social responsibility, risk auditing and standardization, and training. The strength of risk response can be vastly improved if all these parameters are taken into account in the ERM methodology adopted during periods of crisis.

INTRODUCTION

Stakeholders management contributes towards risk mitigation and helps in the discovery of appropriate strategies to improve stakeholders engagement, and this is true especially during times of crisis, for example, economic recession and pandemics (e.g., COVID-19) when the philosophy of risk management through stakeholder management is slightly different from in normal times. Stakeholders' interests in risk management and associated activities, together with their knowledge of ERM activities are helpful in mapping out a risk mitigation strategy. However, in the construction industry, there are different levels of stakeholder engagement. In this context, stakeholders are important since they can contribute to, and influence the way in which ERM is implemented, which during times of crisis requires a certain perspective. Professional bodies such as the Casualty Actuarial Society [1] have reported effective external pressures on ERM by various stakeholders such as regulators, rating agencies, stock exchanges, institutional investors, and corporate governance bodies. But there is no one way to proceed in terms of risk mitigation and each organization must make its own way forward, focusing on its people, both internal and external. However, stakeholder theory requires management to determine its road ahead bearing in mind the need to balance the interests of all stakeholders who are touched by a firm's operations [2], even those who respond negatively and who require more encouragement from the firm to engage. Recognizing this situation, ERM in construction organizations is usually designed to please all stakeholders and to make the best use of the value in their different perspectives, but there are two pressing questions in this respect: are stakeholders learning from the crises that have repeatedly occurred in recent years, and is the construction industry accurately forecasting stakeholders' reactions and able to respond to these? In 2012, Collinge[3] argued that the factor of stakeholder ignorance constitutes a source of risk in construction projects, and subsequently, Motaleb [4] observed that "stakeholders knew very little about the actual risk mitigation process and it was orientated towards the result". There is also a criticism in the literature that ERM has not yet provided a solution to this problem although many organizations have developed

their ERM methodology. This situation motivates the objective of carrying out a robust literature review and analysis of ERM methodologies to see how they can be more effectively used.

LITERATURE REVIEW

Since the declaration of the coronavirus (COVID-19) pandemic, many industries have put projects on hold until further notice. The impacts of such inevitable decisions provide a set of lessons for learning and it is important to take this learning and make effective plans for the future. The findings from studies conducted during this difficult time will help stakeholders mitigate risks in the future by preparing worst-case scenarios during the risk management planning. Enterprise Risk Management (ERM) is a key driver in the discipline. A study conducted by Alshare et.al. [5] has demonstrated the value of stakeholder engagement in understanding the early impacts of the pandemic on the construction industry.

In this research paper, twenty articles are reviewed in an effort to establish the key features and establish shortcomings in the existing knowledge about the construction industries. As yet, these shortcomings are hardly documented since no comprehensive information about ERM during times of crisis in the construction industry is currently available. Table 1 indicates the twenty articles, from which it can be seen that construction firms of different sizes are featured in the review and that ERM methodologies vary. The research articles are categorized according to the author(s), ERM methodology, rating of exposure to stakeholder management (high, medium, low), and qualification of the impacts/benefits of ERM methodology on stakeholders. The articles do not provide the whole picture but rather give an indication of the importance of stakeholders' impact within ERM, which suggests the need for more engagement effort to improve risk mitigation strategies during pandemics/crises. They also show the importance of several particular features identified in the ERM methodology as being essential to risk mitigation.

In this respect, two authors have agreed on the influence of “chief risk officer (CRO) quality” or “leadership” on ERM effectiveness and measured the research as having a high impact on stakeholders management [6][7]. This confirms the strong influence that CROs exert on the adoption of ERM as a means of underpinning greater stakeholder management and risk mitigation. Firms that are “maturity-oriented” are seen to have a high impact on their stakeholders and reflect consistency in their current ERM framework/model, meaning that the longer ERM has been in evidence in an organization, the greater the influence that has on the firm's value [8][9][10]--[11].

Decision-making at the strategic, tactical, and operational levels of risk assessment is also seen to have transformed the ERM function in a company over time, bringing new ideas and managing knowledge across boundaries to help stakeholders such as top management to make decisions regarding the acceptance of new risk management technologies [11] and it is also noted that a better basis is provided by ERM at the strategic, tactical and operational levels of potential risk profiles [12]. Borkovskaya et al. [13] note how the ERM methodology has improved the exposure of construction managers, engineers, risk managers, and industry leaders to the notion of “teaching and training versus knowledge”. Additionally, the effectiveness of interactive teaching techniques and the need to identify and quantify the impact of various categories of risk on the skills of construction managers, engineers, risk managers, and industry leaders is highlighted, together with the opportunities for pursuing effectiveness within professional training programs for the knowledge collective. It has been observed that in those firms with ERM strategic-oriented methodology, high stakeholder involvement has brought effective risk management in times of financial crisis [10][14]. Additionally, the impact of ERM strategic management on two aspects of organizational performance - strategic flexibility and supply chain performance - is observed [15]. Golshan and Rasid [16] and Cornejo et al. [17] have agreed on the fact that the effective application of ERM is associated with the involvement of the “risk auditing” committee. In this respect, the independence of that committee is seen to help build a corporate reputation as that independence testifies to the knowledge and diligence of its members, and their consequent effect on the framework and quality of the ERM system. Abdul Aziz et al.[18] have demonstrated the importance of “sustainability” in ERM, observing that the stakeholders are the drivers in identifying the methodology since the pursuit of sustainability has addressed the potential opportunities for improved stakeholder involvement in ERM practices. The action of adopting ERM standards has established risk management cells, defined



staff duties in respect of risk management, and formulated some risk management strategies at the level of senior managers in companies and academia [19]. The “indicators of knowledge, culture, and structure” in respect of organizational ERM adoption and its impact on company performance were observed by Abdullah et al.[20], Shatnawi et.al. [21] and Ching et al. [22] noted that the application of ERM methodology helps to realize company objectives. Kuo [23] has noticed “corporate social responsibility (CSR)” as part of ERM methodology has had noticed a positive effect on CEOs and top management.

The ERM has been influenced by stakeholders since the pressure of external stakeholders has been quantified across different institutional contexts [24]. However, it is seen in many construction organizations that ERM systems are characterized by weak stakeholders involvement especially during times of crisis; and several research studies have been undertaken to improve ERM methodology, as shown in Table 1. This research study is concerned with bridging the gap between weak and good practices in ERM and creating effective parameters that optimize crisis management and can be improved by incorporating all the features of best practices. Table 2 suggests such a framework showing a chain of measures for risk mitigation and how more inter-relationships between the investigated parameters might be pertinent in order to add strength to traditional management. The parameters in Table 2 could be grouped to become inputs to ERM framework development, to ensure both positive impacts and benefit from utilizing such a model during a crisis like COVID-19. The development of traditional ERM during a crisis is vital since, in such a time, there are problems of low knowledge-sharing, fewer standards and ineffective risk auditing, weak leadership, low decision-making, weak training, and less involvement in communities (social). In addition, figure 1 has shown limited research in sustainability and social responsibility in ERM for stakeholders management. A developed framework can help ERM in the construction industry to pinpoint effective risk mitigation to sustain assets, health and safety, risk response quality, communication improvement, conflict management, and stakeholder accountability, Furthermore it can properly define the risk management function that in turn progresses the chief risk officer’s role (leadership), and improve existing practices during crises like COVID, especially for firms that are still practicing traditional management. More investigation and tracking of new parameters will be of benefit in the context of bringing forward new intelligence relating to integrated crisis management.

Research	ERM Methodology	Quantify Impact of Stakeholders on ERM Methodology
<i>Daud et al., 2010; Al-Farsi, 2019,</i>	<i>Quality of Chief Risk Officer (CRO)</i>	<i>High effectiveness of chief risk officer (CRO) on ERM board of directors in public sectors</i>
<i>Zhao et al., 2013; Makarova, 2017; Farrell and Gallagher, 2019.OECD, 2021</i>	<i>Maturity-Oriented</i>	<i>Optimization in the firm’s valuable assets and company’s stakeholders’ opinions/planning/culture/roles and responsibilities/information</i>
<i>Anita Meidell and Katarina Kaarbøe, 2016; Ibrahim and Esa (2017)</i>	<i>Decision-making Oriented</i>	<i>Influenced decision-makers, selling new ideas and managing knowledge across boundaries. Tactical on a strategic level and operational levels of potential risk profiles</i>
<i>Borkovskaya et al., 2018 Arnold et al., 2015;Ahmed et al., 2014; Farrel, and Gallagher, 2019</i>	<i>Teaching and Training versus knowledge with Strategic-oriented</i>	<i>Identifying and quantifying the impact of various categories of risks on stakeholders’ skills Strategies optimize stakeholders’ skills to manage risks effectively</i>
<i>Golshan and Rasid, 2012; Cornejo et al., 2019</i>	<i>Risk Auditing</i>	<i>Effective audit committee characteristics (i.e. independence and independent members’ knowledge and diligence)</i>



<i>Abdul Aziz et al., 2016</i>	<i>Sustainability</i>	<i>Potential opportunities for stakeholders' improvement in ERM practices.</i>
<i>Abdullah et al., 2012, Shatnawi et al., 2019, Ching et al., 2020</i>	<i>Indicator of knowledge, Organisation Culture, and Structure</i>	<i>Stakeholders impact the company's performance.</i>
<i>Liu et al., 2014</i>	<i>Adopting ERM standards/guidelines/ leadership</i>	<i>Established risk management cells and defined staff's duties</i>
<i>Kuo et al., 2021</i>	<i>Corporate social responsibility (CSR)</i>	<i>Confident CEOs with higher shareholdings have a stronger coherence with firms</i>

Table 1: Research focuses on high impact parameters of ERM methodology for stakeholders management

No	Stakeholder-related Parameter	Impact	Area of Risk Mitigation Improvement
1	<i>Maturity</i>	<i>Stakeholders' Opinions</i>	<i>Companies' assets</i>
2	<i>Sustainability</i>	<i>Crisis and Risk Management Consistency</i>	<i>Health and Safety</i>
3	<i>Decision-making Strategy</i>	<i>Risk Assessment Credibility</i>	<i>Risk Response Quality</i>
4	<i>Leadership (CRO quality)</i>	<i>Internal and External Politics Flexibility</i>	<i>Communications</i>
5	<i>Knowledge-sharing and culture</i>	<i>Culture management</i>	<i>Conflicts</i>
6	<i>Social responsibility</i>	<i>Community Morale</i>	<i>Stakeholder Accountability</i>
7	<i>Risk Auditing and Standardisation</i>	<i>The Creativity of Stakeholders' Roles</i>	<i>Risk Management Function for Defining of Chief Risk Officer's Role.</i>
8	<i>Training with high strategic-oriented</i>	<i>Crisis Management</i>	<i>Existing Practices during crises like COVID/Financial crisis.</i>

Table 2: A suggested framework for ERM methodology improvement for risk mitigation during a crisis

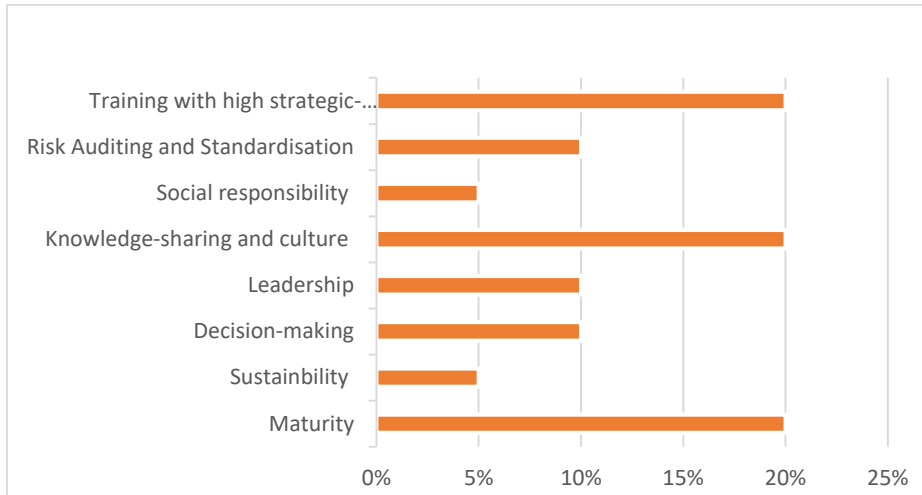


Figure1: ERM methodology parameters for effective stakeholders management.

CONCLUSION

The findings of this paper will help ERM to appreciate the negative influence of stakeholder ineffectiveness in the construction industry, and recognize the need to embody responses for worst-case scenarios within the risk management. ERM with low stakeholders orientation has shown poor ability to bear risks during crises, leading to the argument for addressing the features which can increase stakeholders' involvement and thereby promote better risk mitigation. It is recommended that more studies related to different ERM frameworks be conducted as the findings from the twenty research papers reviewed differ with some authors agreeing with others, and others disagreeing. Crisis management must be introduced as a means of mitigating risk during a pandemic situation and in this respect, it is essential to consider strategies that have proved useful in previous times of crisis. In this context, eight mitigation parameters have been found to be effective.

Certain limitations of the research are identified as follows: limited data was available regarding the construction sector during COVID-19, and this particularly applied to those countries whose economic statistics were not fully documented during this pandemic; the evaluation and assessment made in the study were based purely on the published literature which was not comprehensive and cannot be generalized to all construction sectors. However, in terms of making a contribution, the research focuses on a plan for an effective ERM methodology that is positively influenced by increased stakeholders management, and which will help manage uncertainties and risks within the construction industry during a crisis.

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